

Physical Activity is Associated with Enhanced Cognition

Advancements in use of fMRI, diffusion tensor imaging (white matter), EEG (ERPs) and biometric measures (VO2 max) have strengthened the neuroscientific rationale for the beneficial effect of physical exercise and fitness on brain development and cognitive functioning in children and adolescents.

43

Let's Do a 1 Minute Alerting Activity

44

CogniTap Desk Moves: Set 1

Toe Floor Taps

L R L R L R L R

L R L R L R L R

1 § 2 § 3 § 4 §

Hand Table Taps

R L R R L R L L

L R L L R L R R

1 § 2 § 3 § 4 §

Sequential

45

Behavior: Building A Prosocial Brain begins with Skill Development

46

Stress, Brain Stimulation and Readiness to Learn

Children need low-stress high caring environments for optimal learning.

Resting state coupling between the amygdala and ventromedial prefrontal cortex is related to household income in childhood and indexes future psychological vulnerability to stress, Hanson et al., 2019.

Poverty as a Predictor of 4-Year-Olds' Executive Function: Poverty and poverty-related stressors are generally associated with higher allostatic load, lower executive function ability, and compromised self-regulation for young children, Raver et al., 2017.

47

Create a Classroom Culture of Kindness, Respect & Trust

What does _____ look like, sound like, feel like?

48

Behavior

It's WHAT WE ATTend To

- Students who "misbehave"
- Student who "act out"
- Students who "want attention"
- Students who "do not pay attention"
- Students with "diagnoses"
- Students who "are a distraction"

49

The ONE Important Thing

98% of the time, it's a skill deficit, it's NOT non-compliance

Trauma	Frustration
Learning Difficulties	Not feeling understood
Violence	Not feeling heard
Miscommunication	Executive Function
Misunderstanding	Dysfunction
Sensory overload	Mood Regulation
Agitation	Self-Regulation
Anger	Motor Skill Deficits

50

The Discipline Trap

Believing we can Consequence children into new prosocial skill sets

The Discipline Trap

Let's Turn Our House Right Side Up! ©2008

51


Damage Control

Waiting for the behavioral disruption to appear before intervening.

Prepare, Partner, Practice and Prevent

Damage Control

When are we in it?



Describe the circumstances or situation.

How do you know you were in damage control?

What were you thinking? What were you feeling? What were you doing?

How did you manage the moment?

What is your plan to stay out of damage control next time?

BLOOM

BEHAVIORAL LEARNING OPPORTUNITIES
BRAINSMARTS

@kidultions @dlynnkerney

52

What the Science Tells Us We Can Do Instead

Understand that there are fundamental skills which precede learning and behavior.


We become Detectives and look at:

- What does the behavior say?
- What are the skill deficits?
- What are the triggers?
- What puts the student into overwhelm?
- What can We do to prepare & prevent?
- What can WE do to remain calm & connected?

ONLY then can we begin to better build a prosocial brain

53

What Time is it?



<div style="background-color: #007bff; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></div> Time to Validate	<div style="background-color: #007bff; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></div> Time to Co-Regulate
<div style="background-color: #007bff; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></div> Time to Empathize	<div style="background-color: #007bff; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></div> Time to teach a New skill
<div style="background-color: #007bff; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></div> Time to Calm Down	<div style="background-color: #007bff; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></div> Time to use a Cue
<div style="background-color: #007bff; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></div> Time to BE the child's Brain	<div style="background-color: #007bff; width: 15px; height: 15px; display: inline-block; margin-right: 5px;"></div> Time to use a pre-determined Strategy

SAY

THINK

DO

54

Build a Pond

Build A Pond

WHAT IS THE POND?
 The pond of good behavior is the place children go to find new thoughts, words and behaviors, when they need a better - more prosocial - choice. Many times a child does not have alternate words or behavior to make a better choice in a situation. When you build a pond of good behaviors, the child can go to the pond and look for a new behavior or words to use for happier family living.

HOW DO YOU BUILD THE POND OF GOOD BEHAVIOR?


Step 1: Get a large poster board, markers and pens.

Step 2: Gather the family together and talk for a moment about how you've been noticing a lot of good happening in your family. Introduce the concept that you want everyone to be a "detective" for a few days and write down all the smart choices family members are making. You'll end up with about 100 behaviors. Let "Helped sister find shoes" and said, "May I help you clean up?" "waited for mom to sit down before dinner," "Shared a favorite toy," "Chose to be calm instead of yelling."

Step 3: Print out and cut out the fish, as a family. Write or draw behaviors on the fish. Do not assign a person's name, simply write down behavior. Next time you face a challenge your child has a place to choose better choices.

Step 4: Now you have a pond in which each family member can "fish" for better behavior instead of being sent to time-out or being punished.

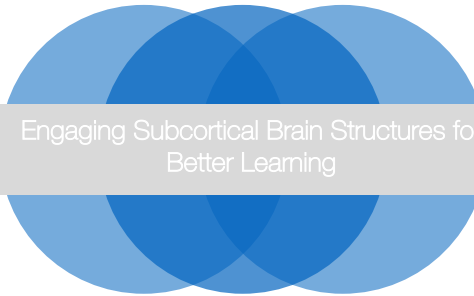
Step 5: Sincerely compliment the specific behaviors.



BLOOM FAMILY WORKBOOK

55

Engaging Subcortical Brain Structures for Better Learning




56

The New Pre-literacy

While we were paying attention to BEHAVIOR we learned through science, that there are important SKILLS that precede behavior. This redefines literacy for education. We learned that there are cognitive, social-emotional, and physical skills that precede both learning and behavior.

- Self-Regulation**, the ability to manage one's internal energy, emotions and impulses.
- Focused Attention**, the ability to maintain attention on a specific target stimulus, long enough to take action on it.
- Working Memory**, the ability to transiently hold and manipulate necessary information for relatively immediate access, in a short period of time.
- Sequencing**, the ability to place content, words, thoughts and actions in order.
- Self Control**, the ability to recognize and resist cognitive and motor impulses sufficiently to take appropriate action in the moment.



THE NEW PRE-LITERACY © Family, 2018

57

PRIME the Brain for Learning

Vestibular
Proprioceptive
Kinesthetic

➔

Balance
Posture
Weight Shift
Beat Competency

58

Our vestibular system is like a gyroscope for the body

Depending on how we move our head (rotation/direction/speed), specialized cells send signals to our brain which then 'informs' our body's reaction

A well-functioning vestibular system:

- Better balance
- Less clumsiness
- Better visual tracking
- Better head-eye coordination
- Smoothly look up at a whiteboard, then down at their work
- Reading fluidly, finding next line of text
- Ball skills
- Better posture and muscle tone
- Language development via integration of visual and auditory senses
- Promotes self-regulation

59

Posture

The Ready Position Song

Pre-K-4th: SAM Songs, Self-Control, Attention Memory, The Kinesthetic Classroom

Head Shoulders Hips and
Knees
Hips and Knees
Head Shoulders Hips and
Knees
Hips and Knees

Chin up tall
Belly in and
Tailbone down

Head Shoulders Hips and
Knees
Hips and Knees

© Kelly Gendron 2018, 2020

60

Proprioception and Kinesthesia

Kinesthetic sense. The ability to know accurately the positions and movements of one's skeletal joints. Kinesthesia refers to sensory input that occurs within the body. Postural and movement information are communicated via sensory systems by tension and compression of muscles in the body.

Proprioceptive senses relay information about the position and movement of our limbs and trunk, the sense of **effort**, the sense of **force**, and the sense of **heaviness**. Receptors involved in proprioception are located in skin, muscles, and joints.

61

We've Got the Beat

62

Let's Count

1	2	3	4
1	2	3	4

63

Let's Clap

1	2	3	
1	2	3	

64

Let's Clap Clap

1	2	3	
1	2	3	



65

Let's Pat

1	2	3	
1	2	3	

66

Let's Clap Pat

1	2	3	
1	2	3	

67

Let's Stomp Right, Left

1	2	3	
1	2	3	

68

Let's Pat & Stomp

1		3	
1		3	

69

Let's Pause

70

Traveling Beats

71

**R
E
S
E
A
R
C
H**

A systematic review of the research suggests that short bursts of fine and gross motor coordinated bilateral physical activity may improve attention, processing speed, and focus, van der Fels et al. 2015.

In a systematic review of research studies on the impact of physical activity on attention, deSousa et al. 2018 observed that continuous exercises that required greater cognitive involvement like activities with coordination and balance were related to a better performance during attention-demanding tasks than continuous exercises with fewer or no cognitive challenges (Budde et al., 2008; Palmer et al., 2013).

Bonacina et al. 2019 reported the use of clapping in time training as a way to possibly affect a broad spectrum of rhythmic abilities that are linked to language and literacy processes.

72

Rhythm, Tempo + Timing

Motor rhythm and timing are precursors to behavioral and academic learning. Further, patterning which is a central element of learning, coincides with tempo, rhythm and timing in both reading and math, Center on the Developing Child - Harvard, 2015.

73


Classroom physical activity benefits students by:

- Improving their concentration and ability to stay on-task in the classroom.
- Reducing disruptive behavior, such as fidgeting, in the classroom.
- Improving their motivation and engagement in the learning process.
- Helping to improve their academic performance (higher grades and test scores).
- Increasing their amount of daily physical activity.

74

Musical Thinking

75



5 SIMPLE STEPS
To Teaching Children
How They Think

The Quick Start Manual


By Lynne Kenney, PsyD

Musical Thinking is a cognitive empowerment strategy utilizing music, movement and rhythm that teaches children how they think and learn helping them gain better control over their approach to daily tasks and activities related to learning and behavior.

76



77



We Can Teach Executive Function Skills

78

Q:

How do you define executive functions?


Where do executive functions reside?

79

THINK Better Learn More

Improving Executive Functions

Executive functioning (EF) is a collection of self-regulatory control processes that are divided into core domains of working memory (i.e., maintain/manipulate data not perceptually present), inhibition (i.e., inhibit or control of attention, thoughts, behaviors), and flexibility (i.e., shift flexibly between tasks/sets; Diamond 2013; Miyake et al. 2000), Kavanaugh et al., 2018.



Self-Control Attention Memory

80

SAM

Self-Regulation
Self-Control
Attention
Working Memory
(Cognitive Flexibility)

81

30+

Alerting Attention	Memory Strategy	Time Allocation
Applying Past Knowledge	Motor Management	Time Estimation
Balance	Motor Planning	Time Monitoring
Cognitive Flexibility	Motor Sequencing	Visual Scanning
Cognitive Persistence	Narrative Language	Working Memory
Coordination	Organization	
Creative Thinking	Planning	
Critical Thinking	Previewing	
Decision Making	Prioritizing	
Emotional Regulation	Problem Solving	
Exploration	Project Planning	
Focused Attention	Reflection	
Impulse Control	Rhythm	
Inhibition	Sustained Attention	
	Task Management	

82

Meta-Cognitive Skills

Thinking about thinking - The act of recognizing that one possesses thoughts, then reflecting on what those thoughts are.

Critical thinking - Analyzing, decoding and examining thoughts, knowledge, actions, feelings and experiences.

Creative thinking - Generating new or novel ideas. Reshaping, reframing and taking action on knowledge, information and activities in a new or novel manner.

Applying past knowledge - Using what one has learned or knows to learn novel content, problem solve, make decisions, think, speak or act.

83

Self-Regulation

Self-Regulation entails aspects of:

Sensory Regulation (perception, response and management of sensory stimuli)

Energy Management (intervening to move energy to an "alert state of calm")

Emotional Regulation (ability to appropriately modulate emotions in situational contexts)

Self-Control (conscious monitoring and responding to stimuli to effect appropriate cognitive, emotional and behavioral responses from moment to moment)

84