NYASP
NY Association of School Psychologists

How to Keep Executive Function Functioning When Everything is Whacked!

Strategies for Supporting School Psychologists, Teachers, Parents and Students

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Routines & Procedures

- Mindful Moment
- Mute
- Brain Breaks
- Q and A ?

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Settle Your Glitter!!

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Our Backgrounds and Intentions

Secondary & Elementary Classroom Teacher

Special Education

Kathleen's Intention:
To open the heart, nourish the mind, and inspire the spirits of learners and teachers.

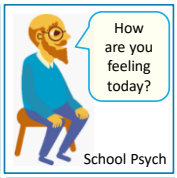
Talent Development

Multicultural Learners

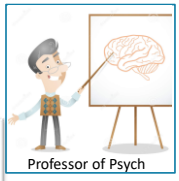
Juvenile Delinquents

Teacher of Teachers
Teacher Researcher

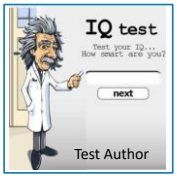
Musician



School Psych



Professor of Psych



Test Author

Jack's Intention:
To help psychologists and educators know their students' cognitive and emotional strengths and needs to help them succeed in school and life.

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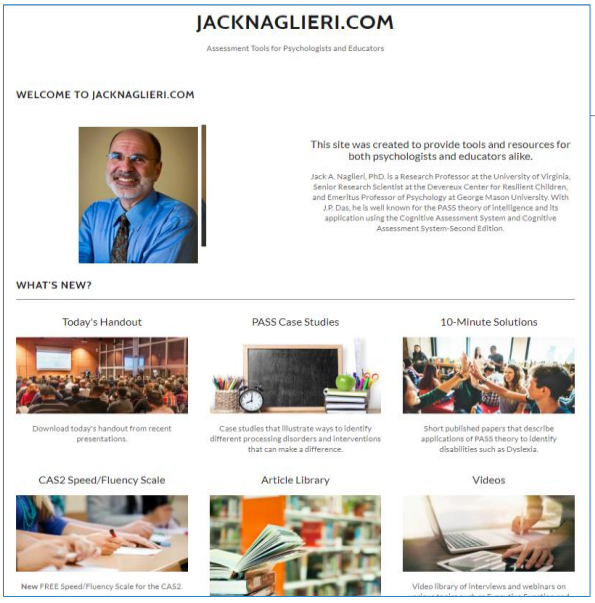

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What's Our Point and Why are We Making It

- Our world today is dramatically different today than it was just a few months ago.
- This means that we have to **re-think how we do what we do, try new solutions, determine if they work, modify them if they don't work, improve them over time, ensure what we get is what we wanted all the while controlling our own thoughts and emotions. This is the DEFINITION of Executive Function!**
- **THE GOOD NEWS: We can leverage our understanding of brain function, especially the concept of Executive Function (EF) to help teachers, students and parents cope with these extraordinary times.**

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DAY 1:

Keeping Executive Function Functioning

- EF Defined and the EF Learning Curve (FFT)
- Thinking vs. Knowing
- Planning Facilitation and EF
- Metacognition: Asking vs. Telling
- Takeaway Tips

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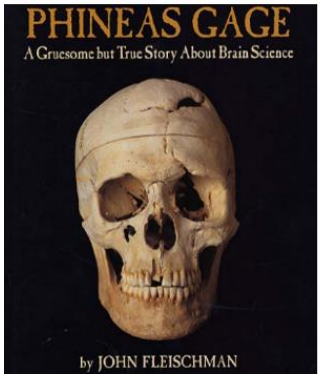
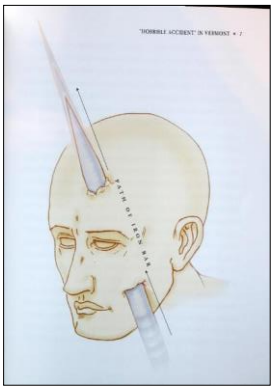
The Curious Story of Phineas Gage



The story of Phineas Gage had a profound impact on our understanding of the Frontal Lobes



Fleishman (2002)

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Before . . . & . . . After

Before the accident 'he possessed a well-balanced mind, was seen as a shrewd, smart businessman, very energetic and persistent in executing all his plans of operation' (Fleischman, p. 59)

After the accident, his ability to direct others was gone, he had considerable trouble with:

- Thinking
- Behaviors
- Work
- Social-emotional

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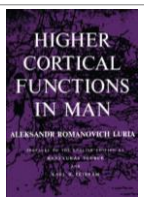
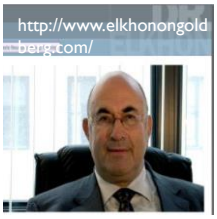
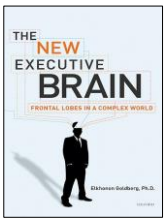
Executive Function

- In 1966 Luria first wrote and defined the concept of Executive Function (EF) and described the frontal lobes as "the organ of civilization"
- Luria's student, Nick Goldberg states that the frontal lobes are about 'making decisions, leadership, motivation, drive, vision, self-awareness, and awareness of others, success, creativity, sex differences, social maturity…'







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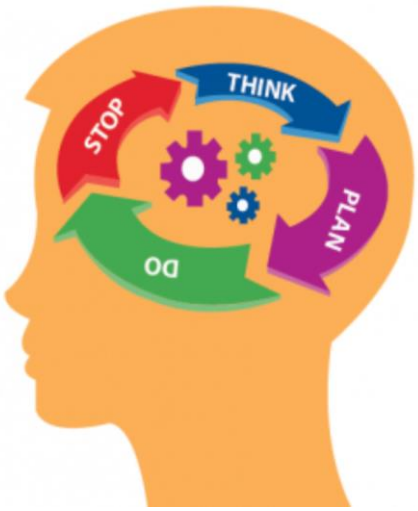
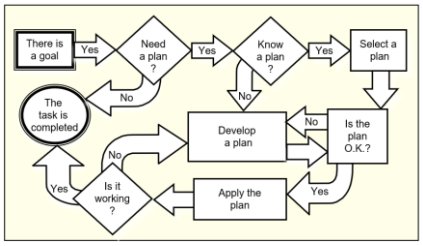


Executive Function Defined…

Making decisions about how **you do what** ***you*** **decide to do** which demands…Especially in NOVEL situations as we have NOW!

- **Initiation**
- **Planning**
- **Organizing**
- **Attending**
- **Memory**
- **Flexibility**
- **Self-monitoring**
- **Emotion regulation**
- **Inhibitory control**



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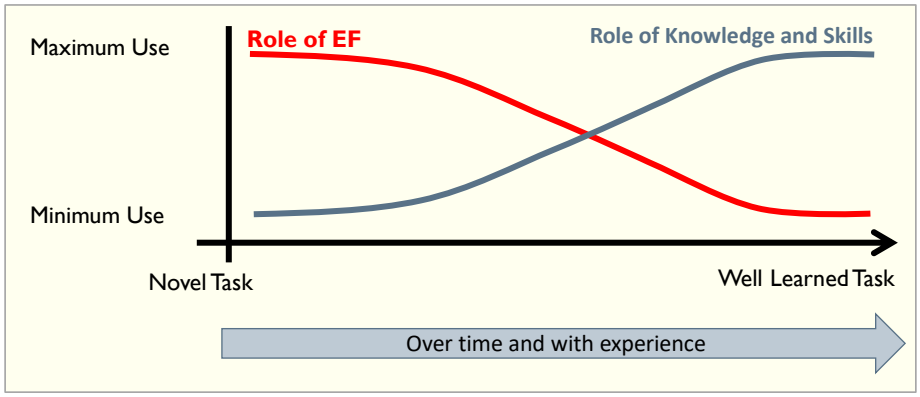
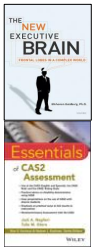
EF's Learning Curves (Goldberg, 2009; Naglieri & Otero, 2017)





- EF plays a major role in learning anything new (Goldberg, 2009, p. 90) but after the task has been well learned it becomes a skill and execution requires less EF (Naglieri & Otero, 2017, p. 117)

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EF's Learning Curves
(Goldberg, 2009; Naglieri & Otero, 2017)

- Because MAKING DECISIONS about how to do what you decide to do is particularly demanded in novel situations, we need to fully engage our frontal lobes (EF) to be successful in our world today.

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Brené Brown, FFT's

"It's all about FFTs (effing first times) and how hard it is to be new at things – from small things to global pandemics…Yet, showing up and pushing ourselves past the awkward, learner stage is how we get braver."

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FFT'S: Hang in there through the Learning Curve

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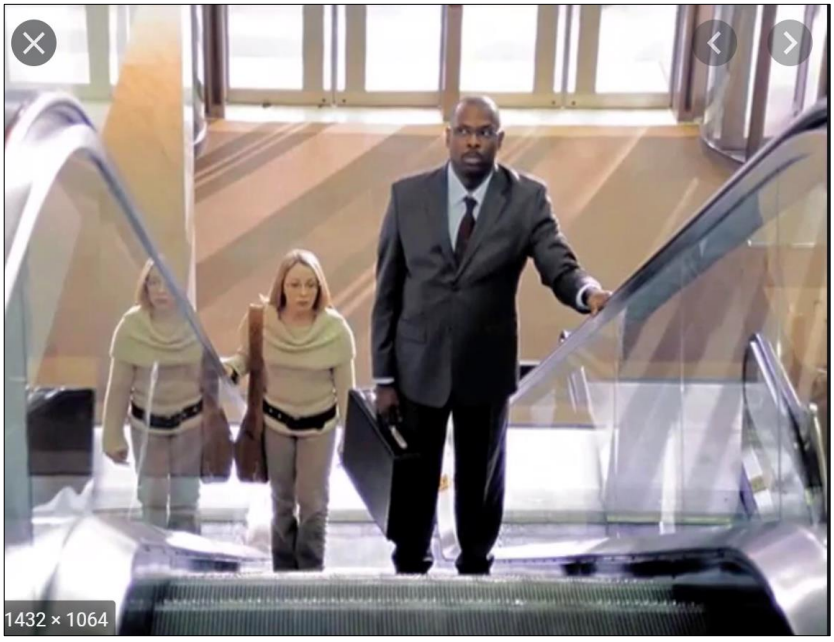
Why kids are stuck on the escalator?

Perhaps our educational and parenting approach has focused more on "enabling" vs. "empowering"



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DREAM WORK GROW

STEP BY STEP

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Students Can Do MORE Than We Think…

- When children are constantly regulated by adults, they may appear to be self-regulated, but they are actually "teacher regulated."
- If our goal is to…

EMPOWER

NOT

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Don't Become Their Pre-Frontal Cortex!

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Self Regulation Defined

- Self Regulation is a deep, internal mechanism that enables children to engage in mindful, intentional and thoughtful behaviors.
  - Elena Bodrvoa and Deborah J. Leong
- ***Self-Regulation is a Skill that is Taught, it does not emerge naturally.***

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Self Regulation Has Two Sides

- The ability to control one's impulses and **STOP** doing something, if needed – for example, not blurt out an answer when another child is asked.

- The capacity to **DO** something (even if one doesn't want to) because it's needed, such as raising your hand or waiting for your turn.

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Intentional & Transparent

Want Students to OWN their Learning?

BIG IDEA

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Intentional and Transparent

- Intentional: ***YOU*** Know why you're doing what you're doing.

- Transparent - ***THEY*** know why you're doing what you're doing.

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Brain Rule #4 – John Medina

"We need to repeat to remember"

Talking about an event immediately after is has occurred **enhances memory** for that event

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Why Intentional and Transparent?

- The human brain responds to knowing ***WHY***.
- Teach ***WITH*** your students, not ***at*** them.
- Teaching kids ***HOW*** to learn is as important as teaching them ***what*** to learn.

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Teaching Tip:

- Students need to be Intentionally and Transparently taught how to use the technology before you begin teaching virtually.
- Intentionally and Transparently create a safe learning environment for students as you begin virtual (or classroom) learning.

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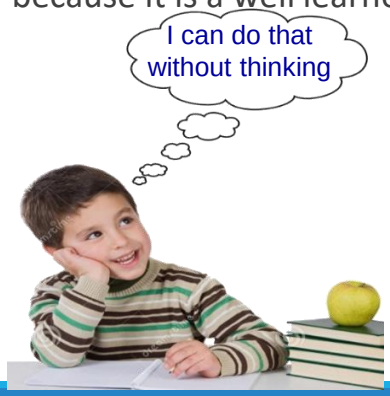
Thinking is the Essence of Executive Function

- When we ***know*** to do something we just do it because it is a well learned skill



In **novel** situations we have to THINK more to be successful.

This is dependent on the brain's neurocognitive process we call EF

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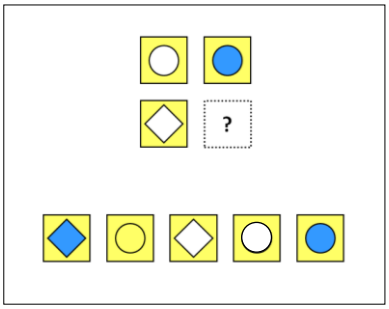
Thinking and Knowing

Solving this task demands understanding the relationships among the parts



These tasks demand the same type of thinking (understanding relationships) but not the same kind of knowing

Girl is woman as boy is to _____?

3 is to 6 as 4 is to _____?

C^7 is to F as E^7 is to _____?

Το κορίτσι είναι σε γυναίκα ως αγόρι;
To korítsi eínai se gynaíka os agóri?

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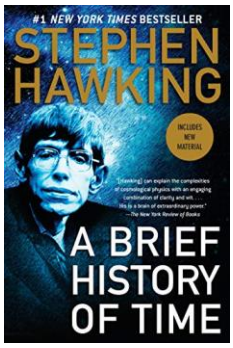
"A Brief History of Time" by Stephen Hawking

On Time Travel…

Energy is a bit like money: if you have a positive balance, you can distribute it in various ways, but according to the classical laws that were believed at the beginning of the century, you weren't allowed to be overdrawn. So these laws would have ruled out any possibility of time travel. However, the classical laws were superseded by quantum laws based on the uncertainty principal. The quantum laws are more liberal and allow you to be overdrawn on one or two accounts provided the total balance is positive. In other words, quantum theory allows the energy density to be negative in some places, provided that this is made up by the positive energy densities in other places, so that they total energy remains positive.



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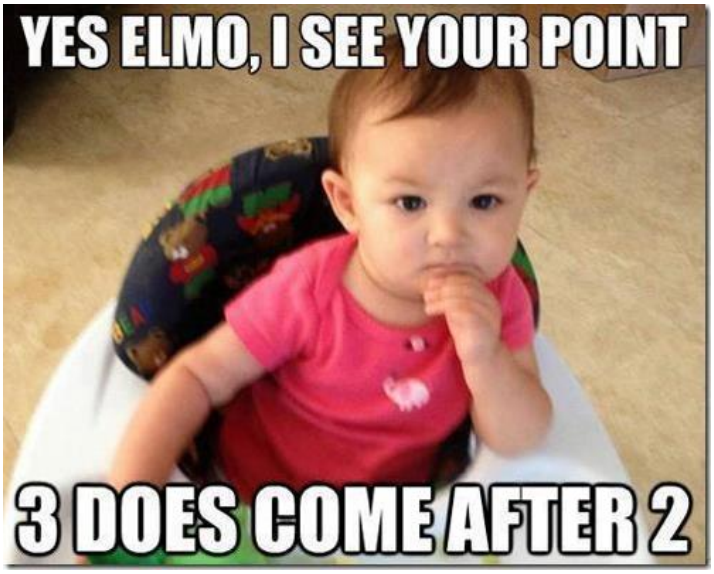

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Mindful Moment and Self Regulation How's Your Engine Revving?

- Too High? Too Low? Just Right?
- Do you need to energize yourself or calm yourself?
  - Energize: Do an energizing movement or activity
  - Calm: Deep breathing and deep muscle stretches

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Why Brain Breaks?

- **SYN-NAPS: Neurotransmitters, brain transport proteins, needed for memory construction and attention are depleted after as little as ten minutes of doing the same activity. Syn-naps are brain-breaks where you change the learning activity to let the brain chemicals replenish.**
- **The Syn-naps can be stretching, singing, or acting out vocabulary words. After just a few minutes, refreshed brains will be ready for new memory storage.**
- **Dr. Judy Willis**

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Hammill Institute on Disabilities

Journal of Learning Disabilities
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http://journaloflearningdisabilities.sagepub.com
SAGE

A Cognitive Strategy Instruction to Improve Math Calculation for Children With ADHD and LD: A Randomized Controlled Study

Jackie S. Iseman[1] and Jack A. Naglieri[1]

Abstract

The authors examined the effectiveness of cognitive strategy instruction based on PASS (Planning, Attention, Simultaneous, Successive) given by special education teachers to students with ADHD randomly assigned by classroom. Students in the experimental group were exposed to a brief cognitive strategy instruction for 10 days, which was designed to encourage development and application of effective planning for mathematical computation, whereas the comparison group received-standard math instruction. Standardized tests of cognitive processes and math achievement were given at pretest. All students completed math worksheets throughout the experimental phase. Standardized achievement tests (*Woodcock-Johnson Tests of Achievement, Third Edition*, Math Fluency and *Wechsler Individualized Achievement Test, Second Edition*, Numerical Operations) were administered pre- and postintervention, and Math Fluency was also administered at 1 year follow-up. Large pre–post effect sizes were found for students in the experimental group but not the comparison group on math worksheets (0.85 and 0.26), Math Fluency (1.17 and 0.09), and Numerical Operations (0.40 and –0.14, respectively). At 1 year follow-up, the experimental group continued to outperform the comparison group. These findings suggest that students with ADHD evidenced greater improvement in math worksheets, far transfer to standardized tests of math (which measured the skill of generalizing learned strategies to other similar tasks), and continued advantage 1 year later when provided the PASS-based cognitive strategy instruction.

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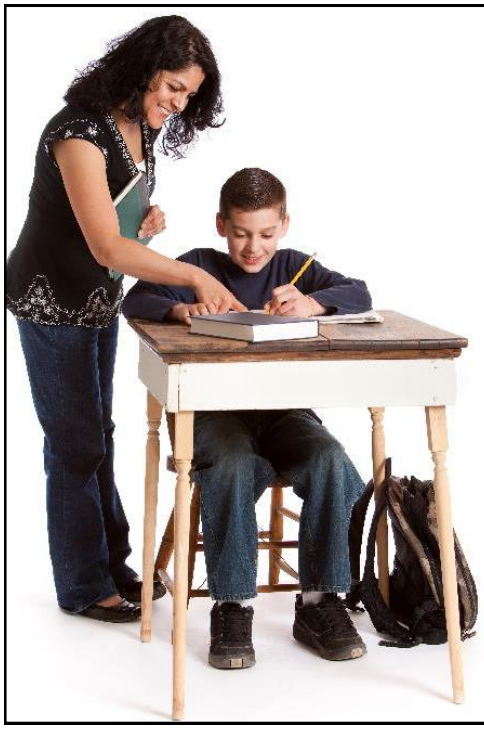

Planning Facilitation: Asking vs. Telling

- Teachers facilitated discussions to help students become more self-reflective about use of strategies
- Teachers asked questions like:
  - What was your goal?
  - Where did you start the worksheet?
  - What strategies did you use?
  - How did the strategy help you reach your goal?
  - What will you do again next time?
  - What other strategies will you use next time?

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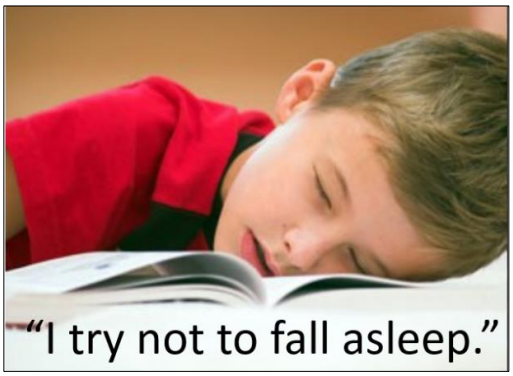
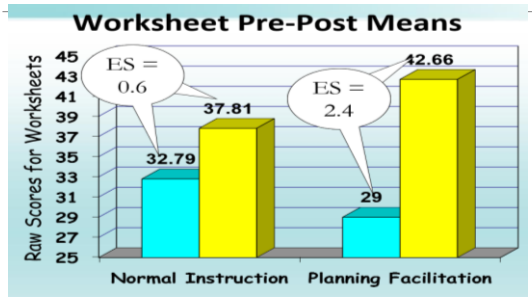
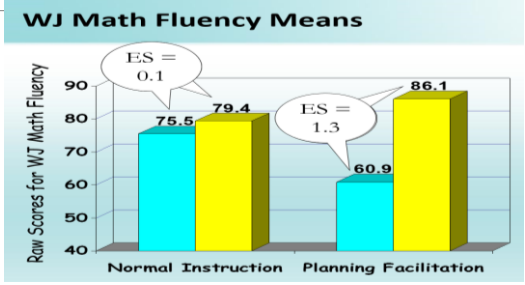
Student Comments During Planning Facilitation

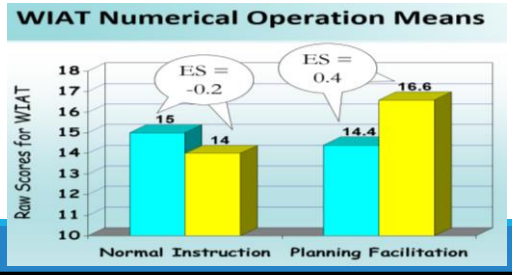
- My goal was to do all of the easy problems on every page first, then do the others.
- I do the problems I know, then I check my work.
- The problems that have more steps take more time, so I skip them
- I did all the problems in the brain-dead zone first.



Pre-Post Means and Effect Sizes for the Students with LD and ADHD



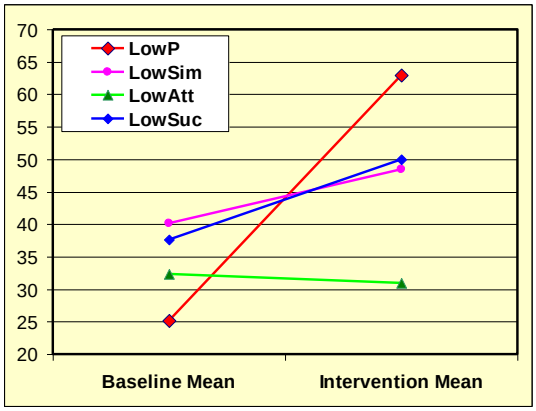




At 1-year follow-up, 27 of the students were retested on the WJ-III ACH Math Fluency subtest as part of the school's typical yearly evaluation of students. This group included 14 students from the comparison group and 13 students from the experimental group. The results indicated that the improvement of students in the experimental group ($M = 16.08$, $SD = 19$, $d = 0.85$) was significantly greater than the improvement of students in the comparison group ($M = 3.21$, $SD = 18.21$, $d = 0.09$).

Iseman (2005)

- Pre-Post mean scores by PASS profile
- Most students improve and those who are lowest in EF (Planning) benefit the MOST
- Response to the intervention was related to PASS profiles



Summary of PASS Intervention Research (Naglieri & Otero, 2017)

Effectiveness of a Cognitive Strategy Intervention in Improving Arithmetic Computation Based on the PASS Theory

Jack A. Naglieri and Deanne Johnson

A Cognitive Strategy Instruction to Improve Math Calculation for Children With ADHD and LD: A Randomized Controlled Study

Jackie S. Iseman[1] and Jack A. Naglieri[1]

Abstract

The authors examined the effectiveness of cognitive strategy instruction based on the PASS theory (Planning, Attention, Simultaneous, and Successive) given by special education teachers to students with ADHD ranging in age from 7 to 17 years. Students in the experimental group were exposed to a brief cognitive strategy instruction for 10 days, which was designed to encourage development and application of effective planning for mathematical computation, whereas the comparison group received standard math instruction. Standardized tests of cognitive processes and math achievement were given at pretest. All students completed math worksheets throughout the experimental phase. Standardized achievement tests (*Woodcock-Johnson Tests of Achievement, Third Edition*, Math Fluency and *Wechsler Individualized Achievement Test, Second Edition*, Numerical Operations) were administered pre- and postintervention, and Math Fluency was also administered at 1 year follow-up. Large pre–post effect sizes were found for students in the experimental group but not the comparison group on math worksheets (0.85 and 0.26), Math Fluency (1.17 and 0.09), and Numerical Operations (0.40 and –0.14, respectively). At 1 year follow-up, the experimental group continued to outperform the comparison group. These findings suggest that students with ADHD evidenced greater improvement in math worksheets, far transfer to standardized tests of math (which measured the skill of generalizing learned strategies to other similar tasks), and continued advantage 1 year later when provided the PASS-based cognitive strategy instruction.

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REMEDIATING READING COMPREHENSION DIFFICULTIES: A COGNITIVE PROCESSING APPROACH

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Mathematics Instruction and PASS Cognitive Processes: An Intervention Study

Jack A. Naglieri and Suzanne H. Gottling

Abstract

The purpose of this study was to determine if an instruction designed to facilitate planning, given by teachers to the group, would have differential effects depending on the specific cognitive characteristics of the individual students. instruction that facilitated planning was provided to a group of 12 students with learning disabilities. All students com work sheets during 7 sessions of baseline and 21 sessions of intervention (when the instruction designed to facilitate pl provided). During the intervention phase, students engaged in self-reflection and verbalization of strategies about how problems were completed. The class was sorted according to planning scores, obtained using the Cognitive Assessm which is based on Planning, Attention, Simultaneous, Successive (PASS) theory; and low- and high-planning contrast identified. The results, consistent with previous research, showed that teaching control and regulation of cognitive beneficial effects for all students but was especially helpful for those who were poor in planning, as defined by the Implications of these findings are provided.

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University of Alberta

Troy Janzen
Taylor University College

Neelam Boora
Nipisihkopahk Middle School

Comparing the Effectiveness of Two Reading Intervention Programs for Children With Reading Disabilities

Abstract

The effectiveness of two reading intervention programs (phonics-based and inductive learning) was investigated with 63 First Nations children

Journal of Psychoeducational Assessment
2003, 21, 282-299

PLANNING FACILITATION AND READING COMPREHENSION: INSTRUCTIONAL RELEVANCE OF THE PASS THEORY

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The purpose of this study was to evaluate whether instruction designed to facilitate planning would have differential benefit on reading comprehension depending on the specific Planning, Attention, Simultaneous, and Successive (PASS) cognitive characteristics of each child. A sample of 45 fourth-grade general education children was sorted into three groups based on each PASS scale profile from the Cognitive Assessment System (CAS). The groups did not differ by CAS Full Scale standard score, chronological age, gender, or pretest reading comprehension scores. After each child's pretest reading comprehension

instructional level was determined, a cognitive strategy instruction intervention was conducted. The children completed a reading comprehension posttest at their respective instructional levels after the intervention. Results showed that children with a Planning weakness ($n = 13$) benefited substantially (effect size of 1.32) from the instruction designed to facilitate planning. Children with no weakness ($n = 21$; effect size = .52) or a Successive weakness ($n = 11$; effect size of .06) did not benefit as much. These results support previous research suggesting that PASS profiles are relevant to instruction.

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Mindsets + Skillsets = Results

- Mindsets & Skillsets include
  - Brain-based concepts such as
    - Executive Function
    - Metacognition
    - Self-Regulation
    - Planning
  - **These concepts are all closely related to the FRONTAL LOBES of the brain.**

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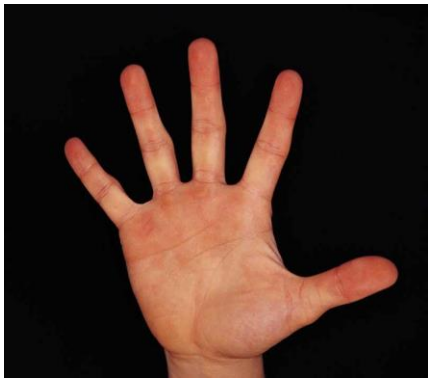
Metacognition: Do WE get it?

- On a scale of 1-5 fingers, how well do you think you know and apply the concept of metacognition in your classroom/school?



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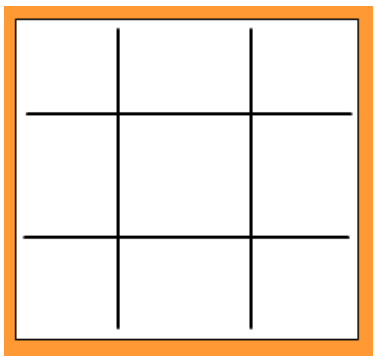
First – Teach Intentionally and Transparently About Metacognition

- Metacognition is *thinking about your thinking*, having a plan of action for what to do when you don't know.
- Core Groups: Come up with your own definition of metacognition



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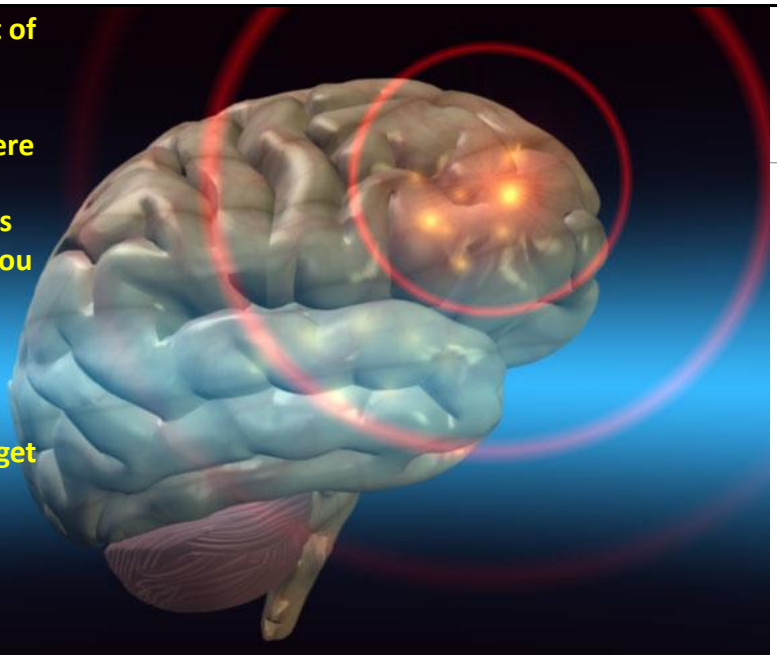
The front part of your brain, or pre-frontal cortex, is where you come up with strategies or plans like you did for tic tac toe.

You can train your brain to get better at Planning



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Draw a picture that represents your idea of metacognition.

STOP AND DRAW: Non-linguistic representations helps cement learning

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THINK SMART:
Ask Questions, Don't Tell

- Kathleen, do this, do that, this way... with the sails, the anchor, the helm, the lines

- Kathleen, what do you think you should do now? What would do differently next time?

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Reframe your Telling to Asking…

- *This is what you need to do…*
  - **How could you do/approach this task?**
- *You're stuck. Let me help you.*
  - **What options do you have for getting unstuck?**
- *Here's your grade for the test.*
  - **Look over your test. What did you do to study that worked? What you would do differently next time**?

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An Introduction to METACOGNITION– Lesson	
Length	30 minutes
C U KAN	**Concept**: METACOGNITION **Understand**: that metacognition is essential in becoming an effective learner **Know**: Metacognition **Able To Do**: Define metacognition through a song, rap, poem or chant that will help them to remember to be metacognitive. **Now You Get It**: Students will reflect on how using metacognition will help them become better learners.
Evidence	Metacognition journal/chart entries (follow up lessons) & memorization of the song/chant

Min	materials	Lesson details
2	worksheet	**Do Now:** Students should silently write down their own descriptions of what's happening in the cartoon. (It's a frog thinking about his own thinking = metacognition)
1		**Opening:** Choose a student to share her description with the class. Tell the students that this picture will make more sense by the end of the lesson if it hasn't quite clicked for them yet.
3	Worksheet Pencils Timer	**Brain warm up/game time:** Tell the students that they will have a chance to play Tic Tac Toe with a partner. They can play as many games as possible within the 2-minute time limit. Tell them to pay attention to what's going on in their minds as they make their choices throughout the games.
4		**Discussion**: Have students raise their hands if they won at least one match. Ask some students to share their secrets. What were they thinking in their minds before they made their moves? Do you have a favorite place to start? Why do you start there? Most likely the students will say they like to start in the corner because they can win that way. Teacher says: "Right ! You have a plan, and that helps you win! If your opponent does something you hadn't expected, you're able to think of ways to adjust your plan so that you still win. Now I'm going to teach you a new important word and show you how to create a plan for winning the learning game. I'll help you see how this same type of thinking will translate to better results with your school work."
15	White board & marker or a chart paper Smartboard or projector and computer to show the clip	**Lesson**: Define metacognition: Thinking about one's thinking. Developing, monitoring and adjusting your plans to help you learn effectively. (Depending on the age group of students with whom you're working, this video could be a good resource to use describe metacognition to the class - http://www.youtube.com/watch?v=mVE21QhY-II Have you ever turned to the next page in your book and only to realize that you hadn't really been paying attention to the words you were "reading"? Have you ever spent time "studying" flash cards only to realize that you can't remember any of the words or concepts? Being metacognitive will help you be aware of your own learning and adjust your strategies to make learning easier.

www.kathleenkryza.com
see the Newsletter on Metacognition
https://kathleenkryza.com/blog/2016/2/thinking-about-thinking

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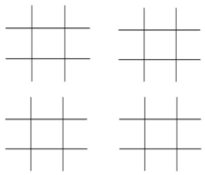
Name _____ date_____

In your own words describe what's happening in this cartoon.

Game time:

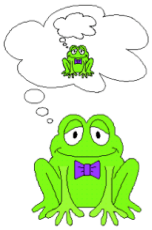


Metacognition Definition

How will metacognition help you become a better learner?

Shapes

METACOGNITION



THINKING ABOUT ONE'S THINKING

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Flash Mob: Antwerp train Station (www.efintheclassroom.net)

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Planning Lesson Student Responses

Q 1: What would you have to plan?

- They had to learn the dance steps (knowledge)
- Someone had to start dancing (initiation)

Q2: What are the parts of a good plan?

- Think of possible problems (strategy generation)
- Organize the dance (organization)

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Planning Lesson Student Responses

Q3: How do you know if a plan is any good?

- Put the plan in action and see if it works (self-monitoring)
- Give it a try (perhaps learn by failing)

Q4: What should you do if a plan isn't working?

1. Fix it. (self-correction)
2. Go home! (a bad plan)

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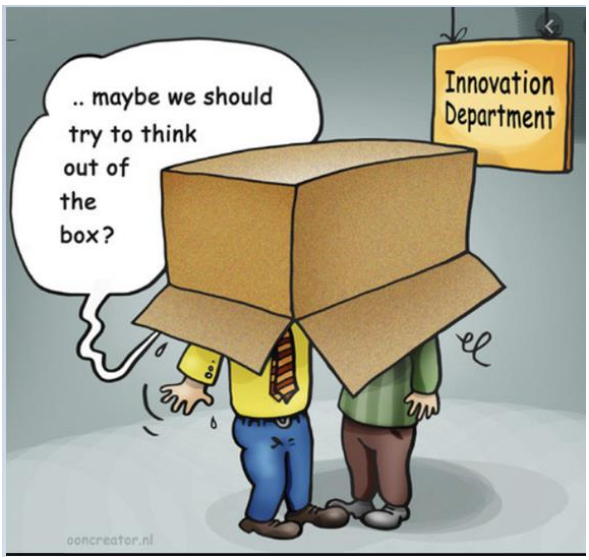

Planning Lesson Student Responses

Q5: How do you use planning in this class?

1. We don't plan in this class
2. Mrs. X does all the planning in this class so you don't have to think about planning

To encourage EF we have to stress thinking about *how to do what **you** decide to do …That is THINK out of the box*

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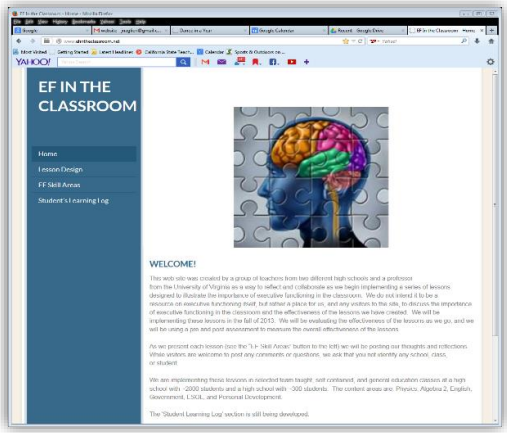
All Lessons Available for Free at

www.efintheclassroom.net



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DAY 1:

Keeping Executive Function Functioning

- EF Defined and the EF Learning Curve (FFT)
- Thinking vs. Knowing
- Planning Facilitation and EF
- Metacognition: Asking vs. Telling
- Takeaway Tips

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Tips and Takeaways

- **Teach intentionally and transparently.**
  - It's normal to experience TFT (terrible first time). It's part of the Learning Curve
  - Self Regulation is being in control of yourself. You can learn to do this.
  - How to use the technology BEFORE you teach
- **Repeat to Remember.** (ask students to say things to each other or to themselves. Tell them WHY.)
- **Brain Breaks:** How often? What does your body need right now.
- **Stop and Draw:** Drawing is powerful way to show understanding
  - Use Zoom Whiteboard, Voicethread, paper and pencil. Other?
- **Practice Asking vs. Telling.** "When do you plan to do your homework? What do you need to do for your brain break? Let's plan our daily schedule together.

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More to Come… April 20th

- Metacognitive Thinking (EF) Before, During and After Learning
- Lesson Planning Framework and examples

YOUR HOMEWORK: Catch yourself TELLING and practice reframing to ASKING

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Please be in touch with us directly for information about additional presentations and consultations

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