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Reading Comprehension Strategies

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Cincinnati Children's Hospital

Speechpathology.com webinar
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Relevant Financial Relationship

Dr. Coen-Cummings is a paid employee of the Cincinnati Children’s Hospital and will be referencing her place of employment along with actual case studies.

Dr. Coen-Cummings has a family member who has been diagnosed with ADHD which is covered in the presentation. She is a reviewer for speechpathology.com and Learning By Design, Inc.
Course Description

This course will provide a review of the 5 Pillars of Reading Comprehension, Strategies that a speech-language pathologist can train a student to utilize which will increase their reading comprehension, and demonstration of how metalinguistic training can improve reading fluency. Evidenced-based treatment will be discussed and demonstrated in treatment videos.

Learning Outcomes

"After this course, participants will be able to…"

• Identify the 5 Pillars of Reading Comprehension.
• Describe the training for each Pillar of Reading Comprehension strategy.
• Describe metalinguistic training as it relates to text reading.
SLP’s Scope of Practice

ASHA’s SLP Scope of Practice includes language (comprehension & expression) and literacy (reading, writing & spelling).

Within reading and writing, most attention has focused on phonological awareness and word decoding activities.

This presentation will focus on the SLP’s role in teaching/supporting reading comprehension.

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SLP’s Roles and Responsibilities in Literacy

Have responsibility for all aspects of literacy

Balanced approach important

Reading is complex

The National Reading Panel (2000) describes the five pillars of reading as

1. Phonemic Awareness
2. Phonics (letter-sound correspondence; decoding and encoding)
3. Vocabulary
4. Reading fluency
5. Reading comprehension

There are cognitive aspects of reading that may also hinder one's reading ability

1. Speed of processing
2. Executive function skills (e.g., working memory and inhibition)
3. Attention

Difficulties or inconsistencies in one of these areas could cause difficulties or inconsistencies in any or all of the five pillars of reading.

It is extremely important to address these cognitive aspects associated with reading when assessing reading ability.
What is Reading Comprehension?

- Ultimate goal of reading
- “meaning presides in the intentional thinking during which meaning is constructed”
- Is purposeful and active (Pressley & Afflerbach, 1995)

Source for the following “Strands” diagram & 7 slides with black title headings

Betty Bunce, PhD, CCC-SLP, Matthew Gillispie, PhD, CCC-SLP, Jane Wegner, PhD, CCC-SLP

From their 2011 ASHA Convention presentation entitled “Evidence-Based Reading Comprehension Strategies”
THE MANY STRANDS THAT ARE WOVEN INTO SKILLED READING

LANGUAGE COMPREHENSION
- BACKGROUND KNOWLEDGE
  (facts, concepts, etc.)
- VOCABULARY
  (vocabulary, synonyms, etc.)
- LANGUAGE STRUCTURES
  (syntax, semantics, etc.)
- VERBAL REASONING
  (deduction, inductive, etc.)
- LITERACY KNOWLEDGE
  (print concepts, genres, etc.)

WORD RECOGNITION
- PHONOLOGICAL AWARENESS
  (rhymes, phonemes, etc.)
- DECODING
  (spelling-sound correspondences)
- SIGHT RECOGNITION
  (of familiar words)

SKILLED READING: Fluent execution and coordination of word recognition and text comprehension.

Poor Reader Subgroups
(Catts & Kamhi, 2005, 2012)

<table>
<thead>
<tr>
<th>Listening Comprehension</th>
<th>Word Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>Good</td>
<td>Good</td>
</tr>
</tbody>
</table>

- Dyslexia
- Non-Specified
- Language Learning Disabled
- Specific Comprehension Deficit
Skills That Support Comprehension

- World/background knowledge
- Topic familiarity and processing demands
  - High familiarity = lower demands
  - Low familiarity = high demands on attention, motivation
- Conceptual knowledge
- Metacognition
- Attention/Memory

Improving Reading Comprehension for kindergarten – 3rd grade

Institute of Education Sciences Practice Guide “What Works Clearinghouse” Sept. 2010
(English speaking settings, meta-analysis for 812 citations from 1989-2009: 27 met standards for effectiveness)

5 Recommendations:
1) Teach Reading Comprehension Strategies
2) Teach Identification and use of the text’s organization structure to comprehend, learn and remember content
3) Guide through focused, high-quality discussion on the meaning of text
4) Select Texts PURPOSELY to support comprehension
5) Establish an engaging and motivating context
What is a Strategy?

- A plan for gaining meaning from text
- Sequence of steps used for understanding text
- Deliberate effort by child to understand and remember by using procedure (Shanahan et al., 2010)
- Requires knowledge and self-regulation—knowing when comprehension fails and ability to implement strategy (Carlisle & Rice, 2002)
Word Recognition Strategies

• This is where an SLPs past knowledge of phonological awareness training can be used!

• Decoding Skills

• Encoding Skills

Decoding and Encoding

Slide courtesy of Rachelle Schmitz, SLP CCC-S from CCHMC

1. Develop automaticity with repeated systematic, explicit, and direct instruction.
2. Scaffolding at the word, phrase and sentence level.
3. Guided learning with key words or symbols for recall
4. Over teach using multiple senses (multi-sensory approach: see, say, do)
5. For encoding: isolate each sound in a word using a manipulative. Once the number of sounds in a word are correctly identified (e.g., 3 sounds) ask the child to write at least one letter to represent each sound.

a) If a word has four sounds, there should be at least four letters. For example, "rain" has 3 sounds so it needs at least 3 letters written. The child successfully completed the task even if they write 'ran'. Then show the child how it is written in a book while sounding it out 'r’ ‘ai’ ‘n'.
**Vocabulary**

1. Dialogic book reading (live audience participation): an organized and systematic way of interacting and talking through a story to enhance vocabulary and oral language development, and a love of books.

2. Relating unknown vocabulary to child’s experiences

3. Provide multiple opportunities to use new vocabulary (Utilize Expanding Expression Tool) EET video & Child using EET video
Vocabulary (cont.)

4. Systematically and explicitly teach morphological awareness (MA) skills.
   a) MA is a strong predictor of child’s word-level reading and spelling abilities.
   b) The ability to use morphological knowledge to determine word meanings begins in early elementary, with the most rapid growth in grades 4-8. (Carlisle, 1995 & 2000)
   c) Learning affixes (e.g., prefixes, suffixes, and base words or roots) is one way to increase the number of words a child can understand.

Story Grammar

- Predict what story is going to be about
- Listen to story
- Retelling story
  - One way is to “act out” the story (roles & context)
  - Take turns telling something that happened
  - Using pictures to support the story sequence
- Prediction of what is going to happen next...
Sleepy Hollow “walk through”

Expand World Knowledge

- Both narrative and expository books
- Videos
- Dramatic play activities
  - Context, roles, sequencing

Reading Comprehension (RC) Strategies

- Overall philosophy
  - Active and attentive
  - Strategic comprehension
  - Experiential learning

- Text type can affect supports & strategies
  - Narratives - stories
  - Expository - instructs, explains, describes, informs
Expository Text

Expository text differs greatly from narrative text in tone, style, structure, and features. First, expository texts purvey a tone of authority, since the authors possess authentic and accurate information on the subjects they write about (Fisher & Frey, 2008). Second, these texts follow a style that is distinctly different from that of narrative text. Expository text uses clear, focused language and moves from facts that are general to specific and abstract to concrete.
Another aspect of expository texts is that they utilize specific structures to present and explain information (Burke, 2000). And, it has long been known that the ability to recognize text structure enhances the student’s ability to comprehend and recall the information read (Armbruster, Anderson, & Ostertag, 1989). The five most common structures utilized in informational text are cause-effect, comparison-contrast, definition-example, problem-solution, and proposition supportor sequential listing. To help students recognize and identify these structures, teachers can acquaint them with the signal or cue words authors utilize in writing each of the structures (See below). In addition, DougBuehl (2001) has created a series of questions to help guide students in identifying each specific structure.

(See next slide of the reproducible masters for a set of graphic organizers that students and teachers may use to facilitate structure identification).
Scaffolding strategies for expository text (www.readingrockets.org)

SpeechPathology.com

Graphic organizer examples for teaching expository text strategies

SpeechPathology.com
Evidence-Based Strategies

- Activate prior/background knowledge
- Question answering/Question generating
- Visualization
- Comprehension monitoring, clarifying or fix-up
- Inferencing
- Graphic and semantic organizers
- Summarization/retelling

Reading Comprehension (RC) Strategies

- Domain general
  - Reading fluency
  - Vocabulary
  - Metacognitive (comprehension monitoring)
  - Text structure/processing

- Domain specific
  - Background knowledge/experiences
  - Vocabulary
Metacognitive Strategies

- **Rationale:** Increase attention; active participant; activate background knowledge
- **Examples:**
  - Preparatory sets (KWL, predictions)
  - Comprehension monitoring (KWL, SQ3R)
  - Paragraph restatement/summarization
- **Evidence is Mixed**
  - e.g., Gersten et. al, 2001 for review; Dymock & Nicholson, 2010; Shanahan et al, 2010

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**Stan the Hot Dog Man**

**Metacognitive: Narrative**

<table>
<thead>
<tr>
<th>Before Reading</th>
<th>After Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td><strong>Goal</strong></td>
</tr>
<tr>
<td><strong>Plan</strong></td>
<td><strong>Plan</strong></td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td><strong>Evidence</strong></td>
</tr>
<tr>
<td><strong>Current Sequence</strong></td>
<td><strong>Current Sequence</strong></td>
</tr>
</tbody>
</table>

Florida Center for Reading Research (FCRR; www.fcrr.org)
## Metacognitive: Expository

<table>
<thead>
<tr>
<th>What We Know</th>
<th>What we want to find out</th>
<th>What we learned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic Chicago Fire</td>
<td>When did that happen &amp; how did city change?</td>
<td></td>
</tr>
<tr>
<td>Home to the Cubs/Wrigley Field</td>
<td>How do people decide on Cubs vs. White sox?</td>
<td></td>
</tr>
<tr>
<td>Home to the Bears/Soldier Field</td>
<td>Last time they won the Super Bowl?</td>
<td></td>
</tr>
<tr>
<td>Called “The windy city”</td>
<td>Why?</td>
<td></td>
</tr>
<tr>
<td>downtown area is known as “The Loop.”</td>
<td>Why?</td>
<td></td>
</tr>
</tbody>
</table>

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## Text Structure: Narrative

- **Rationale:** identifying & categorizing important information
- **Components:**
  - Story grammar elements: setting, characters, problems, solutions, conclusion, etc.
  - Graphic organizers such as story mapping
- **Strong evidence**
  - e.g., Gersten et. al., 2001 for review; Dymock & Nicholson, 2010; Shanahan et al, 2010
Activating Background Knowledge

- Comprehension is result of integration of new knowledge with prior knowledge (schema theory)
- Must activate what is already known when reading
- Create this expectation to help readers
  - key in on relevant parts
  - make inferences and elaborate
  - fill in missing info
  - add to existing mental structures

Activating Background Knowledge, cont’d

Poor comprehenders relate prior knowledge that is not relevant or for older students, replace figurative language with the literal meaning, losing the author’s intended message.

We must TRAIN idiom meanings PRIOR to text reading. Idiom2    Idiom3    IdiomUSE

Research completed across grade levels (1st grade on) demonstrates success in improving comprehension when addressing the activation of background knowledge (Neuman, 2006)
Strategies for Activating Background Knowledge

Pre read or preview story

Consider key concepts

Teach relevant knowledge PRIOR to new content

Advanced Organizer

Semantic mapping

Previews

Advanced Organizer Example

BEGINNING:

WHO (Characters): ____________________________

____________________________________________

WHERE (Place) ________________________________

WHEN (Day) ___________ (Time): ___________

(Season): _______________________

SpeechPathology.com
Strategies for Activating Background Knowledge, Cont’d

Encourage children to:

• Think about own life experiences
• Make predictions based on knowledge
• Make connections of what they know and want to know

Generating and Answering Questions

• Strong evidence supporting questions (NLP, 2000)
• Very motivating for children, based on own interests in texts
• Encourages active involvement with text
Strategies for Generating and Answering Questions

- Encourage children to ask questions prior to reading:
  - What is this about?
  - What do I know about the topic?
  - What is the author’s purpose?

- Encourage WHY questions (Pressley et al., 1992)
  WHY do people in Alaska use dogsleds for transportation?

Strategies for Visualization

Students develop a mental image of what is described in the text

Use picture books with children of ALL ages because the sophisticated art can help students see how words and images connect in meaning-making references that are easier to recall.
Strategies for Visualization

1. Explain to the child that visualizing what is described in the text will help them remember what they read.

2. Pre-story task: have the child examine objects placed in front of them, and later a picture depicting a scene. Remove the objects and the picture, and ask them to VISUALIZE and describe what they saw. Mizuki video

3. Read a sentence and describe what you see to the students. Choose sections from the text and ask students to practice visualizing and discussing what they see. Mizuki video2

Monitoring, Clarifying, and Fix Up

Proficient readers don’t just plow ahead through text when it doesn’t make sense—they stop and use “fix-up” strategies to restore their understanding.

One of the most important fix-up tools is RE-READING, with teachers/parents/SLP’s demonstrating to children a variety of ways to re-read text in order to repair meaning.
Teaching “Fix Up” Strategies of Monitoring & Clarifying

1. Relate each strategy to a traffic sign (i.e. stop sign--stop reading and try to restate in your own words what is happening in the text; U-turn – reread parts of the text that do not make sense.)

2. Write different reading comprehension strategies on cards with their signs, and have students work in pairs to apply the strategies to the text they don’t understand.

Inference training

We must start with differentiating between: facts, inference, and prediction.
FACTS

Definition:
A fact is something that has really occurred or is actually the case. The usual test for a statement of fact is verifiability, that is, whether it can be demonstrated to correspond to experience.

Inference Training

• Definition:
“An assumption or conclusion that is rationally and logically made, based on the given facts or circumstances. An inference is based off of facts, so the reasoning for the conclusion is often logical.”
Inferencing

What happened to that house?
Why are the people running?
Who are these people?
Why are they wearing lifejackets?

Inferencing from text

1. Teach children how to look for key words that help them understand text, demonstrate how to draw inferences (i.e. a passage that mentions “clowns” and “acrobats” is probably taking place in a circus.

2. Identify key words in a sample passage of text and explain what students can learn about the passage from those words.
Inferencing

1) Movie Clips

I use Ice Age to show character evolution, and how that's inferred. We watch Diego, in about seven to eight short little clips throughout the film. They MUST infer to understand him and what's going on. They have no problem at all identifying the moments when his conscience is bothering him, or when he's lying, or when he feels love. I am sure that if they read some of what they saw in that film, they would completely miss it. So I'm trying to transfer that skill from one medium to another.

(i.e. clips from some of the Star Wars films, Oliver Twist, Jungle Book, and The Wizard of Oz)

2) Comics

White out the speech bubble words or captions and have the kids look at the comic to infer what is going on or what is being said.

Can add to their inferencing skills, the thought process of prediction

Prediction is determining what MAY happen next based upon the reader's previous experience.

1. Provide examples in real life situations or photos
2. Provide examples in a book using both pictures and text: 
   https://www.youtube.com/watch?v=nsLD33rczFA
The use of graphic organizers or text maps

The use of a graphic organizer, is not a strategy itself, but a means to an end: the strategy you’re trying to get the child to utilize is summary or retelling, but many children struggle with what are the important details, and the sequence of what happened: a text map or graphic organizer can help them organize their thoughts to re-tell their story.

SEE TEXT MAP handout. Video

Synthesizing, Summarizing and/or Retelling

Students briefly describe, orally or in writing, the main points of what they read.

1. Ask a student to describe the text in HIS or HER own words (incorporate visualization if need be) to a partner or parent/SLP. Visualization can include the student’s OWN drawings of key events. VIDEO

2. Prompt by asking “what comes next?” “what else did the story say?”
Gradually release responsibility to child as task progresses

Reading Fluency

1. Speed or rate: automaticity

2. Accuracy: minimal errors

3. Prosodic reading: Breaking words into meaningful chunks to allow for interpretation; expression; break the text into syntactically and semantically appropriate units.

*All three components lead to automaticity and reading comprehension (Rasinski, 2004)*

Reading fluency is a part of reading comprehension and therefore should be a part of the intervention
Teaching Automaticity & Prosody (3 steps)

1. Repeated readings
   a. Reading skills generalizes to other passages
   b. Improvement in reading the passage, decoding, reading rate, prosodic reading, and comprehension (National Reading panel, 2000; Kuhn & Stahl, 2000)
   c. Not meant for children reading below a first grade reading level
   d. Student rereads a passage until meeting criteria
   e. Practice strategy to enhance decoding skills
   f. Passage should be read with approximately 90% word accuracy in 1 to 2 minutes.
   g. 3-5 times a week for 5-10 minutes

2. Model Fluent Reading
   a. Provide opportunities to hear the way a story should sound (what words or punctuation allow the reader to know what words to stress, when to use expression, when to get loud, fast, excited, or pause)
   b. Read to children no matter their age

3. Assisted reading
   a. Paired reading
   b. Coral reading: Read aloud as a group
   c. Read along with prerecorded readings
Non-speech acoustical must be taught in association with grammatical markers!

Increase comprehension of conversation and text by using books on CD, read-aloud websites or Audible App. Point out the correspondence between grammatical markers to the speaker’s inflection and pauses:
- commas=breath,
- period= pause,
- questions=raise pitch,
- exclamation=intensity/stress

Metalinguistic Overlays

- Non-speech acoustical cues that can change meaning of a message presented auditorily in conversation, or through sentences being read:
  - Prosody & inflectional cues can indicate questions vs. exclamation points vs. periods at the end of a sentence, etc. APPLYING these cues by the reader provides greater fluency to the text being read, and often greater comprehension.
  - Rhythm can completely change word meaning: REcord (object) vs. reCORD (verb)
  - Stress can impact KEY word understanding
  - intonation can indicate sincerity or sarcasm
  - Segmenting can change word meaning: They saw the CARGO on the boat vs. They saw the car go on the boat!
Auditory Training for Metalinguistic cues

Detection of SILENCE/PAUSE

Discrimination of pitch patterns, intensity/temporal cues associated with sentences heard or text read

Vigilance (noting when stimuli change)

Temporal Gap Detection

Ask the child to detect brief gaps inserted within brief bursts of white noise which are progressively shortened approaching criterion of 1 - 5 msec of gap detection.

Use Apps of electronic keyboards or background noise generators for stimulus presentation video
SOUND DISCRIMINATION
(whether 2 stimuli are same/different)

Frequency Differences
Use a piano keyboard App on your iPad or your Phone

DISCRIMINATION (cont.)

Tone Glide Discrimination
NORM = identification of durations of only 1 - 2 msecs
Determine the upward or downward direction of a fundamental frequency sweep for tone bursts of a few msecs.

Initially, the clinician can simply whistle sweeps, but as accuracy improves you can use Away We Go (Scientific Learning Corp. CD) or find Apps with tone glides.
DISCRIMINATION (continued)

Temporal tone order discrimination

tones with durations of approx. 25 msec, presented with a virtual keyboard & listener task is to discriminate tone order
e.g. High - low - low
child can use colored poker chips to represent the High vs. low tones, which removes verbal components from the task

Training of pitch pattern application

Pitch rising = question mark or exclamation mark

Pitch lowering = period/statement
Pitch Pattern Training

Book read aloud: child listening for pause in the text being read, and indicating by a hand/finger raise when pause is recognized WHILE text is seen.

VIDEO

Continue auditory accuracy of pause identification: step 2

NOW, copy several pages from the book being read aloud, but “white-out” all grammatical markers.

Have the child listen for ONE metalinguistic overlay at a time (e.g. pause to indicate sentence end, while looking for a capitol letter to follow: CHILD PLACES PERIOD ON XEROXED PAGE WITH COLORED PEN/MARKER. VIDEO

Lastly, compare the child’s grammatical markings to those of the actual text. VIDEO
Video example of reading application of pitch changes

Strategies Summary (not comprehensive list)
Slide courtesy of Rachelle Schmitz, SLP CCC-S from CCHMC

<table>
<thead>
<tr>
<th>Area of Challenge</th>
<th>Strategy</th>
</tr>
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</table>
| Phonological awareness                         | • Structured, multisensory, direct, and explicit instructional approach  
| Phonemic decoding                              | • Engage more than one sensory modality including the tactile, visual, and auditory senses  
| Orthographic knowledge                         | • Focus on teaching/idemntifying affixes such as prefixes, suffixes, and roots (base words)                                                                                                           |
| Orthographic skills                            | • Write high frequency words on individual cards, gather in a pile, set a stop watch and see how fast child can name the words. Write the last word read. Count the number of cards read in a certain time or writes down the time. Make a grid. Gather the pile together and try to beat the previous time or number read.  
|                                                | • Play matching games with the high frequency words; name them together as you turn them over  
|                                                | • Make trials successful. Limit incorrect responses                                                                                                                                             |
| Reading Fluency                                | • Read books independently with at least 80% accuracy  
|                                                | • Modeled reading: providing opportunities to hear fluent reading  
|                                                | • Repeated readings  
| Reading Comprehension                          | • Ask open-ended questions, inferences, and prediction  
|                                                | • Relate unknown vocabulary to known background knowledge or experiences  
|                                                | • Use of visualization and graphic organizers  
|                                                | • Information presented orally  
| Working Memory                                 | • Verbal rehearsal  
|                                                | • Play the alphabet game  
|                                                | • State a word that starts with the last sound in player A’s word.  
| Discrepancy between timed and untimed assessments | • Extra time  
| Poor phonological Awareness, Decoding, and/or Orthographic Knowledge BUT average receptive vocabulary | • Listen to books on child’s age/grade/cognitive level.  
|                                                | • Have reading material in front of child to follow along  

Resources

Resources

- Zimmerman, S., Keene, E., (2007). Mosaid of Thought