Foldables

- Label the front of your folder
  - Think Smart
- Label the Tabs
  - Day, 1, 2, 3, 4, 5
- On the inside of each tab
- At the top, summarize the Big Idea and WHY it’s important.
- List 3-5 facts you want to remember
- Note at least three take away strategies or ideas you plan to use in your work with students.

Think Smart: Using Mindsets and Metacognition for Student Success – DAY 2: Mindsets + Skillsets = Results

Jack A. Naglieri, Ph.D.
Research Professor, University of Virginia & Devereux Center for Resilient Children

Kathleen M. Kryza, MA
International Educational Consultant, Infinite Horizons
Culture Clash

Here’s Where We’re Going...

- Today’s Introduction and Review
  - PASS Deeper Treatment
  - Mindsets + Skill Sets = Results
  - Planning
  - Skills Sets and Metacognition
Messages that Support a Safe Classroom Environment

Fair is not everybody getting the same thing...fair is everybody getting what they need to be successful!

This is a Risk-taking, Mistake Making Classroom

Core Groups

- Groups of 3-4
- Establish roles:
  - Coach
  - Organizer/Time Keeper
  - Recorder
  - Energizer
Chat Chum Mindset
Check in...

➤ How are you feeling today?
   • I am feeling...

➤ What “weight” are you carrying with you today that you need to let go of so you can stay present.
   • For today, I am letting go of...

➤ What word or phrase summarizes your intention for today?
   • Say your word. (Ex: Open Mind, Deep Thinker)
CREATING A SAFE CLASSROOM FOR THINKING SMART

- Cultural Selves
- Academic Selves
- Social/Emotional Selves

ALL Kids
OUR Kids

Our Emotional Brains

Stimulus → Emotion → Filter → Interpret → Behavior

LEARNING & the BRAIN®
Maslow Was Right On!

1. **Physiological** (Health, food, sleep)
2. **Safety** (Shelter, removal from danger)
3. **Belonging** (Love, affection, being a part of groups)
4. **Esteem** (self-esteem and esteem from others)
5. **Self-actualisation** (Achieving individual potential)

Students can’t learn if they are stuck here.

Conclusions:

Students don’t care what you know, until they know that you care.
Our Cultural Brains

Transform Your Teaching
Big Idea About Culture

Collectivistic Cultural Values
- Emphasis is on groups as the primary entity
- Choices are made with consideration of the group
- Interactions are interdependent based on the role a person plays in the group
- Individuals always seen as a part of the collective.

Individualistic Cultural Values
- Emphasis is placed on the needs, ideas and development of the individual.
- A person’s actions are his or her own,
- Choices are based on personal concerns
- Interacting in a group they do so as an individual.
Our Academic Brains

Differentiating for ALL Learners

CHUNK – Acquire/Input
*Chunk:* how students acquire/take in new information

CHEW – Process
*Chew:* how students make sense of information

CHECK – Show What You Know/Output
*Check:* how students demonstrate their understanding
Chunk, Chew and Check – that’s how the brain learns best!

CHANT IT, REMEMBER IT!

➢ For every 10 minutes you teach something new...
➢ The brain needs one to two minutes to chew!

The Brain and Making Learning Stick

➢ PRACTICE MAKES PERMANENT: Review material using multiple sensory lessons so different neural networks store the knowledge in multiple brain regions. Their brains will build multiple pathways leading to the stored memory, which makes retrieval more efficient. When a memory has been recalled often, their repeated activation strengthens its neuronal circuits - like exercising a muscle.
➢ Dr. Judy Willis

www.kathleenkryza.com
Teaching for Transfer

If we want learning to stick, we have to make it sticky.

Six Learning Foundations that Work for ALL Learners

- Safe Environment
- Routines and Procedures
- Growth Mindsets
- Student Talk
- Student and Teacher Self Reflection
- Mindfulness
Let’s Unpack the Day

How have we addressed the 6 Foundations in today’s workshop?

Creating a ACE Classroom...

Changing Today’s Classrooms
Culturally, Academically, & Emotionally

Transformative Teaching

Kathleen Kryza, MaryAnn Brittingham, Alicia Duncan
Let’s Take a Mindful Moment or Brain Break (or Syn-nap)

The brain needs time process!

- Stretch
- Cross Laterals
- Walk and Talk
- Energizers
- Relaxers

The Brain and Learning

In the classroom, the more ways the materials in the are introduced to the brain and reviewed, the more dendritic pathways of access will be created. There will be more cell-to-cell bridges and these pathways will be used more often, become stronger and remain safe from pruning.

-- Dr. Judy Willis, Neurologist, 2006.
Go Slow to Go Fast!

Want Kids to Think Smart? Make Thinking Visible
Intentional & Transparent

Want Students to OWN their Learning?
BIG IDEA

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.
Brain Rule #4 - Medina
“We need to repeat to remember”

Talking about an event immediately after it has occurred enhances memory for that event.

Litmus Test of Transparency

- If someone came into your class and asked your students what they are learning and why it’s important to learn, could most of them give a clear and specific answer:
  - We are doing a KWL because good readers predict and ask questions
  - We are making graphic organizers to connect our thoughts and ideas
  - We are singing a song to help us see how pioneers in the past had to live and entertain themselves.
  - I am using a mentor text as I write the lead for my piece because I learn from my favorite authors
  - I am helping to put things away because it’s my responsibility to keep our community clean.
Or...

- Would they simply tell what they are doing?
  - We are doing a KWL.
  - I am writing a story about my dad’s birthday?
  - I am drawing a picture of girl from Japan.
  - We are making a graphic organizer for our project? (Why? Cause Ms. K likes them)
  - We are doing the worksheets (Why? What kind of thinking is required?)

WALK AND TALK: Movement and Talk helps cement learning

• How does becoming more Intentional and Transparent help students “Think Smarter”
ILS: Walk and Talk
 Done Intentionally and Transparently

- Walk and find a partner.
  (Same/opposite eye, hair, clothes)
- Talk for 2 minutes about a prompt
- Teachers float and listen for quality talk
- Whole group share

Learners retain 50% of what they learn through talk
Movement helps cement memory

Clock Partners
If Researched-Based Strategies aren’t working...

- **I and T** = Be intentional and transparent. Tell students **WHY** these strategies work for the learning brain. (Simultaneous and Attention)
- **R and P** = Have clear and focused routines and procedures (Successive)
- **Model and Scaffold** = Breaking the task into smaller steps and modeling (Planning and Attention)
- **P3** = Practice, Practice, Practice (PASS)
- Collaborative Partners can remind each other to check for these issues when trying new strategies

---

**Adjust**

- **Apply**

- **Adapt**
INTELLIGENCE CONCEPTUALIZED AS BRAIN FUNCTION

PASS: A neurocognitive approach

Three Functional Units - A. R. Luria
PASS Neurocognitive Theory

- **Planning** = THINKING ABOUT HOW YOU DO WHAT YOU DECIDE TO DO
- **Attention** = BEING ALERT AND RESISTING DISTRACTIONS
- **Simultaneous** = GETTING THE BIG PICTURE
- **Successive** = FOLLOWING A SEQUENCE

**PASS theory** is a way to measure neuro-cognitive abilities related to brain function.

Move it to Learn It!
More on PASS and the CAS

The Cognitive Assessment System

Jack A. Naglieri, Cara Conway

The Cognitive Assessment System (CAS) (Naglieri & Das, 1997a) is a multidimensional measure of ability based on a cognitive and neuropsychological processing theory called Planning, Attention, Simultaneous, and Successive (PASS) (Naglieri, 1999a, 2005). The PASS theory described by Naglieri and Das (1997b, 2005) is a reconceptualization of intelligence largely, but not solely, based on the neuropsychological work of A. R. Luria (1966, 1971, 1980, 1982). The four processes that make up the PASS theory represent a blend of cognitive and neuropsychological constructs, such as executive functioning (Planning) and selective attention (Attention), including tests that in the past were often arguably described as nonverbal/visual-spatial (Simultaneous) and sequencing/memory (Successive) (Naglieri & Das, 2002).

The PASS theory is a different approach to understanding intelligence that not only the theory may have its roots in neuropsychology, “its branches are spread over developmental and educational psychology” (Vernhagen & Das, 1986, p. 119). Thus, with its connections to developmental and cognitive processing, the PASS theory offers an advantage in explanatory power over the notion of traditional general intelligence (Naglieri & Das, 2002).

PASS Defined

The four cognitive processes that make up the PASS theory are each associated with different brain regions, cognitive abilities, and behaviors (Naglieri, Conway, & Goldstein, 2007). The four processes of the PASS theory are described below.

Planning: a mental activity that provides cognitive control, intentionality, organization, self-regulation and use of processes, knowledge, and skills. This includes self-monitoring and impulse control as well as generation, evaluation, and execution of a plan. This process may involve control over the other three processes, as well as

PASS For Teachers (www.kathleenkryza.com)
Operationalizing PASS Theory

CAS2 (Ages 5-18 yrs.)
CAS2

- 8 (40 minutes) or 12 (60 minutes) subtest versions
- PASS and Full Scales provided (100 & 15) subtests (10 and 3)

CAS2

- Supplementary Scales: Executive Function, Working Memory, Verbal, Nonverbal
- Added: A Visual and Auditory comparison
Cas2 Online Score & Report

- Narrative report can be obtained in Word or PDF

Cas2 Cognitive Assessment System

Scoring and Interpretive Report
Jack A. Naglieri

- Name: Jack Nag
- Age: 8
- Gender: Male
- Date of Birth: 07-12-2005
- Grade: 5
- School: East Lake

This computerized report is intended for use by qualified individuals. Additional information can be found in the Cas2 Interpretive Manual.

Full Scale

Jack earned a Cognitive Assessment System, Second Edition (CAS2) Full Scale score of 102, which is within the Average classification and is a percentile rank of 43. This means that his performance is equal to or greater than that of 43% of children his age in his standardization group. There is a 90% probability that Jack's true Full Scale score falls within the range of 101 to 109. The CAS2 Full Scale score is made up of separate scales called Planning, Attention, Simultaneous, and Successive cognitive processing. Because there was significant variation among the PASS scales, the Full Scale will sometimes be higher and other times lower than the four scales in the test. The Attention Scale was found to be a significant cognitive strength. This means that Jack's Attention score was a strength both in relation to his average PASS score and when compared to his peers. This cognitive strength has important implications for instructional and educational programming.

PASS and Full Scale Scores

Cas2: Brief for Ages 4-18 years

Stimulus Book

Learning & the Brain®

Examiner's Manual

conclusions
CAS2: Brief

- Give in 20 minutes
- Good for reevaluations
- Yields PASS and Total standard scores (Mn 100, SD 15)
- All items are different from CAS2
  - Planned Codes
  - Simultaneous Matrices
  - Expressive Attention
- New Subtest
  - Successive Digits (forward only)

CAS2 Rating Scales (Ages 4-18 yrs.)

- The CAS2: Rating measures behaviors associated with PASS constructs
- Normed on a nationally representative sample of 1,383 students rated by teachers
CAS2 Rating Scales

- The CAS2: Rating form contains 40 items
- 10 items for each PASS scale
- PASS and Total scales are set to have a mean of 100 and standard deviation of 15

The rater is given a description of what each scale is intended to measure.
This informs teachers about PASS.
The CAS2: Rating Scale scores can be used as part of a larger comprehensive evaluation or for instructional planning.

PASS Rating Scale

- Think of someone you would like to rate based on a PASS scale.
- Answer the questions
- Determine the score.
- What did you learn.
  Share with your Chat Chum.
PASS Comprehensive System
(Naglieri, Das, & Goldstein, 2014)

**CAS2 Rating Scale**
(4 subtests)
- Total Score
- Planning
- Simultaneous
- Attention
- Successive

**CAS2 Brief**
(4 subtests)
- Total Score
- Planning
- Simultaneous
- Attention
- Successive

**CAS2 Core**
(8 subtests)
- Full Scale
- Planning
- Simultaneous
- Attention
- Successive

**CAS2 Extended**
(12 subtests)
- Full Scale
- Planning
- Simultaneous
- Attention
- Successive
- Supplemental Scales
  - Executive Function
  - Working Memory
  - Verbal / Nonverbal
  - Visual / Auditory

---

**Our Goal – Think Smart!**

**EMPOWER**

**NOT**

enable
A Nation of Adults Like This?

A New View
Planning and Attention = Executive Function
Self Regulation/Executive Function

- Self Regulation is a deep, internal mechanism that enables children to engage in mindful, intentional and thoughtful behaviors.
  - Elena Bodrova and Deborah J. Leong

- Self-Regulation is a Skill that is Taught, it does not emerge naturally.

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**

  ![Image of a person with a superhero symbol]
Winning Formula to *Think Smart!*

**Mindsets** + **Skill Sets** = **RESULTS!**

**Mindsets**
- Willingness to grow or acceptance of limitations
- Willingness to put forth the effort needed to develop skills sets and utilize knowledge

**Skillsets**
- Using what is known
- Being so fluent with knowledge that it is easily accessed and used
- Using strategies, paying attention, seeing the big picture, and working with information that is in a sequence
Mindsets + Skillsets = Results

- Mindsets & Skillsets include:
  - Brain-based concepts such as:
    - Executive Function
    - Metacognition
    - Self-Regulation
  - These concepts are all closely related to the FRONTAL LOBES of the brain, what A. R. Luria described as PLANNING and ATTENTION

Executive Function/Frontal Lobe

- Frontal Lobe function impacts both students social-emotional and academic success.
- We (have been) and will be weaving in ways to promote development of social-emotional and academic Executive Function throughout the week.
The Curious Story of Phineas Gage

John Fleishman’s “Phineas Gage: A Gruesome but True Story About Brain Science” about September 13, 1848 & 26 year old Phineas Gage

Fleishman (2002, p 70)

- From Damaiso (1994) article in *Science*
- The rod passed through the left frontal lobe, between the two hemispheres, then to left hemisphere
- The damage was to the front of the frontal cortex more than the back, and the underside more than the top
Before . . . & . . . After

- **Before** the accident ‘he possessed a well-balanced mind, was seen as a shrewd, smart business man, very energetic and persistent in executing all his plans of operation’ (p 59)

- **After** the accident his ability to direct others was gone, he had considerable trouble making decisions

- Impairment in
  - (1) intellect
  - (2) behavior
  - (3) Social/emotional
  - (4) work

Goldberg (2009, p. 4)

- “The frontal lobes ... make us human, and as Luria stated, are they the organ of civilization”

- Frontal lobes provide...”

- leadership, motivation, drive, vision, self-awareness, and awareness of others, creativity, sex differences, social maturity, cognitive development and learning...”

- They make each one of us unique
Executive Functions

- Elkhonon Goldberg provides a valuable review of what the frontal lobes do
- Describes EF as the orchestra leader

http://www.elkhonongoldberg.com

What is Executive Function(s)

There is no formal excepted definition of EF
- We typically find a vague general statement of EF (e.g., goal-directed action, cognitive control, top-down inhibition, effortful processing, etc.).
- Or a listing of the constructs such as
  - Inhibition,
  - Working Memory,
  - Planning,
  - Problem-Solving,
  - Goal-Directed Activity,
  - Strategy Development and Execution,
  - Emotional Self-Regulation,
  - And more...but OVERALL...
Frontal Lobes and Emotion

- Goldberg (2011, p 116-117)
  - the “emphasis in the classic studies of frontal lobe syndromes was on cognition [intelligence] rather than on affect [social emotional]”
  - ‘very few researchers have attempted to merge cognitive and emotional aspects of frontal lobe dysfunction’

Phineas had a Social Emotional deficit

- Phineas had profound social emotional problems after his injury to the frontal lobes
- Phineas is
  - insulting
  - impulsively say things
  - uses vulgar language
  - can’t manage his emotions
  - inconsistent in social situations
  - doesn’t recognize he is offensive
  - looses control in interactions with others
Take Away Message

- Social Emotional competence is the result of the interaction between the brain (EF) and in all aspects of the environment
- Children CAN BE TAUGHT good, or bad, social emotional skills

Big Idea: PASS

Subheadings:
- Planning
- Mindsets
- Skill Sets
- Attention
- Successive
- Simultaneous

You will be capturing the big idea of each key part of PASS on your organizer after we teach each section.
Planning (or lack of it!)

PASS Theory: Planning

- **Planning** is a neurocognitive process that a person uses to determine, select, and use efficient solutions to problems
  - problem solving
  - developing plans and using strategies
  - retrieval of knowledge
  - impulse control and self-control
  - These can also be described as executive function, metacognition, strategy use
Which Lemming has good Planning?

CAS2: Rating Scale Planning

Directions for Items 1–10. These questions ask how well the child or adolescent decides how to do things to achieve a goal. They also ask how well a child or adolescent thinks before acting and avoids impulsivity. Please rate how well the child or adolescent creates plans and strategies to solve problems.

During the past month, how often did the child or adolescent . . .

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Slightly</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. produce a well-written sentence or a story?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. evaluate his or her own actions?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. produce several ways to solve a problem?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. have many ideas about how to do things?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. have a good idea about how to complete a task?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. solve a problem with a new solution when the old one did not work?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. use information from many sources when doing work?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. effectively solve new problems?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. have well-described goals?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. consider new ways to finish a task?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Planning Raw Score
Planned Codes 1

- Child fills in the codes in the empty boxes
- Children are encouraged to think of a good way to complete the page
PASS Abilities: Planning

- Planning Ability is: *how you do what you decide to do.*

Math Strategies

Note to the Teacher:
When we teach children skills by helping them use strategies and plans for learning, we are teaching both knowledge and processing. Both are important.
The Role of PASS and Learning

Planning Learning Curves

- Learning depends upon many factors especially PASS
- At first, PASS plays a major role in learning
- When a new task is learned and practiced it becomes a skill and execution requires less thinking

Note: A skill is the ability to do something well with minimal effort (thinking)
Does a 13 month old have EF?

Age 19 mos: Knowledge & Planning
Building the Big Picture

Big Idea: PASS

Subheadings:
- Planning
- Mindsets & Skill Sets
- Attention
- Successive
- Simultaneous

You will be capturing the big idea of each key part of PASS on your organizer after we teach each section.

Instructional Implications for Planning
Engaging the FRONTAL LOBES
Planning

Planning Facilitation for Math Calculation

Math calculation is a complex activity that involves recalling basic math facts, following procedures, working carefully, and checking one's work. Math calculation requires a careful (i.e., planful) approach to follow all of the necessary steps. Children who are good at math calculation can move on to more difficult math concepts and problem solving with greater ease than those who are having problems in this area. For children who have trouble with math calculation, a technique that helps them approach the task planfully is likely to be useful. Planning facilitation is such a technique.

Planning facilitation helps students develop useful strategies to carefully complete math problems through discussion and shared discovery. It encourages students to think about how they solve problems, rather than just think about whether their answers are correct. This helps them develop careful ways of doing math.

How to Teach Planning Facilitation

Planning facilitation is provided in three 10-minute time periods: 1) 10 minutes of math, 2) 10 minutes of discussion, and 3) 10 more minutes of math. These steps can be described in more detail:

Step 1: The teacher should provide math worksheets for the students to complete in the first 10-minute session. This gives the children exposure to the problems and ways to solve them. The teacher gives each child a worksheet and says, "Here is a math worksheet for you to do. Please try to get as many of the problems correct as you can. You will have 10 minutes." Small variations on this instruction are okay, but do not give any additional information.

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

Jackie S. Isemann and Jack A. Naglieri

Abstract

The authors examined the effectiveness of cognitive strategy instruction (Successive) given by special education teachers to students with ADHD. The experimental group were exposed to a brief cognitive strategy instruction development and application of effective planning for mathematical computation. Standardized tests of cognitive processes (the Johnson Tests of Achievement, Third Edition, Math Fluency and Word-Related Numerical Operations) were administered pre- and postintervention, as a follow-up. Large pre-post effect sizes were found for students in the experimental group (0.85 and 0.26), Math Fluency (1.17 and 0.09), and Numerical Operations (1.04 and 0.08). At 1 year follow-up, the experimental group continued to outperform students with ADHD evidenced greater improvement in math workbooks (which measured the skill of generalizing learned strategies to other situations) when provided the PASS-based cognitive strategy instruction.
Design of the Study

Experimental and Comparison Groups

7 worksheets with Normal Instruction

Experimental Group
19 worksheets with Planning Facilitation

Comparison Group
19 worksheets with Normal Instruction

Instructional Sessions

- Math lessons were organized into “instructional sessions” delivered over 13 consecutive days
- Each instructional session was 30-40 minutes
- Each instructional session was comprised of three segments as shown below

<table>
<thead>
<tr>
<th>Segment</th>
<th>Duration</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 minutes</td>
<td>10 minute math worksheet</td>
<td></td>
</tr>
<tr>
<td>10-20 minutes</td>
<td>Planning Facilitation or Normal Instruction</td>
<td></td>
</tr>
<tr>
<td>10 minutes</td>
<td>10 minute math worksheet</td>
<td></td>
</tr>
</tbody>
</table>
Planning (Metacognitive) Strategy Instruction

- 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?

Student Plans

- “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.”
- “I do them (the algebra) by figuring out what I can put in for X to make the problem work.”
- “I did all the problems in the brain-dead zone first.”

“I try not to fall asleep.”
Classroom Worksheets Pre-Post

Raw Scores for Worksheets

<table>
<thead>
<tr>
<th></th>
<th>Normal Instruction</th>
<th>Planning Facilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES = 0.6</td>
<td>33</td>
<td>38</td>
</tr>
<tr>
<td>ES = 2.4</td>
<td>29</td>
<td>43</td>
</tr>
</tbody>
</table>

Reminder
< .2 = no effect
.2 - .5 = small
.6 - .8 = medium
> .8 = large

Woodcock-Johnson Math Fluency

Raw Scores for WJ Math Fluency

<table>
<thead>
<tr>
<th></th>
<th>Normal Instruction</th>
<th>Planning Facilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES = 0.1</td>
<td>75.5</td>
<td>79.4</td>
</tr>
<tr>
<td>ES = 1.3</td>
<td>60.9</td>
<td>86.1</td>
</tr>
</tbody>
</table>

Reminder
< .2 = no effect
.2 - .5 = small
.6 - .8 = medium
> .8 = large
**WIAT Numerical Operations**

Raw Scores for WIAT

- Normal Instruction: 15
- Planning Facilitation: 16.6

**Reminder**
- $< .2$ = no effect
- $0.2 - 0.5$ = small
- $0.6 - 0.8$ = medium
- $> 0.8$ = large

**One Year Follow-up**

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)

- Baseline Intervention means by PASS profile
- Different response to the same intervention

Results

- The experimental group did better than the control on math taken from the curriculum on standardized math tests
- A year later the experimental group still outperformed the control group.
- *Mindsets Plus Skill Sets Equals Results!*
Discuss: What does this mean for our work as psychs, teachers, speech path, etc.

Don’t Commit Assumicide
-Kelly Gallagher

- Assuming that someone else has taught students the skills they need to learn effectively in your classroom.
- Assuming that students will transfer skills they learned in someone else’s class into your classroom without helping them transfer the skills.
Let’s Take a Break!

3 Minute Body Scan

Calm
www.jacknaglieri.com

- General information
- Copies of presentations, research and book chapters
- To ask a question

kathleenkryza.com

- Newsletter
- Free Resources
- Books
- Contact me or book me for your school
- Don’t forget to like me on Facebook or Follow me on Twitter!
Edu-Venture
In Belize

differentiation, experience it to embrace it!

www.kathleenkryza.com

Skill Sets

LEARNING & the BRAIN®
Metacognition

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

Make Metacognition Visible
Learning to do well in school isn’t magic....

When you are Metacognitive, you...

Think Smart!
You have to Think SMART
And have a...

First: Teach Intentionally About Metacognition

Metacognition is thinking about your thinking, having a plan of action for what to do when you don’t know.

RESTATE: Now restate the term in your own words.
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.

STOP AND DRAW: Non-linguistic representations helps cement learning.

Draw a picture that represents your idea of metacognition. Share.

www.inspiringlearners.com 2012
REVIEW: More on Metacognition
(Read “How People Learn” for more...)

- **METACOGNITION** consists of three basic elements:
  - Developing a plan of action
  - Maintaining/monitoring the plan
  - Evaluating the plan

- The more students are aware of their thinking processes as they learn, the more they can control such matters as goals, dispositions, and attention. Self-awareness promotes self-regulation
You Try It! Turn and Talk

- Based on what you just learned, describe how you are metacognitive about exercising or eating right.
- Do you need to monitor and adjust? How’s your plan working?

(Meta-strategic)

Think SMART!

Stop and THINK
Make a PLAN
Take ACTION!
Review/Reflect/Revise
Ta da! (or) Try Again

Developed by Naglieri and Kryza, 2014
Let’s Try: Academic Metacognition

➤ I’ll give you some examples and you tell me if this person is THINKING SMART or NOT.
➤ Scott tried once, but couldn’t do his math homework, so he watched T.V.
➤ Was he THINKING SMART?
➤ Let’s help Scott THINK SMART

Let’s Try: Social Emotional Metacognition

➤ I’ll give you some examples and you tell me if this person is THINKING SMART or NOT.
➤ Wenting was upset when kids started teasing her on the playground, so she picked up dirt and started throwing it at them.
➤ Was she THINKING SMART?
➤ Let’s help Wenting THINK SMART
Think SMART!
Stop and THINK
Make a PLAN
Take Action!
Review/Reflect/Revise
Ta da! (or) Try Again

Success.
It’s not Magic, It’s Metacognition!
Think SMART = Success!
Think **SMART** Rap!

Think **SMART**!

Here’s how you START
You THINK, “I CAN!”

Then you make a PLAN
Now give it GO,

Watch your brain GROW!

So now YOU KNOW...

**THINK **SMART**!**

Peace out!

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**LEARNING & the BRAIN**

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www.kathleenkryza.com

Past Newsletter on Metacognition
High School Lessons
www.efintheclassroom.net

- Start with Awareness of thinking about thinking
Metacognition Lesson:
EF in the Classroom

Planning Lesson

Phrase of the week: What is your plan?

http://www.youtube.com/watch?v=bQLCZOG20zk

1. What had to happen so that the people could dance together in this video?
2. What are the parts of a good plan?
3. How do you know if a plan is any good?
4. What should you do if a plan isn’t working?
5. How do we use planning in this class?

Go to student learning log and create a plan for the week.

Students watched a Flash Mob at Antwerp train Station (2009)
Planning Lesson Student responses

Q: What would you have to plan out?
   • They had to learn the dance steps (knowledge)
   • Someone had to start dancing (initiation)
   • Permission from train station (planning)

Q: What are the parts of a good plan?
   • Think of possible problems (strategy generation)
   • Organize the dance (organization)
   • Practice the dance steps (initiation)
   • Have a good idea of what to do (knowledge)

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)

1. Q4: What should you do if a plan isn’t working?
   1. Fix it. (self-correction)
   2. Go home! (a bad plan)
Planning Lesson Student responses

Q5: How do you use planning in this class?

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

Regroup to Create Planning Facilitation (Metacognitive) Questions

➢ Social Emotional
  • Before, During, After

➢ Academic
  • Reading
    • Before, During, After
  • Math
    • Before, During, After

➢ Develop three guiding questions you could ask students to
Anchor Charts = Transparent

Skill Set Anchor Chart: Making Thinking Visible

- Metacognition
  - Thinking Stems
    - I'm Wondering...
    - I'm Thinking...
    - I'm Noticing...
    - I'm Seeing...
    - I'm Feeling...
    - It Reminds Me of...
    - I'm figuring out...

- 1. Metacognition
- 2. Authorial intent
- 3. Connections

- What Strategies can you use when you become stuck in your learning?
  - Ask for help
  - Re-read --- Or --- Read on
  - Ask for Clarification/Explain better
  - Use background knowledge
  - Go back over what I’ve learned
  - Look for context clues
  - Think hard!
  - Think about what I’ve done in the past.
  - Stay calm...
  - Pick out what I do understand
Self-Assessment...

- I'm here.
- I'm giving up.
- I'm not a failure.
- I'm going to stop.


- I'm not giving up.
- Prefrontal Cortex: never give up.
- Prefrontal Cortex: part of brain where you think.
Dennis, 16, On Metacognition

- What’s metacognition?
- It’s the recognition,
- Of how my brain works,
- Understanding my learning quirks.
- It means I’ve got to have a plan
- And more important, think, “I can!”
- Before, during, after, that’s the trick
- Metacognition means that learning sticks.
- When I have a plan, I’m a stronger reader
- This can help me become a real leader!
- So I’ll practice my skills each and every day.
- Metacognition will take me all the way!

LEARNING & the BRAIN®
Think and Talk

How will you support students in developing their meta-strategic skill sets?

NOTE: STOP AND TALK is important because the brain retains 50% through talk.

LET’S TAKE A BRAIN BREAK or Syn-Nap

The brain needs time to process!

- Stretch
- Cross Laterals
- Walk and Talk
- Energizers
- Relaxers
Building the Big Picture

Big Idea: PASS

Subheadings:
- Planning
- Mindsets
- Skill Sets
- Attention
- Successive
- Simultaneous

You will be capturing the “Big Idea” of each key part of PASS on your organizer after we teach each section.

LEARNING & the BRAIN®
PASS Theory: Planning Challenges

Examples of classroom problems related to Planning

- Using the same strategy even if it is not effective
- Struggling with how to complete tasks
- Not monitoring progress during a task
- Misinterpretation of what is read

The Case of Rocky

Specific Learning Disability and ADHD
The case of Rocky

- Rocky is a real child with a real problem.
- He lives in a large middle class school district.
  - a wide variety of services are available.
- In first grade Rocky was performing significantly below grade benchmarks in reading, math, and writing.
  - He received group reading instruction weekly and six months of individual reading instruction from a reading specialist.
  - He made little progress and was retained.

Note: This child’s name and other potentially revealing data have been changed to protect his identity.

The case of Rocky

- By the middle of his second year in first grade Rocky was having difficulty with:
  - decoding, phonics, and sight word vocabulary;
  - math problems, addition, fact families, and problem solving activities;
  - and focusing and paying attention.”
- After two years of special team meetings and special reading instruction he is now working two grade levels below his peers and is having difficulty in reading, writing, and math.
- A comprehensive evaluation was conducted.
The case of Rocky

- He has Planning and Successive weaknesses
- Met DSM for ADHD
- Met SLD definition a “disorder in one or more of the basic psychological processes”

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Discrepancy Consistency Model for SLD

- Discrepancy between high and low processing scores
- Discrepancy between high processing and low achievement
- Consistency between low processing and low achievement

Interventions

- Helping Children Learn Intervention Handouts for Use in School and at Home, Second Edition
  By Jack A. Naglieri, Ph.D., & Eric B. Pickering, Ph.D.,
- Spanish handouts by Tulio Otero, Ph.D., & Mary Moreno, Ph.D.
Three Categories for Each Day

- Summarize the Big Idea and WHY it’s important.
- List 3-5 facts you want to remember
- Note at least three take away strategies or ideas you plan to use in your work with students.
"When the Japanese mend broken objects, they aggrandize the damage by filling the cracks with gold. They believe that when something’s suffered damage and has a history it becomes more beautiful."

Billie Mobayed

The only way to climb a mountain …

Slowly, slowly, easy, easy…
The Shape of Things...

Something that Squares with your beliefs

3 Strategies you intend to use

A question that is still circling in your mind

Stand and Share

Think back to the SNL video this morning. Why do we need to develop these six foundations if we want kids to “Think Smart?”
How have we been learning both collectively and individually thus far? How have we learned in varied modalities?