Brain-Based Learning:
Strategies and Techniques for Boosting Your Students’ Brain Power

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Our Goals and Expectations:

• Explore the research behind whole-brain learning and teaching

• **Practice** implementation and use of brain-based instructional movements

• **Plan** for implementation of brain-based instructional techniques
We Need You!
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Getting to know you... and your students!

Stop and Jot...

Take a note card and write down strategies and techniques you use to get to know your students at the beginning of the year.

Have you found there to be a diverse group of learners in your room?
Brain-Based Teaching: What is it?

- Activates both hemispheres of the brain
  - **Right**: creative; holistic thinkers; big picture learners; appreciation for arts
  - **Left**: learners are logical, analytical (math and science)

  *What types of learners do you have in your room?*

- Makes connections for students
- Makes work more meaningful
- Helps short, working and long-term memory
- Boosts attention levels and student engagement

“Worksheets don’t grow dendrites!”
Brain-Based Learning: Activating Various Types of Memory

- Sensory Memory
- Working Memory
- Procedural Memory
- Declarative Memory
-Sensory Memory-

• When moving toward long-term memory, you want to start with some sort of sensory hook

  ➢ Music (content-related songs, etc.)

  ➢ Smells (mints, cinnamon, lemon, etc.)

  ➢ **Activate the five senses

  **Be cognoscente of the types of learners in your room.

  **Don’t create an environment that is too stimulating to the senses…
-Working Memory-

• Within 18 seconds, students decide whether to discard information or keep it in long term memory

“\[\text{The ties on loaves of bread are color coded based on what day of the week they were delivered.}\]”

• Unless information connects to previously learned content, we lose it…
  - Think of a filing cabinet
  - Schema: connect information learned to what we know

-We Grow Dendrites our Whole Life-
Procedural Memory: How?

The Start of Class:

- How do you start class?
- Do you go over class rules?
- Do you review homework?

Switch!

Get up and talk to someone NEW about how you start class everyday. When we say switch, go and share with someone new.

Procedural Memory states that after routines, you should transition into review and practice:

- Expectations should be clear
- Steps and objectives should be clearly visible
Declarative Memory: What?

- Activated when you start learning
  - Today’s content should be a part of your declarative memory
  - Keep in mind: Focus activities should be SHORT
  - Focus for the age of the learner in minutes +/- 2-5 minutes
    - For a 10 year old, focus time is about 10 minutes
    - Maximum amount of focus time for all information should be 20 min.

- Where new information and new content is stored

As a teacher, how does knowledge of the memory systems affect the planning and delivery of your instruction?

-Think, Pair, Share-

Does anyone recall what our “working memory” piece of information was?
The Theory Behind Whole-Brain Teaching

Your brain is represented by your hands clasped together

Prefrontal Cortex (pinkies) “THE BOSS”
Motor Cortex (middle fingers)
Visual Cortex (thumbs)

Traditional Teaching relies upon information delivered primarily by the teacher talking.

Whole Brain Teaching and Brain Based Teaching relies upon all of the other parts mentioned above to teach and involve students in learning, including…
The Theory Behind Whole-Brain Teaching

Look at your LEFT “brain”

Outside left pinkie knuckle: this is the Broca's Area responsible for language production

Outside left middle finger knuckle: this is the Wernicke's Area responsible for understanding written & spoken language

Palms of each hand: this is the Limbic System. This system houses several smaller parts of the brain and is responsible for emotion, behavior & long-term memory.
Whole-Brain Teaching and Learning -

Seven Basic Components:

1. Class? Yes!
2. Five Classroom Rules (Sensory Memory)
3. Teach – OK!
4. Scoreboard (Levels)
5. Hands and Eyes
6. Mirror
7. Switch

http://wholebrainteaching.com/
Whole-Brain Teaching and Learning

Class? Yes!

Does your class always comply when you say “quiet down?”

Simply say “Class?” and require the students to respond with the same tone and intensity that the “Class” was delivered in.

*Activates the neo-cortex, or the area of the brain in charge of decision making.

Five Classroom Rules

1. Follow directions quickly
2. Raise your hand for permission to speak
3. Raise your hand for permission to leave your seat
4. Make SMART choices!
5. Keep your dear teacher happy 😊

*The brain learns in FIVE ways – seeing, touching, hearing, doing, and feeling. When teaching the rules with the intended motion, the brain is maximally operative.
Whole-Brain Teaching and Learning

Teach – OK!

Engages your students in all four learning modes: seeing, saying, hearing, and doing.

**Step 1:** Divide the class into two teams - #1’s and #2’s

**Step 2:** Present a small amount of information, complete with gestures

**Step 3:** Clap two times and say “Teach”; Your students clap twice and say “OK!”

**Step 4:** Move around the room as students teach one another

**Step 5:** Repeat the activity with the next small group of points

“Tell me and I will forget, teach me and I will remember, involve me and I will learn.”
- Ben Franklin

Scoreboard at a Glance
Whole-Brain Teaching and Learning

**Hands and Eyes**
- Whenever you want students to pay close attention to an important point, simply say “Hands and eyes!”
- Students should respond “Hands and eyes!”

**Mirror**
- You say “Mirror” and your students mimic your gestures
  - Casual: natural gestures
  - Graphic: gestures that match what you are saying (i.e. walking)
  - Memory: link gestures to core concepts — UNIQUE!

**Switch**
- Use switch to turn chronic talkers into chronic listeners
- Use in conjunction with “Teach, OK!”
Whole-Brain Teaching in Action

Karen Woodring: Olean City School District

Upper-Level Example: with Chris Biffle

Four Corners:
Share with your job alikes how you could use this in your setting? Write some ideas down on chart paper...

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<th>Elementary Teachers: 1</th>
<th>Middle School Teachers: 2</th>
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On the template, narrate how you could initiate this in your own classroom with your students.

**You will PRACTICE with your “job alikes,” modeling how you may begin this work with your own class.
-SPRINT!-

Think about this:

How does this connect to the Common Core?

What’s the overlap between the Sprints and Brain-Based Learning?
-Lunch-

Who would fall for that old trick?
Brain Boosters: Strategies for Promoting Student Engagement and Increased Attention
Brain Boosters: Why Use ‘Em?

When to Use a Booster?

• Transitions
• Before long work time
• Before and after assessments
• To calm down
• Pick Me Up

Why Use a Booster?

• Class reward
• Mix things up during content lessons
• Wait Time
• …and more…
Brain Compatible Strategies for the Senses and Sensory Memory

-Aromas/Taste in Learning-

• Smells affect the limbic area of the brain, responsible for attention

• Ever notice the smell of popcorn emanating through the halls?
  ➢ The sense of smell gets quicker, uninterrupted and unfiltered access to the brain
  ➢ You will actually react to an aroma before you have a conscious awareness that you’ve inhaled them

Allow students to have water bottles in class
Bring Lemon, Cinnamon and Peppermint into the classroom
Use fans, air fresheners, ionizers, etc.
*Be respectful of those with allergies.
Brain Compatible Strategies for the Senses and Sensory Memory

-Visuals in Learning-

- As we think, we learn and grow, making individual connections from one cell to another through dendritic branching

- The process of learning is enriched by making more associations, on more levels, to more things, people and experiences

**In the classroom...**

“Jump Start” topics through review what was learned in a fun, quick game

Create conceptual maps of what is known about a topic before learning

Use graphic organizers!

Create concept maps to pull together all the learning on a topic in a particular way

Things to consider: lighting and color
Brain Compatible Strategies for the Senses and Sensory Memory

-Feeling in Learning-

• Good games encourage problem-solving, cooperation, self-discovery, and physical movement

• A simple “ball toss” gives you the ability to think quickly in a safe environment, with novelty and fun

In the classroom...

With children: Start or continue a story, do spelling, give affirmations/compliments, presidents, etc.

With adolescents: Take opposing ideas on a topic; invent test questions; introduce yourself; review content; problem/solution; brainstorming

With teens/adults: tell history of an event; give new vocabulary for a concept; idea development; etc.
Brain Compatible Strategies for the Senses and Sensory Memory

-Hearing in Learning-

- Music can change and energize our brain
- Listening to music can boost intelligence

In the classroom...

Play positive, energizing music before the start of class

Play low volume background music to soothe, calm and relax

Play special musical selections to close class

Tie music to content being taught
Brain Breaks and Brain Gym:
Activating both hemispheres through physical movement
Brain Breaks and Brain Gym

• Quick and easy movements that engage students mentally and physically

• Beneficial for students who need to get their “fidgets” out

• Young students have attention spans of only a few minutes, so frequent physical stimulation and exercise breaks offer change of pace
Brain Gym:

Brain Gym is based on the idea that learning comes from the natural activity which goes on throughout our whole lives...

Mix the intellectual with the physical

Energize the class with some activity!

Cross Crawls

Lazy Eights
Brain Gym:

Double Doodle

The Elephant

The Owl
Brain Gym:

The Active Arm

The Gravitational Glider

The Rocker
Brain Gym:

Buttons

The Thinking Cap

Hook Ups
Brain Gym: The Energetic Yawn
Brain Breaks:

Focus Ball
Bring your finger tips together in front of your chest to make a ball, then lift it toward your head, bending all finger joints and breathing.

Greet and Meet
Have kids introduce themselves and shake hands with four other people.

*Start your day off right!
Brain Breaks:

**Belly Breathing**
With hands on your belly, breathe in deeply and feel the belly go out, then exhale, feeling the belly go back in...

**Hand Knot**
Requires 2+ people to face each other and grasp each other’s wrists until you make a knot. One person starts by squeezing the other person’s hand. The squeeze travels around 3-5 times.

**Ear Rub**
Simply rub the lobes of your ears...

LOOK at the *Brain Breaks for the Classroom Packet*

Work with a partner to choose one “break.” Practice it and be prepared to teach it to the group.

**They are all described on the last pages of the packet**
Sensory Kits: For Kids of All Ages

• **Fidget kits** are used to help children, teenagers, or adults focus and maintain attention during challenging activities such as learning in a classroom setting or seminar.

• **Fidget kits** should contain sensory items that help maintain attention and focus but do not distract the person from learning or distract others in their environment.
Make and Take

Make a set of “brain breaks” for your classroom...

When finished, please fill out the feedback form.
Lauren Stuff & Tessa Levitt

Questions? Comments?

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