Secondary Active Classroom Strategies

Scott Miller
Paul Zientarski
Naperville, Illinois
smiller@naperville203.org
Benefits of Physical Activity: PE, Recess, and Classroom-based PA

Cognitive Skills and Attitudes
- Attention/concentration
- Self-esteem
- Creativity
- Perception of academic or intellectual competence/self-concept
- Perceived self-concept
- Impulse control
- Life satisfaction
- Visual spatial skills
- Working memory

Academic Achievement
- Achievement test scores
- Grades/grade point average

Academic Behavior
- Conduct
- “On task” (not fidgeting)
- Attendance

Here Comes A Big Take Away Moment!
Average composite of 20 student brains taking the same test

Brains after sitting quietly

Brains after 20 minute walk

Research/scan compliments of Dr. Chuck Hillman University of Illinois
Brain Function

Thought Process
A Mind in Motion

Tends to Stay in Motion
Why include movement

- Prepares the brain
- Brain breaks when attention wanes
- Fitness matters exercises
- Develop class cohesiveness team building
- Review content presidents ....example
- Teach content circle/tangents.....example
Which of these was not a President?

• A. George Washington  Hands on head

• B. Thomas Jefferson  Hands crossed at chest

• C. John Marshall  Hands on your hips

• D. William Harrison  Hands holding your ears
Learning Pyramid

- 90%: Teach others
- 75%: Practice doing
- 50%: Discussion
- 30%: Demonstration
- 20%: Audiovisual
- 10%: Reading
- Lecture

Average student retention rates

Source: National Training Laboratories, Bethel, Maine
Memory

☐ It is estimated that students will forget about 90% of what they learned in a lecture class within 30 days.....the majority of this forgetting occurs within the first few hours after class.

☐ A brain can only hold 2 to 3 facts at a time!

☐ A brain will remember about 10% for 3 days add a picture and recall and the rate will jump to 65%
Learning Happens

• Not from neck up but from toes up
• After sitting for 20 minutes or more blood pools in the butt and legs
• You brain says. “You’ve been still for awhile you must be sleeping so your brain shuts off to allow for sleep”
• Write with head, elbows, hips cursive
Brain Function

Thought Process
Why include movement

• Prepares the brain
• Brain breaks *when attention wanes*
• Fitness matters *exercises*
• Develop class cohesiveness *team building*
• Review content *presidents ....example*
• Teach content *circle/tangents.....example*
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- Audiovisual: 30%
- Demonstration: 50%
- Discussion: 75%
- Practice doing: 90%

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Memory

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pigeon  parrot  chicken  rat

bird  fly  run  eat
Attention Span

Typical 5 year old
5 to 7 minutes

Typical 13 year old
15 to 18 minutes

Typical Adult
20 to 25 minutes
Current Research?

Research findings suggest that student concentration during lectures begins to decline after 10-15 minutes (e.g., Stuart & Rutherford, 1978).
ADD & ADHD Statistics

• 1985 about 500,000 students diagnosed
• 2008 5 to 7 million diagnosed
• 2011 1 out of every 10 students diagnosed
• Boys 3 times more likely to be diagnosed with the condition than girls
• 75% boys with ADD have ADHD
• 60% girls with ADD have ADHD
• 65% of all students with ADHD have discipline problems

Statistics from the Institute of Mental Health
"85% of school age children are kinesthetic processors predominately“

Dr. Carla Hannaford

Most students prefer kinesthetically using their senses to discover and explore information.
Neuro-scientists Believe

- Students learn 10% more when they are standing as opposed to sitting.

- Students increase their learning if they are standing and moving by another 3% to 4%
New Designed Classrooms
New Science Labs
A Mind in Motion

Tends to Stay in Motion
Fire Up the Brain

- Rock, Paper, Scissors-Beat-Lose to use this to start class or as a class break

- Use a timed Power Point presentation to review previously learned concepts to start class.

- Quick Math  Add, Subtract, Multiply
Math Operations

Determine the product, quotient, sum or difference

3, 5, 10, 26, 18, 54, 7A

2+3= 6-3= 4×2= 4+2=
Get a pencil and a scratch piece of paper ready for this brain based timed activity. There will be 8 questions.
Ready
1. $\sqrt{121}$
2. \((2)(11)\)
3. \[
\frac{64}{2}
\]
4. \( \frac{14}{14} + 13 \)
5. $2^3$
6. \((3.5)(2)\)
7. $4 + (8)(10)$
8. $33 + 17$
Get Ready to Check Your Answers
Geography Example
Name the State Based on the Outline

You can use abbreviations

PA  CA  IL
Ready ?
3
2
2.
5.
6.
Get Ready to Check Your Answers
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<thead>
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<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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<td>8.</td>
<td>New Jersey</td>
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• Ask questions and then throw a ball at the student you want to respond.
• Snow ball activity to check concepts or create test questions.
• Stand up and pass a wadded piece of paper under your legs...inside out ...outside in and then alternate inside out-outside in.
• Peer editing is done by placing papers on desks and letting students rotate to change papers.
• Show me a positive slope,-negative slope,-parallel lines,-perpendicular lines.
• Throw test papers or returned home work up in the air and let students retrieve their own work.
• Don’t pass out papers. Have students retrieve them from around the room. Place them on the floor.
• Assign or have students choose an action word assigned to a student or group to do when something is read out loud but the class.
• Have students form a line and do addition using the 1st letter of their last name as the relative number from 1-26.
• Use cards to pick teams and have students move around the room to find their teams.
• Assign students to determine when a break is needed.
• Assign students to choose a “Brain Break”
Debate

• PRO

• CON
Kinesthetic Math Lesson
Draw the following shapes

• Secant Line
• Concentric Circles
• Externally Tangent Circles
• Tangent Line
• Internally Tangent Circles

Now check your answers with those around you
The Brain’s Response to Errors

Moser, Schroder, Heeter, Moran & Lee 2011
Summary of Dweck's *Mindset*

**Fixed vs Growth**

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<thead>
<tr>
<th>Ability is static</th>
<th>Ability is developed</th>
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<tr>
<td>Avoids challenges</td>
<td>Embraces challenges</td>
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<tr>
<td>Gives up easily</td>
<td>Persists in obstacles</td>
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<tr>
<td>Sees effort as fruitless</td>
<td>Sees effort as necessary</td>
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<tr>
<td>Ignores useful criticism</td>
<td>Learns from criticism</td>
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<td>Threatened by others</td>
<td>Inspired by others’ success</td>
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Social Science

• Timeline
• Historical classroom
Science

- Periodic Seating Chart
- Element Snowball
Strategies to Re-engage Students

• “If you can hear my voice clap your hands once”

• “Let me see your eyes”

• Use a timer to end the activity
  – Egg Timer
  – Power point timer
  – The wall clock
Re-engagement Strategies continued

- Use a bell or clicker to end the activity
- Stop the activity and have students write a sentence or draw a picture response to the activity.
- Stand up or sit down when finished.
Eventually it becomes a routine