

Executive Functioning in the Classroom: What Every Teacher Should Know

Dr. Edward M. Petrosky, ABPP
Clinical Neuropsychologist
Diplomate in School Psychology
(917) 520 – 4444
www.toolsforstudents.info
www.wppsi4.net

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

3

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

4

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

5

Disorders Characterized by Poor Executive Functioning

- ADHD
- Pervasive Developmental Disorder
- Learning Disabilities
- Others

(c) Dr. Edward M. Petrosky, 2013

6

Executive Functioning

- A collection of skills used to organize and direct behavior towards purposeful goals.
- Helps us control and regulate our behavior.
- Self-monitor and guide our performance

(c) Dr. Edward M. Petrosky, 2013

7

Executive Functioning =

- Control
- Organize
- Plan

(c) Dr. Edward M. Petrosky, 2013

8

Frontal Lobes

- The primary area responsible for executive functioning
- Are not fully formed (i.e. myelinated) until 18 – 30 years.
- One of the most sensitive areas to damage (e.g. anoxia)

(c) Dr. Edward M. Petrosky, 2013

9

Executive Functioning Skills

All learning starts with...
...attention.

(c) Dr. Edward M. Petrosky, 2013

11

Attention

- Ability to register or notice information

(c) Dr. Edward M. Petrosky, 2013

12

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

13

How Poor Sustained Attention Shows up in the Classroom

- ◆ Poor attention
- ◆ Distractible
- ◆ Zones out
- ◆ Inconsistency
 - The student knows what was covered when s/he was paying attention and does not know what was covered when s/he was not paying attention.

(c) Dr. Edward M. Petrosky, 2013

14

ADHD

- Difficulty with sustained attention
 - Paying attention to *certain* information while ignoring others
 - E.g. paying attention to the teacher and ignoring the students behind you talking.
 - *Holding* attention there.

(c) Dr. Edward M. Petrosky, 2013

15

Strategies

What can you do...

...to be the most *noticeable* thing in the room?

(c) Dr. Edward M. Petrosky, 2013

17

Attention and Challenge

- The increased challenge of more difficult or complex tasks can command attention.

(c) Dr. Edward M. Petrosky, 2013

18

Questions to make them stop and think

- Evaluating questions
 - is something fair or unfair, right or wrong, etc.
- Analyzing questions
 - how one thing is different from something else.
- What else? What's a question you've asked that makes students stop and think?

(c) Dr. Edward M. Petrosky, 2013

19

Have Students Be Active Information Processors

- Have students define their own learning objectives
- SQ3R Method
 - Survey
 - Question
 - Read
 - Review
 - Recite
- How else?

(c) Dr. Edward M. Petrosky, 2013

20

Strategies

- Frequent breaks
- Making sure you have eye contact before continuing
- Ask the student questions; have the student say back the directions or concept in his or her own words before going on
- Repeating information
- Rotate subjects
- Inject novelty into instruction

(c) Dr. Edward M. Petrosky, 2013

21

ADHD and Social Difficulties

- Publically praise the child for his or her strengths to call other children's attention to the child's strengths.
- Classroom rules against excluding other children.

(c) Dr. Edward M. Petrosky, 2013

22

Executive Functioning Skills

- ✓ Attention

(c) Dr. Edward M. Petrosky, 2013

23

Organization

- The more we organize information as it is being presented to us, the more we can:
 - Pay attention
 - Register the information
 - File it away into long term memory
 - Retrieve it later

(c) Dr. Edward M. Petrosky, 2013

24

Strategies

- Repeat the topic frequently
- 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

25

Strategies

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

(c) Dr. Edward M. Petrosky, 2013

26

Executive Functioning Skills

- ✓ Attention
- ✓ Organization

(c) Dr. Edward M. Petrosky, 2013

27

Planning

(c) Dr. Edward M. Petrosky, 2013

28

Planning

- The ability to think ahead and formulate a solution to a problem, as oppose to diving in and working on it haphazardly

(c) Dr. Edward M. Petrosky, 2013

29

How this shows up in the classroom

- Run out
 - time
 - miss deadlines
 - don't finish exams
 - money – spend all of their allowance during the first minute of the school fair
 - room on the paper, things are squished
- Complete tasks inefficiently with a lot of unnecessary mistakes

(c) Dr. Edward M. Petrosky, 2013

30

How many of you will read the handout?

(c) Dr. Edward M. Petrosky, 2013

31

Key Finding

- Don't agree to do anything until you identify the specific date and time you will do it.
- We found that people who do this are 41% more productive than those who don't.
- Implication for students is find a date and time to put everything the student needs to do, including "intangibles" (e.g. decide the topic of the book report).

(c) Dr. Edward M. Petrosky, 2013

32

Strategies

- Break down long term projects into small steps. If a child is having difficulty, then that probably means that the steps need to be broken down further.
- Schedule each step.
- Help students better estimate how much time things take by having them estimate how long it will take, time it, and then compare.

(c) Dr. Edward M. Petrosky, 2013

33

Executive Functioning Skills

- ✓ Attention
- ✓ Organization
- ✓ Planning

(c) Dr. Edward M. Petrosky, 2013

34

Executive Functioning & Reading Comprehension

(c) Dr. Edward M. Petrosky, 2013

35

Reading comprehension involves the ability to...

- Sift through an ongoing stream of data and identify what is relevant and what the connection is.
- Not only connect the dots, but know which dots need to be connected in the first place

(c) Dr. Edward M. Petrosky, 2013

36

Reading Comprehension

- Saliency Determination: The ability to identify what is relevant.
- Inferencing: The ability to identify what is implied, but not directly stated (i.e. "putting two and two together").

(c) Dr. Edward M. Petrosky, 2013

37

Sally noticed the ominous gray clouds hanging over her as she walked down the street. She approached the corner and a northern wind sent a chill down her neck. Sally finally arrived at her destination, 121 Elm Street, just when the faint rumble of distant thunder reached her ears.

(c) Dr. Edward M. Petrosky, 2013

38

Is something good or bad going to happen?

Connected the relevant information

Sally noticed the ominous gray clouds hanging over her as she walked down the street. She approached the corner and a northern wind sent a chill down her neck. Sally finally arrived at her destination, 121 Elm Street, just when the faint rumble of distant thunder reached her ears.

ominous gray clouds + chill + thunder = bad

(c) Dr. Edward M. Petrosky, 2013

40

How Deficits in Inferencing Show up in the Classroom

- **Concrete**
- **Literal**
- **Difficulty understanding what s/he cannot see, hear, and touch**
- **Difficulty organizing information**

(c) Dr. Edward M. Petrosky, 2013

41

Executive Functioning & PDD

- Children with PDD have difficulty thinking abstractly and tend to be literal, concrete thinkers.

(c) Dr. Edward M. Petrosky, 2013

42

Strategies

(c) Dr. Edward M. Petrosky, 2013

43

Saliency Determination

- Read end of chapter summaries and questions first
 - Indicates what's salient and provides a conceptual framework to assimilate the information

(c) Dr. Edward M. Petrosky, 2013

44

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

45

Saliency Determination

◆ Draw attention to:

- 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

46

Inferencing

- Ask how they are alike
 - Scaffold the process as necessary.
 - Define the key details and compare definitions
 - E.g. "You said that gray clouds and thunder both make you feel bad. So, this passage creates a bad feeling."
- Sally noticed the ominous gray clouds hanging over her as she walked down the street. She approached the corner and a northern wind sent a chill down her neck. Sally finally arrived at her destination, 121 Elm Street, just when the faint rumble of distant thunder reached her ears.

(c) Dr. Edward M. Petrosky, 2013

47

Strategies

- ◆ Identifying the topic: "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.

(c) Dr. Edward M. Petrosky, 2013

48

Strategies

- ◆ Identifying the topic: "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

49

Executive Functioning Skills

- ✓ Attention
- ✓ Organization
- ✓ Planning
- ✓ Saliency Determination
- ✓ Inferencing

(c) Dr. Edward M. Petrosky, 2013

50

Cognitive Sets

- Your understanding of what you're supposed to do

(c) Dr. Edward M. Petrosky, 2013

51

Difficulty establishing cognitive sets

- Difficulty catching on to what one is supposed to do

(c) Dr. Edward M. Petrosky, 2013

52

How this shows up in the classroom

- Doesn't know how to begin so just sits and stares
- Shows understanding of the material in structured tasks (e.g. answering specific questions), but struggles in unstructured tasks when not given much direction in terms of what to do (e.g. "Research this topic.")

(c) Dr. Edward M. Petrosky, 2013

53

Strategies

(c) Dr. Edward M. Petrosky, 2013

54

Strategies

- Verbal mediation is “talking to ourselves” in our own mind and can help a person stay on track or avoid losing cognitive sets.
 - Demonstrate to “Johnny” the task to be completed while stating out loud what one is doing as one is doing it
 - Have “Johnny” complete the task, stating out loud what he is doing as he is doing it
 - Have “Johnny” complete the task while saying to himself what he is doing while he is doing it
 - Have “Johnny” complete the task while whispering what he is doing while he is doing it
 - Have “Johnny” complete the task while sub-vocalizing (i.e. saying in his head) what he is doing while he is doing it.

(c) Dr. Edward M. Petrosky, 2013

55

Strategies

- Provide explicit instruction
- Don't assume that what seems “obvious” is obvious to the student.
- Explain the “why” behind the assignment.
- Check to make they understand and don't take for granted that they do.
 - Have them repeat back their understanding
 - Have them complete a couple of practice items and check their work for understanding
- Number the steps and put them on an index card in order for the student to keep the steps “top of mind.”

(c) Dr. Edward M. Petrosky, 2013

56

Executive Functioning Skills

- ✓ Attention
- ✓ Organization
- ✓ Planning
- ✓ Saliency Determination
- ✓ Inferencing
- ✓ Establishing Cognitive Sets

(c) Dr. Edward M. Petrosky, 2013

57

Shifting Cognitive Sets / Cognitive Flexibility

- Stop an old behavior and start a new behavior.
- Ability to mentally “switch gears”
- Lack of cognitive flexibility is cognitive rigidity
 - Causes perseveration: keep repeating the same behavior despite the fact that the task requirements have changed

(c) Dr. Edward M. Petrosky, 2013

58

Executive Functioning & PDD

- Cognitive rigidity / perseveration is one of the hallmarks of PDD
- Ritualistic behavior: repeating the same behaviors over and over
- Difficulty with change and transition

(c) Dr. Edward M. Petrosky, 2013

59

How Else A Lack of Cognitive Flexibility Shows up in the Classroom

- Reading strategy: Find the verbiage in the text that corresponds to the question and if you can't find it say I don't know.
- Child keeps repeating answers from previous units / topics. Having difficulty mentally wiping his/her mind clean to move on.
 - E.g. You talked about how whales are warm blooded and now your talking about reptiles and ask for a defining feature and the child says warm blooded.

(c) Dr. Edward M. Petrosky, 2013

60

Essay Writing

I like basketball because it is fun.
 I like basketball because it is good exercise.
 I like basketball because it is time with friends.
 I like to use the same sentence starters for every sentence.

(c) Dr. Edward M. Petrosky, 2013

61

Changing Problems

$\begin{array}{r} 3 \\ +4 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array}$	$\begin{array}{r} 7 \\ +4 \\ \hline 11 \end{array}$
$\begin{array}{r} 7 \\ -3 \\ \hline 10 \end{array}$	$\begin{array}{r} 8 \\ -1 \\ \hline 9 \end{array}$	$\begin{array}{r} 12 \\ -9 \\ \hline 21 \end{array}$

(c) Dr. Edward M. Petrosky, 2013

62

Speech

- May repeat themselves or give basically the same answer to different questions

(c) Dr. Edward M. Petrosky, 2013

63

Transition to New Topics

- May have difficulty switching to a new topic or new subject

(c) Dr. Edward M. Petrosky, 2013

64

Strategies

(c) Dr. Edward M. Petrosky, 2013

65

Make different pieces of information as distinctive as possible.

(c) Dr. Edward M. Petrosky, 2013

66

Vocabulary

- **Brazen:** contemptuous boldness
- **Brave:** courageous boldness

(c) Dr. Edward M. Petrosky, 2013

67

Vocabulary

Bold

With contempt = **Brazen**

With courage = **Brave**

(c) Dr. Edward M. Petrosky, 2013

68

Writers

Maya Angelou

- African-American
- Born in USA
- Poet

Gwendolyn Brooks

- African-American
- Born in USA
- Poet

(c) Dr. Edward M. Petrosky, 2013

69

Female African-American Poets

Maya Angelou

- Born in St. Louis
- Influenced by traumatic childhood
- "I Know Why the Caged Bird Sings"

Gwendolyn Brooks

- Born in Kansas
- Influenced by encouraging parents
- "A Street in Bronzeville"

(c) Dr. Edward M. Petrosky, 2013

70

Executive Functioning Skills

- ✓ Attention
- ✓ Organization
- ✓ Planning
- ✓ Saliency Determination
- ✓ Inferencing
- ✓ Establishing Cognitive Sets
- ✓ Shifting Cognitive Sets
- ✓ Many Others

(c) Dr. Edward M. Petrosky, 2013

71

Thank You Very Much!

Any Questions?

Dr. Edward M. Petrosky, ABPP
Clinical Neuropsychologist
Diplomate in School Psychology

(718) 357 – 0444

(917) 520 – 4444

www.toolsforstudents.info

www.wppsi4.net

(c) Dr. Edward M. Petrosky, 2013

72