Preparing Students to Become Critical/Deep Thinkers for Common Core Assessments:

Mindsets Plus Skill Sets Equal Results
Presented by Kathleen Kryza
www.kathleenkryza.com

Please Stand if...
• You are an elementary teacher
• A middle or high school teacher.
• Educational administrator
• Affiliated with a college or university
• Psychologist, therapist or other counseling specialist.
• Parent
• Other

STAND AND SHARE:
Who’s Here Today?

My Teaching Journey
Secondary and Elementary Classroom Teacher
Special Education
Talent Development
Multicultural Learners
Juvenile Delinquents
Teacher of Teachers
Teacher Researcher

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

Become Teacher Researchers

• What Do Teacher Researchers Do?
• Develop questions based on their own curiosity about their students' learning and their teaching
• Investigate their questions with their students systematically documenting what happens
• Reflect on their teaching to build knowledge by critically examining their own observations and reflections
• Examine their assumptions and beliefs
• Articulate their theories
• Discuss their research with their colleagues for support as "critical friends" to validate their findings and interpretations of their data
• Present findings to others
• Talk to their students
• Give presentations (talk to teacher in room next door, as in conferences)
• Write about their research (school-wide publication, national), participate in teacher research web sites, online forums, e-mail communications
Walking on the Shoulders of Giants and Alongside Colleagues

Science of Teaching
- Dr. Jack Naglieri
- Dr. Sam Goldstein
- Dr. Carol Dweck
- National Research Council
  - How People Learn
- Dr. Judy Willis
- Dr. Jon Kabatt-Zinn

Art of Teaching
- Alicia Duncan
- Joy Stephens
- MaryAnn Brittingham
- The wonderful schools and teachers I have the honor work with around the globe

Learning Goals for This Session
- Learn researched-based, doable strategies for teaching students to become critical, deep thinkers.
- Walk away with tools you can use right away as teacher researchers.

Dr. Seuss, before he died, wrote a story that implied, Teaching to tests was not the key, To helping students think thoughtfully!

Poor Mr. Lowe, the principal.
If they fail the test...
Miss Bonkers Knows Better!
(We must trust ourselves)

Miss Bonkers rose. “Don’t fret,” she said. “You’ve learned the things you need. To pass that test and many more—I’m certain you’ll succeed. We’ve taught you that the earth is round. That red and white make pink. And something else that matters more—We’ve taught you how to think.”

The MESSAGE:
Don’t let test prep get you down!
(like Poor Mr. Lowe.)

Tests are gatekeepers…
Do we really want to stop here?

Routines & Procedures

- Sound of Coming Together
- Double Entry Journal
- Core Groups
- Norms
- Chat Chums
- Clock Partners

Inspiring Learners Strategies

<table>
<thead>
<tr>
<th>ILS Alert/Big Ideas</th>
<th>Why Use Them/Why Important</th>
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<td></td>
<td>Engaging</td>
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<td>Honor All Types of Learners</td>
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Core Groups

- Groups of 4 to 5
- Establish roles:
  - Coach
  - Organizer/Time Keeper
  - Recorder
  - Energizer

Norms for Today

- Respect Others
- Stay engaged and involved
- Professional Use of Technology
- Practice forming new habits of the mind that challenge the limits of your potential.

Talk about it…

- In the 21st century, teaching kids **HOW** to learn is as important (or more important?) than teaching them **WHAT** to learn. Agree or Disagree? Why?

Knowing what to teach is essential to good teaching.
But knowing **WHO** you are teaching and **HOW** to reach them is what distinguishes good teachers from mere content experts.

*(Gunter, Estes and Schwab)*

Content Expert? Or **TEACHER**?
Find Two Clock Partners

Find a 12 and 6 o'clock partner.

Let’s chat…

• WHEN IT'S TIME TO TALK WITH YOUR CHAT CHUM:
  • Sit Knee to Knee, Eye to Eye
  • Decide who is Chat Chum A and Chat Chum B
  • Let’s practice with 10 X 2

10 x 2  A routine for noticing details, listening and generating ideas.

1. Look at pages 5-6 for 1 minute.
   List 8 words or phrases that stand out about the expectations for thinking with the CCSS. 1 minute
2. Listen to your chat chums list of words/ phrases
   Look at pages 5-6 again
3. Repeat steps 1 and 2 for 1 minute each
   Look at the pages again and try to list 5 more words or phrases to your list.
   WHAT ARE SOME COMMON IDEAS YOU GENERATED ABOUT CCSS EXPECTATIONS?

10 X 2  Common Core Connections

• Think about things from multiple perspectives
• Use logic and knowledge to formulate opinions
• Articulate and defend their positions
• Read and write at high levels with purpose and clarity
• Apply what they know to solve authentic problems
• Work collaboratively with others for a common purpose
The Core Curriculum
Deep Thinking
Procedural Knowledge

Procedural knowledge is related to the procedure to carry an action out. For example, a method to balance a checkbook would be considered procedural knowledge. Knowledge about "how" to do something is procedural knowledge. Procedural knowledge is instruction-oriented. It focuses on how to obtain a result.

- Math Core
  - conceptual understanding
  - procedural fluency
  - problem solving
- ELA Core
  - conceptual understanding
  - metacognitive processing
  - analytical reasoning

Teaching Kids to THINK Can Change Schools

- 1/3 of the students entering Buckhorn HS were reading at or below the 7th grade level.
- “Those numbers completely changed my professional life. I couldn’t eat. I couldn’t sleep. Each of those numbers had a face and that face went to bed with me at night”
- Buckhorn Staff immersed themselves in learning how to boost literacy;
- Now a national model and has exceeded state averages on Alabama’s 10th grade writing test.

Winning Formula for Success in You and Your Students

Mindset plus Skill Sets equals RESULTS!

The Brain and Intelligence as PASS
PASS: A neuropsychological approach to intelligence based on three Functional Units described by A. R. Luria (1972)
IQ defined by BRAIN function

- **PASS** theory is a modern way to define ‘ability’ (AKA – intelligence)
- **Planning** = THINKING ABOUT THINKING
- **Attention** = BEING ALERT
- **Simultaneous** = GETTING THE BIG PICTURE
- **Successive** = FOLLOWING A SEQUENCE

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A Theory of Learning

**Cognitive Assessment System: Redefining Intelligence from a Neuropsychological Perspective**

**We Will Focus on Planning and Attention Today**

- Good Frontal Lobe thinking leads to good decision making and better decisions about how to get things done.
  - Poor Frontal Lobe thinking leads to problems with deciding how to think, act and relate to others
Make Thinking Visible

What is Visible Thinking?
Using thinking routines and visual documentation to deepen students' understanding.

Intentional & Transparent

Intentional: YOU know why your doing what your doing.
Transparent: THEY know why you’re doing what your doing.

Want Students to OWN their Learning?
BIG IDEA
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?)

LET’S TAKE A BRAIN BREAK!

The brain needs time to process!
- Stretch
- Cross Laterals
- Walk and Talk
- Energizers
- Mindful Moment

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
Teaching for Transfer:
See “How People Learn”

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

Make Metacognition Visible

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?

Helping Children Learn

Achievement went up when students were given direct instruction and strategies on how to THINK SMART like a math learner vs. group that had more math instruction.
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.”
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!*

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.

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

STOP AND DRAW: Non-linguistic representations help cement learning

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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
Talk About It!

- Turn and talk to your Chat Chums.
- Based on what you just learned, describe how you are metacognitive about exercising or eating right.
- Here’s my example…

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

Meet with Your 12:00 Partner

- What do you currently do to teach students to be metacognitive? How can you deepen your work to intentionally and transparently teach them to be metacognitive?

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

If you give a man a fish he will eat for a day.
If you teach a man to fish he will eat for a lifetime.
If you teach a child to fish he may feed the world
-- Chinese Proverb
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.

Talk About It!

- What did you hear me say and see me do as I taught this strategy to you?
- Why do you think I did these things?
- Share.

Apprenticeship Learning

Gradual Release of Responsibility

“I do - We do – Two Do-You do”

Explicit Instruction and Modeling
Guided Practice
Independent Practice
Application
In some co-taught classrooms ...

**TEACHER RESPONSIBILITY**

Focus Lesson

“I do it” (One Teacher)

STUDENT RESPONSIBILITY

You do it alone

Focus Lesson

“I do it”

STUDENT RESPONSIBILITY

You do it alone


The “Good Enough” Classroom

**TEACHER RESPONSIBILITY**

Focus Lesson

“I do it”

Guided Instruction

“We do it”

STUDENT RESPONSIBILITY

You do it alone

Collaborative

“I do it”

STUDENT RESPONSIBILITY

You do it alone


Scaffolding a Bike Ride

**TEACHER RESPONSIBILITY**

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You do it alone


**Scaffolding a Bike Ride**

Get on this bike and ride it.

This is how you ride a bike, watch me. Now you do it.

No Explicit instruction
No Scaffolding

This is how you ride a bike. Watch me do it. Now, I’m going to have you try it on this bike that has training wheels.

Explicit instruction
No Scaffolding

Explicit instruction
Scaffolding
Do you model and scaffold thinking skills?

*Intentional and Transparent*

- Talk, process and think deeply.
- Watch me talk, think and process deeply.
- This is why it’s important to be able to talk, think and process deeply in school and in life. I will show you ways that work for me and others. You will share your ways, too. Together, we will build skills to do this all year.

No Explicit instruction
No Scaffolding

Explicit instruction
Scaffolding

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What IS Our Goal…

- **EMPOWER**
- **NOT**
- **ENABLE**

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If Researched-Based Strategies aren’t working…

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

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Make Thinking Visible

THINK ALOUDS
Strategies for Helping Students Develop Internal Control

- We need be transparent, model and practice the use of internalized “self-talk” as a means of increasing awareness of self-regulation strategies and when and how to use them
- George McCloskey

Think Alouds

- Teachers model aloud their own metacognitive processes for struggling with learning and getting unstuck.
- When modeling your thinking about learning, be sure to talk through how you monitor and adjust your thinking.
- As students catch on to the idea of thinking aloud, have them talk through and share their own learning processing.
- Mental modeling helps students see how good learners comprehend reading, develop writing ideas, problem solve intentionally and transparently, make thinking visible
Think Alouds

• THINK ALOUDS ARE IN FIRST PERSON
• Look at Page 14. What strategies do you students need to think deeply?
• Exit Cards: Have students self assess their use of strategies.

Three Finger Self-Assessment

How much do you have students involved in self-assessing in your classroom?

We must constantly remind ourselves that the ultimate purpose of evaluation is to have students become self evaluating. If students graduate from our schools still dependent upon others to tell them when they are adequate, then we’ve missed the whole point of what education is about.

-- Costa and Kallick, 1992
The purpose of anchor charts is for students to have ownership over their learning and to “anchor” unknown topics to their own experiences. They are created as a teacher presents a mini-lesson and then referred back to over a lesson, unit or even year.
Make Thinking Visible
Learning Logs

Map, Draw, Flip

Chat Chums
Knee to Knee
Eye to Eye

Two Minutes: How do you or will you make thinking more visible in your classroom?
*Modeling and Scaffolding
*Think Alouds
*Anchor Charts
*Learning Logs
Take a ____ Minute
Stretch Break

Mindsets

Make Thinking Visible
Growth Mindsets

Our Goal…
• EMPOWER
NOT ENABLE

Pg. 24-26
Dweck’s findings: Two Mindsets

Fixed mindset:
- Intelligence and talent - fixed
- Inate talent creates success
- Effort will not make a difference
- You either get it or you don’t
- LOOK GOOD AT ALL COSTS

Growth mindset:
- Intelligence can be developed
- Brains and talent are just the starting point
- Enjoy effort and process of learning
- You can always grow and learn
- LEARN AT ALL COSTS

Dweck’s Research Shows…
- 7th Graders Struggling
- Group One Intervention: Study Skills Training
- No statistically significant change
- Group Two Intervention: Mindset Discussion and, then, Study Skills
- Group Two Grew!

If we want to grow their skill set, we must also shape their mindset!

Winning Formula for Success in You and Your Students

Mindsets plus Skill Sets equals RESULTS!
If you are going to develop growth mindset learners...

- Intentionally and transparently teach students about growth mindsets and how the brain works
- Share lots of examples of Growth Mindsets in Action. (See Kathleen’s You Tube Channel)
- Make growth mindset talk visible with Anchor Charts
- Talk the talk ALL the time, EVERYONE! Make Growth Mindset Thinking Visible

Teach Kids About Their Amazing Brains!

Carol S. Dweck, Standford University
www.brainology.us

“The growth mindset confirms the new research which reveals that intelligence can be developed, and expertise can be built by means of deliberate practice.”

www.inspiringlearners.com 2011

Teach About Mindsets

- Fixed mindset – ability cannot change
- Growth mindset – ability can change (grow) with effort
Practice, Practice, Practice!

From neuroscience we know that...

Neurons that fire together Wire together!

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Examples of Growth Mindsets
(See Kathleen Kryza’s You Tube Channel for more…)

Growth Mindset Man

• Michael Jordan quote, “I’ve missed more than 9,000 shots in my career. I’ve lost almost 300 games. 26 times, I’ve been trusted to take the game winning shot and missed. I’ve failed over and over and over again in my life. And that is why I succeed.”

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Praise for Specific Effort

- Effective coaches don’t praise for winning the game or meet, they praise the specific behavior that the athlete developed that improved his/her game.
- We need to teach ourselves to praise students for specific behaviors that improved their learning

Self-Assess on Mindsets:
Kids need to internalize that Mindsets Plus Skill Sets Equal Results

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<thead>
<tr>
<th>Mindset</th>
<th>Rubric</th>
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<tbody>
<tr>
<td>Growth</td>
<td>I worked on the task until they are finished. I saw difficulties as opportunities to strengthen my understanding.</td>
</tr>
<tr>
<td>Fairly</td>
<td>I worked on the tasks until they are finished. I tried even when it was difficult.</td>
</tr>
<tr>
<td>Fixed</td>
<td>I put some effort into tasks, but I stopped working when it became difficult.</td>
</tr>
<tr>
<td>Skill Set</td>
<td>I did not try.</td>
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www.inspiringlearners.com 2011
Time to Ponder

Placemat Synthesis

Define Growth
Mindsets

Placemats
Common Core Connections
- Think about things from multiple perspectives
- Use logic and knowledge to formulate opinions
- Articulate and defend their positions
- Read and write at high levels with purpose and clarity
- Apply what they know to solve authentic problems
- Work collaboratively with others for a common purpose

Let’s Unpack Thinking Routines Used Today
Skill Sets = Strategy Instruction

• Chunking and Chewing: For every ten minutes you teach something new, the brain needs one or two minutes to chew.
• Helping Children Learn: PASS Strategies
• SIMS
• Visible Thinking
• KRISS
• Reading Apprenticeship

Teach Them To THINK
Then Teach Test Taking as a Genre

Teaching Students How to Think: Test Sense

The way to grow students who have test-sense, is to explicitly teach them the skills, procedures, strategies and processes that good test takers use. Only through explicit instruction will students own and be able to transfer necessary skills to the test taking situation. Denstaedt, Kelly, Kryza, 2008
Winning Formula for Success in You and Your Students

Mindset plus Skill Sets equals RESULTS

When we teach students how to think, we save them (and ourselves!) from a life of dreary drill and kill cramming. We empower them to know what to do when they don’t know!

Let’s use the CCSS to grow learners who are...

- Empowered
- Test Ready
- Deep Thinkers
- Life Long Learners
- Miss Bonkers was RIGHT!
One More Version…

“Teach a man to fish and you feed him for a lifetime. Unless he doesn’t like sushi—then you also have to teach him to cook.”

—Auren Hoffman, Herald Philosopher