

Promoting Reading Development in Students with Dyslexia, Other Reading Learning Disabilities, and Typically Developing Readers

Dr. Edward M. Petrosky, ABPP
Clinical Neuropsychologist
Diplomate in School Psychology
(917) 520 – 4444
www.toolsforstudents.info
www.wppsi4.net
With offices in Forest Hills, Queens
and Commack, Suffolk County

A Word on the Presenter

- ◆ Clinical Neuropsychologist & Diplomate in School Psychology
- ◆ Specializations include:
 - Dyslexia / Learning Disability Testing
 - ADHD Testing
 - Testing for Autism spectrum disorders
 - Neuropsychological Evaluations
 - Evaluations of Behavioral and Emotional Problems
 - Workshops to parents, teachers, & students on academic and emotional growth
- ◆ Evaluations help answer questions such as:
 - What is the problem? What is causing it? What can be done to help?
- ◆ Facebook page: "Dr. Edward M. Petrosky"
- ◆ www.toolsforstudents.info

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

For More Info About:

- ◆ Evaluations visit:
www.toolsforstudents.info
- ◆ Teacher and School Administrator in-service training visit:
www.wppsi4.net

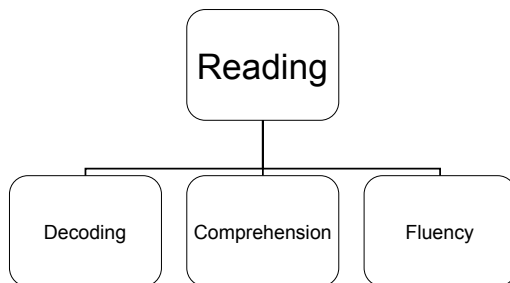
(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Facebook Fan Page

- For handouts and information on a wide range of psychology and education topics become a “fan” of my Facebook page: “Dr. Edward M. Petrosky.”

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Components of Reading



(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

What cognitive skills does reading decoding require?

Cognitive Function

Attention

Attention

- ◆ Ability to register or notice information

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Sustained Attention

- ◆ The ability to *hold* attention in one spot.
- ◆ To *maintain* focus over a prolonged period of time.
- ◆ Executive functioning = control

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Errors Suggestive of Attention Lapses

- ◆ Whole word substitution error: decoding a word based on letters it has in common with the target word.
 - broan = brawn
 - frozen = frothy
 - equal = square
- ◆ Omissions

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Cognitive Function

Phonological Processing

Phonological Processing

- ◆ The ability to identify, accurately interpret, and mentally manipulate the sounds of language.
- ◆ How well is the student "hearing" the sounds of the language

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Phonologically Based Errors:

Not "hearing" the sounds of the word correctly

- ◆ Phonemic confusion

- caft = ceft
- budge = bedge

- ◆ Not accurately representing all of the sounds (phonemes) of words

- Adds sounds
 - sentence = senstence
 - usually = un-sully

- ◆ Omits Sounds

- decide = dee-sy

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Phonologically Based Errors:

Not "hearing" the sounds of the word correctly

- ◆ Sound blending: putting the sounds together into the whole word

- shop = sa-hop
- depend = de-pen-ned
- custodian = cust – ta – dane

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Cognitive Function

Rapid Automatized Naming

Rapid Automatized Naming (RAN)

- Ability to quickly label objects
- The speed we can remember what something is called.
- RAN allows us to automatically remembering what a word is
 - c-a-t = cat
- Allows us to avoid having to sound out each word
- Enables fluency

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Slow RAN

- Slow and labored reading
- Difficulty finding words (e.g. "it's on the tip of my tongue").

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Cognitive Function

Visual Processing

Clarification

Although poor phonological processing is considered the strongest predictor of reading difficulty, the research still indicates that poor visual processing can cause reading problems (See for e.g. Badian, 2005). Moreover, in clinical practice I see children who have good phonological processing yet whose decoding is marred by excessive reversals and transpositions. So these children do exist!

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Spatial Orientation

- ◆ An aspect of visual perception
- ◆ Accurately perceiving the *direction* of individual lines and symbols as well as the *order* or sequence of a list of symbols, such as letters.

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Same or Different Shape?



(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Same or Different?

b d p q

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Same shape but different orientation makes them different letters

b d p q

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Spatial Orientation Difficulty

- Letter reversals (e.g. "dog" read as "bog")
- Transpositions (e.g. "cloud" read as "could")

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Difficulty Understanding Place Value



(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Difficulty with words that have to do with positioning

- ◆ Spatially related words (e.g. up, down, above, below, higher, lower)
- ◆ Temporally (time) based words (e.g. before, after, previously, subsequently, etc.)
- ◆ Words related to serial position (first, second, last, etc.)
- ◆ Reciprocal pairs of words / phrase (e.g. thank you / you're welcome)

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

What Cognitive Skills Does Comprehension Require

Some Skills Necessary for Reading Comprehension

- ◆ Activation of background knowledge
- ◆ Attention
- ◆ Decoding and Fluency
- ◆ Vocabulary
- ◆ Verbal concept formation / inferencing
- ◆ Saliency determination
- ◆ Organization

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Interventions

Attention

- ◆ Make reading a hunt for specific information
 - Students generate questions and then read to answer those questions
- ◆ Student - created learning objectives

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Self-Monitoring

- Have the student read aloud while tape recording herself. Then she should listen to what she read while looking at a photocopy of the passage. As she listens, she should record errors (e.g. circling words omitted or mispronounced, writing in words added, etc.). This exercise can be simplified as necessary (e.g. "You skipped 3 words. See if you can find all 3").

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Phonological Awareness

- (See also discussion below regarding learning interventions for dyslexia).
- Lay out pairs of words with letter magnets or blocks. Use pairs of words which differ in only by the sounds "a," "e," and / or "o"
 E.g. lag leg
 lack lock
 left loft
- Have student practice saying each word, exaggerating enunciation of the differing sound.

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Phonological Awareness

- Use letter blocks or magnets to demonstrate how new words can be created by substituting one letter or letter combination for another
 - e.g. word "band" into "hand"
- Make a game of it
 - How many words can be made by adding a letter in front of "and"?

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Reading Fluency / Sight Word Recognition

- Have the student read sentences in which sight words from her text are used in sentences in which the context provides strong clues as to what the word is (e.g. "Inside the cave the campers found the big, black bear.).
- Repeated reading: read the same non-fiction selections 3 separate times.
- Provide the student with a list of sight words for him to find in text.
- Flash irregular sight words briefly and have student identify them without using phonetic decoding strategies.
- Guided reading with support

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Organization, Concept Formation, Inferences

- Identifying the topic: What are we talking about here? What's the conceptual thread that ties in the information together?
- "What is this an example of?"
- Sally was an attorney, whereas Teresa was a medical doctor. Sam, had tried accounting, but wound up being more interested in marketing.
- Jobs, occupations, careers, etc. – that's the conceptual thread.
- Scaffolding questions:
 - How are they the same? How are they alike?
 - An attorney and doctor are both...

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Organization, Concept Formation, Inferences

- Provide explicit instruction in types of text structure
 - E.g. Narrative text: There's a character, a problem, and a resolution.
- Repeat the topic frequently

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Organization, Concept Formation, Inferences

- ◆ Provide template to help organize information as student hears it
- ◆ Create a mental framework
- ◆ Tell them what they should be listening for
 - Advanced organizers
 - "There will be 3 steps to this next task"
 - "You are going to hear about a person and 2 important things she did"
- ◆ Categorize information - point out commonality that ties information together

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Organization, Concept Formation, Inferences

- ◆ Have students create their own titles for stories
 - Good title embodies the essential concepts of the story.
 - Poor titles
 - focus on a detail and miss the "big picture"
 - highlight an irrelevant point

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Organization, Concept Formation, Inferences

- Questions to prompt good titles
 - What did you find interesting about this story?
 - What did you find surprising about the story?
 - How is the protagonist of the story different from other people?
 - What is special or unique about him or her?

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Organization, Concept Formation, Inferences

- ◆ Instruction on what explicit and an implicit information is.
- ◆ Ask questions that draw attention to key facts. Then ask questions to help make connections.
- ◆ Make predictions
- ◆ Summarization

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Saliency Determination

- ◆ Have student read a brief passage.
- ◆ Then have the student read two additional versions of the same passage: one with minor details omitted and the other with major details omitted.
- ◆ Compare each of these versions to the original.

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Saliency Determination

- ◆ Draw the student's attention to how the differences between the version with major details omitted and the original passage are much greater and more significant than the differences between the version with minor details omitted and the original passage.

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Saliency Determination

- ◆ Draw attention to such things as: how much more comprehension is changed when major versus minor details are omitted, how the main idea or topic did not change when minor details were omitted but did change when major details were omitted, what the reader still knows when minor details are omitted that the student did not know when major details were omitted, etc.

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Metacognitive Skills

- ◆ Instruction on the concept that different questions seek different types of information
- ◆ The first task when responding to a reading comprehension question is to first identify what type of information he is being asked to produce.
- ◆ The goal: "The question is asking where the people immigrated to. That's a where question. My answer needs to be a place."

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Metacognitive Skills

- ◆ Exercises in which given a passage and a checklist of different types of information (e.g. an opinion, the "where" of a story that is explicitly stated, a "when" of the story that is implied, etc.) and student reads the passage and find where each type of information is.

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Identifying Cause and Effect

- ◆ Ask questions that draw attention to key events and then ask how that came to be
 - e.g. The boy cleaned up his room ahead of schedule. How did that happen?).
- ◆ Once the student has correctly answered such questions they can be written out to reinforce the concept (e.g. Event A → Consequence B).
- ◆ Alternatively, one could do the reverse - call attention to important events and ask what consequences the event lead to (e.g. "The boy fell asleep before he could study. What did that lead to?).

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Learning Disability

- ◆ **Learning Disability:** A disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, which manifests itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations.

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Dyslexia

- ◆ **Language based learning disability that involves difficulty acquiring and using the symbols of language**
 - Phonological Processing
 - Retrieval
 - Visual Processing
 - Others
- ◆ Primarily affects decoding and spelling
- ◆ Also interferes with reading comprehension
- ◆ Can interfere with math

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Who is more likely to have dyslexia, boys or girls?

Boys and girls are both affected equally

Who is more likely to be diagnosed with dyslexia?

Boys are 4x more likely than girls to be identified by their school as having a reading problem.

Facts about Reading Disabilities

- **Most common type**
 - 80% of individuals who have a learning disability have a reading learning disability
- **Genetics:**
 - **Risk:**
 - Children of people with dyslexia: 23 – 65%
 - Siblings: 40%
 - Parents: 27 – 49%
 - Chromosomes 2, 6, & 15 implicated

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Interventions for Dyslexia

Reading

- Evidence based multi-sensory reading instruction one on one or in small group
 - Examples:
 - Wilson Method
 - Preventing Academic Failure (PAF)
 - Barton Reading and Spelling System
 - Lindamood-Bell
- Speech and Language therapy
 - E.g. To improve phonological processing

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Examples of Multi-Sensory Instruction

- Alphabet
 - Name letters in sequence while touching them (Tactile, Auditory, Visual, Kinesthetic)
- Words
 - Say letters in the word while tracing them (Auditory, Kinesthetic, Tactile, Visual)
 - Can trace letters in sand or cut letters out of sandpaper to amplify tactile component)

From: Birsh, J. R. (2006). What is multisensory language? *Perspectives*, 32 (4), pp. 15 – 20.

(c) Dr. Edward M. Petrosky, 2013. All Rights Reserved

Thank You Very Much!

Any Questions?

Dr. Edward M. Petrosky
Licensed Psychologist
(917) 520 – 4444
www.toolsforstudents.info

(c) Dr. Edward M. Petrosky, 2013. All
Rights Reserved
