EMPOWER!
Cultivating Curious, Risk-taking Learners in Your Differentiated Classroom

Kathleen Kryza
Chief Inspirational Officer, Infinite Horizons
www.kathleenkryza.com
Please Stand if…

- You are a primary teacher (K-5)
- A middle or high school teacher. (6-12)
- Affiliated with a college or university
- Technical School
- Educational administrator
- Psychologist, therapist or other counseling specialist.
- Other

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This is a Risk-taking, Mistake Making Classroom

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Let me tell you a little story ‘bout a gal named Kate. Who came into the US ‘cause her folks did immigrate. From Poland and from Scotland, they did come across the sea. Then they moved to Fenton, Michigan to raise a family. (Small town. Not diverse. We were WEIRD!)
The Kathleen Story

Well the next think you know, ole Kate she’s teaching school
She saw too many kids who didn’t think that school was cool

They didn’t learn like all the rest, they could not succeed.
So she had to DIFFERENTIATE to meet their learning needs

(EMPOWER that is. Every Child, is UNIQUE!)
So now it’s time to share with you just how it can be done.
To reach all kinds of learners and to make your teaching fun.
You’ll get lesson plans, assessment tips and practicality,
To grow your teaching practice in this here locality.

(Singapore, Amazing Country!)
Turn your brains on. Y’all get ready, y’hear!)
Kathleen’s Teaching Journey

Secondary & Elementary Classroom Teacher

Special Education

Talent Development

Multicultural Learners

Juvenile Delinquents

Adjunct Professor

Teacher of Teachers

Teacher Researcher

My Intention:
To open the hearts, nourish the minds, and 
inspire the spirits of learners and teachers.

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Our Goal in a Differentiated Classroom…

● EMPOWER

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See Any Kids Like This…

Do You have students who...

• Want you to tell them exactly how you want them to do things?
• Don’t believe in their abilities?
• Have too much faith and not enough reality about their abilities?
• Have parents who do too much for their children?
A growing body of research indicates that many children start school not ready to learn not because they do not know their letters or numbers but because they lack one critical ability: the ability to regulate their social, emotional, and cognitive behaviors. Current research shows that self regulation – often called executive functioning – has a stronger association with academic achievement than IQ or entry-level reading or math skills.
Our 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.”

- What is our goal…

• **EMPOWER NOT ENABLE**
Singapore Educational Mindset

We have to build our inner world, so that we may shape our outer world. This is critical, if we want to play our part in developing a culture that is not narrowly focused on testing our children, but on helping them to learn and enjoy learning, whichever school they may be admitted to and whatever educational pathway they choose.

- Pak Tee Ng National Institute of Education (NIE), Nanyang Technological University (NTU), in Singapore.
Wedding the Art and Science of Teaching: Theory Into Reality
Routines, Procedures and a BIG IDEA

- Sound of Coming Together
- Chat Chums

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Let’s Chat!

• Sit Knee to Knee, Eye to Eye
• Decide who is Chat Chum A and Chat Chum B
  • Share…
    • Your Name
    • Where you are from and your job
    • What brings you here
    • Have you challenged yourself lately? How?
Our Goal in a Differentiated Classroom…

- EMPOWER

NOT

ENABLE
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.
Winning Formula for Success

Mindsets plus Skill Sets equals RESULTS!
Mindsets
Take Note:
How Do You Feel When You See These Pictures…

- You will see 10 pictures.

- As you see each picture, jot down your first reaction with a plus or a minus sign.

- Do you feel pleased, excited, happy? Curious? This looks like fun. I CAN DO THAT!

- Do you feel ANXIOUS, displeased, unhappy? Not interested? This does not look like fun. I CAN"T DO IT.
HOW TO WRITE A NOVEL IN A MONTH

AND LIVE TO TELL ABOUT IT
\[ \int \frac{f'(x)}{f(x)} \, dx = \ln |f'(x)| + C \]

\[ \int \frac{1}{a^2 - x^2} \, dx = \frac{1}{2a} \ln \frac{a+x}{a} + C \]

\[ \int \frac{1}{\sqrt{a^2 - x^2}} \, dx = \arcsin \frac{x}{a} \]

\[ \int \frac{\sqrt{a^2-x^2}}{dx} = \frac{x}{2} \sqrt{a^2-x^2} \]
Fixed or Growth Mindset?

- Count how many times you responded with a positive and how many with a negative.

- If you responded to half or more with a negative reaction, you may have a tendency to live from a fixed mindset rather than a growth mindset.

- Good News! You can change your mindset AND your students’ mindsets as well!

- Let’s learn more about the science of Mindsets, then we’ll learn the art of teaching students about Mindsets.
Dweck’s findings: Two Mindsets

Fixed mindset:
- Intelligence and talent are fixed
- Innate 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**
How does having a FIXED MINDSET impact
Struggling Learners?
Gifted Learners?

ILS: STOP AND TALK: The brain retains 50% through talk

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I remember often being praised for my intelligence rather than my efforts and slowly but surely I developed an aversion to difficult challenges. Most surprisingly, this extended beyond academic and even athletic challenges to emotional challenges. This was my greatest learning disability – this tendency to see performance as a reflection of character, and if I could not accomplish something right away, to avoid that task or treat it with contempt.
Dweck’s Research Shows…

- 7th Graders Struggling in Math
- 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 students **skill sets**, we must also shape their **mindsets**!
If you are going to develop growth mindset learners…

- Intentionally and transparently teach students about growth mindsets and how the brain
Teach Kids About Their Amazing Brains!
“The growth mindset confirms the new research which reveals *that thinking skills can be developed*, and expertise can be built by means of deliberate practice.”
The Brain is COOL!

Let’s See How YOUR Brain is Wired, Dude!
Mindset Review

- **Fixed** mindset – ability cannot change

- **Growth** mindset – ability can change (grow) with effort
Practice, Practice, Practice!

THE TALENT CODE
UNLOCKING THE SECRET OF SKILL IN SPORTS, ART, MUSIC, MATH, AND JUST ABOUT ANYTHING

Malcolm Gladwell
author of the New York Times bestseller *Lance Armstrong’s War*

Outliers
Why Some People Succeed and Some Don’t

Malcolm Gladwell

*1 bestselling author of Blink and The Tipping Point*

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Growing Dendrites = Learning
“I am neither clever nor especially gifted. I am only very, very curious.”

- Albert Einstein
From neuroscience we know that…

Neurons that fire together Wire together!
If you are going to develop growth mindset learners…

- Intentionally and transparently teach students about growth mindsets and how the brain

- Share lots of examples of Growth Mindsets in Action. (See Kathleen’s You Tube Channel)
Growth Mindsets in Action

(See Kathleen Kryza’s Infinite Horizons You Tube Channel for lots more videos)
Who do you know from Singapore, Past or Present, who models Growth Mindsets?

Could also be a person in a book, movie, song...

ILS: STOP AND TALK: The brain retains 50% through talk

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- Make growth mindset talk visible with Anchor Charts

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What Can You Say To Yourself When Learning Gets Hard?
My Brain Grows!

When I work hard my brain grows,
All my effort really shows,
I love learning, I love school,
When I use my mighty tool,
When I work hard my brain grows,
All my effort really shows!
Anchor Charts: Making Thinking Visible

Mindsets

When Things are Challenging for you
What do you say to yourself?

Think! Think!
This looks impossible—but, I CAN do this!
Slow Down—Try to figure these things out
Keep Trying!
Come on—You can do it!
You’ve done this before—it is not that different!
I can’t do it....

Skill Sets

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

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This is a Risk-taking, Mistake Making Classroom

You can get a copy of this poster at www.kathleenkryza.com
If you are going to develop growth mindset learners...

- Intentionally and transparently teach students about growth mindsets and how the brain

- 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!
Vygotsky (1978), it is that “children grow into the intellectual life around them” (p.88),

Speaking is as much an action as hitting someone with a stick, or hugging them (Austin 1962)
Dweck’s Studies on Praise

<table>
<thead>
<tr>
<th></th>
<th>Praised for effort</th>
<th>Praised for ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>goals</td>
<td>90% of the group created learning goals</td>
<td>66% of the group created performance goals</td>
</tr>
<tr>
<td>enjoyment</td>
<td>continued</td>
<td>decreased</td>
</tr>
<tr>
<td>persistence</td>
<td>continued</td>
<td>decreased</td>
</tr>
<tr>
<td>performance</td>
<td>improved</td>
<td>declined</td>
</tr>
<tr>
<td>lied about scores</td>
<td>one individual</td>
<td>40%</td>
</tr>
</tbody>
</table>
Promote Growth Mindsets: 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.
Specific Praise Helps Us Know what do to Next Time…

Example 4: “Good job. Jackson. Keep it up.”

Example 3: “You really did a good job working through all of the steps and checking your answers for this problem. Last week when the math was confusing to you, you gave up and just wrote down any answer even if it wasn’t correct. This time you didn’t give up on yourself and your effort made all the difference. You must be proud of yourself!”

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Choice Words Create Internal Locus of Control

• “I bet you’re proud of yourself!”

Invites a child [teacher] to attend to internal feelings of pride, building upon the sense of agency, and at the same time attaches an internal motivation to the activity
Choice Words Create Identity

- *Refer to your students as scientists, writers, mathematicians, etc.*

Identities provide students [teachers] with a sense of their responsibilities, and reasonable ways to act, particularly toward one another and toward the object of study.
### Before Learning
- Today you might find there are some things that are new to you and you are going to get to grow from trying them.
- Does this remind you of something you’ve done before? How can you use that experience to help you with this new learning?
- Looking at today’s work, what part do you think will be the most challenging for you? What can you do when learning gets to the GOOD part (the hard part) to help you continue learning?

### During Learning
- What parts are going well? What parts are making you grow?
- Why do you think this part is challenging for you? What do you need to help you? Do you need more information? More practice? A different way to practice?
- Have you done something like this before? What did you do when it got hard? Can you do it again?
- What do you know about yourself as a learner that can help you continue learning?

### After Learning
- How did you grow as a learner?
- Did you learn something new about yourself and how you learn?
- How can you use that in the future when something gets tough?
OWN IT!
Empowerment
STUDENTS AS EMPOWERED, ENGAGED, SUCCESSFUL LEARNERS

- When students self-evaluate how much their dendrites have grown, they see that they are in control of their learning.

- They know their learning (ceiling level) increases as they put in more time and effort.

<table>
<thead>
<tr>
<th>ceiling level</th>
<th>ceiling level</th>
<th>ceiling level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little time and effort</td>
<td>More time and effort</td>
<td>Even more time and effort</td>
</tr>
</tbody>
</table>
Self – Assess on Mindsets:

**Kids need to internalize that Mindsets Plus Skill Sets Equal Results**

<table>
<thead>
<tr>
<th>A - EFFORT RUBRIC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4 (Growth Mindset)</strong></td>
<td>I worked on the task until they are finished. I saw difficulties as opportunities to strengthen my understanding.</td>
</tr>
<tr>
<td><strong>3 (Fairly Growth)</strong></td>
<td>I worked on the tasks until they are finished. I tried even when it was difficult.</td>
</tr>
<tr>
<td><strong>2 (Somewhat Fixed)</strong></td>
<td>I put some effort into tasks, but I stopped working when it became difficult.</td>
</tr>
<tr>
<td><strong>1 (Fixed Mindset)</strong></td>
<td>I did not try.</td>
</tr>
</tbody>
</table>
Primary Aha’s

I'm here
I'm giving up
I'm thinking
I'm thinking
I'm thinking

If you believe in yourself, you can do anything. So use your fear.

K stop

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Your Self Talk Matters: Stop and Plan

- Come up with some ways you can talk with children in your world about the power of positive talk in their lives.
- What words will you use?
  - Ponder
  - Grit
  - Grapple
More Mindset Strategies
www.kathleenkryza.com

See the last page of your handbook to sign up for our newsletter

Developing Growth Mindsets In the Inspiring Classroom

Give it a Go Guide

inspiring Learners

Kathleen Kryza, Alicia Duncan, Joy Stephens

www.inspiringlearners.com

www.kathleenkryza.com
LET’S TAKE A BRAIN BREAK

The brain needs time to process!

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

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Let's experiment! True or False?

1. Students learn the most from listening to lectures. **False**
2. Test scores increase if we teach less information more deeply. **True**
3. Students retain information longer if they connect the idea to something they already know. **True**
4. Binet’s IQ test was designed to measure a child’s fixed intelligence. **False**
Brain Peaks!

Fixed
Right or Wrong?

Growth
Right or Wrong... Why?
Skill Sets
POOR PLANNING
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?
Achievement went up when students were taught to be metacognitive and how to THINK SMART like a math learner vs. group that had more math instruction.
Planning

Teaching Students About Planning

How Learning Depends on Planning Ability

The purpose of education is certainly to provide students with knowledge and skills, but researchers have found that children also need to learn how to learn. To achieve that goal, we must teach students to evaluate, apply solutions, self-monitor, and self-correct—in short, to plan their work and use plans to solve all types of problems. When we teach our students to become strategic, self-reliant, reflective, and flexible learners, we are teaching them a method called Cognitive Strategy Instruction (Scheid, 1992), and this is an effective method.

When reading, and especially when obtaining meaning from text, the student must plan an approach to examining the information that is provided. This involves using strategies to separate the important from the less important part of the text, concentrate on the details, self-monitor, and self-correct as needed. Students who are good at writing organize their goals before beginning and reflect and revise during and following production of the text. When doing math, students who are successful evaluate the problem, choose which method to use to solve it, evaluate the success of that method, change methods if necessary, and check the final answer carefully. This is also sometimes referred to as metacognition, problem solving, strategic behavior, or a self-reliant learning style. When we use cognitive strategy instruction, we are teaching students to think about what they are doing so that they can be more successful.

Importantly, these descriptions of how to learn, and the cognitive strategy instruction approach in general, are descriptions of the behaviors associated with the cognitive processing ability called Planning in this book (see the Planning Explained handout, p. 55). In order to help students be more successful, we must teach them to be more thoughtful.

How to Teach Planning

Think smart and use a plan!

I figured out how to do it!

Use a plan.

Figure 1. A drawing that helps students remember to use a plan.

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

Jackie S. Iseman\textsuperscript{1} and Jack A. Naglieri\textsuperscript{1}

Abstract

The authors examined the effectiveness of cognitive strategy instruction (i.e., Successive) given by special education teachers to students with ADHD. The experimental group were exposed to a brief cognitive strategy instruction on development and application of effective planning for mathematical computations on a standard math instruction. Standardized tests of cognitive processes and math skills were administered pre- and postintervention, and at 1 year follow-up. Large pre–post effect sizes were found for students in the experimental group completing math worksheets (0.85 and 0.26), Math Fluency (1.17 and 0.09), and Numerical Operations (0.97 and 0.14). At 1 year follow-up, the experimental group continued to outperform the control group. Students with ADHD evidenced greater improvement in math worksheets (0.85 and 0.26), Math Fluency (1.17 and 0.09), and Numerical Operations (0.97 and 0.14) than students with LD. This improvement was apparent 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
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?
Students Metacognitive 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!*
Make Metacognition Visible
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.
STOP AND DRAW: Non-linguistic representations help cement learning.

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

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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.

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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.
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
Learning to do well in school isn’t magic....
When you are Metacognitive, you...

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

- 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**
Think SMART!
Stop and THINK
Make a PLAN
Take Action!
Review/Reflect/Revise
Ta da! (or) Try Again

Developed by Naglieri and Kryza, 2014

www.kathleenkryza.com
It’s not Magic, It’s Metacognition!

Think SMART = Success!

www.kathleenkryza.com
OWN IT!
Empowerment

www.kathleenkryza.com
Elementary Thinking Smart!

Never give up!

Prefrontal Cortex

Part of brain where you think.
Your brain can grow bigger.

I'm thinking about my thing.
Learning to EMPOWER our students isn’t magic…. Now you have the formula!
Winning Formula for Success

Mindsets plus Skill Sets equals RESULTS!

www.kathleenkryza.com
Empower! Don’t Give Up!

www.kathleenkryza.com
Thank you for sharing and learning with me!

Kathleen Kryza, CIO, Infinite Horizons
www.kathleenkryza.com
Teacher Resources

- Article: You Can Grow Your Intelligence
- [www.brainology.us](http://www.brainology.us) - website to teach students how the brain learn (elementary appropriate)
- Grow Your Brain
  - Audio summary of an elementary school-wide effort to teach growth mindsets
- Grow Your Brain
  - Video from PBS (middle/high school appropriate)
- Teacher Background Information
  - Doing What Works: US Department of Education
Teacher Resources

- Michael Jordan, JK Rowling, Bill Gates, Will Smith
What is your mindset . . .

- About Your Students?
  - Fixed mindset message: “You have permanent traits and I’m judging them.”
  - Growth mindset message: “You are a developing person and I am interested in your development”...
When Thomas Edison was a boy, his teachers told him he was too stupid to learn anything.

Albert Einstein had problems with simple math calculations (He also had delayed speech and reading).

Winston Churchill failed the sixth grade.

Verner Von Braun, developer of the Saturn Rocket, flunked 9th grade algebra.

Isaac Newton did poorly in grade school.

Leo Tolstoy flunked out of college.
STUDENT CHOICE VERIFICATION FORM
Non-Completion of Assignment

I, ________________________________, have chosen not to participate in the following classroom CHEW activity:

Due Date: _____________________________.

I understand that by making a fixed mindset choice, I will not be engaged in the learning process and thereby will not be building neural connections that can improve my learning.
I understand that by making this choice I may be less prepared to handle the rigors of our competitive society.
I understand that by choosing not to do this CHEW activity I may be less likely to succeed in this course and in life.

In signing this document, I acknowledge that I understand the consequences of choosing not to participate.

Student Signature: _____________________________

Date: ______________
Stuck on the Escalator

“A student in 4th period was working in her Chemistry class spontaneously said, “Man, I am stuck on the escalator” even though that phrase is not used in Chemistry class. I took this as evidence that the (cuing) skills being learned in one class are transferring to another. It is encouraging.”