Learning Brain Vs. Survival Brain

The brain develops from the bottom up and inside out.

Abstract thought
Concrete thought
Affiliation, Attachment
Sexual behavior
Motor regulation
Emotional reactivity
States of arousal
Appetite, Sleep
Blood Pressure
Heart Rate
Body Temperature

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ACES Study

- Center for Disease Control and Kaiser Permanente HMO
- Over 17,000 people in suburbs of California
- ACEs are common – nearly two-thirds (64%) of adults have at least one.
- ACEs don’t occur alone – if you have one, there’s an 87% chance that you have two or more.
- ACEs cause adult onset of chronic disease as well as mental illness, violence and being a victim of violence.
- For more information: Visit ACEStoohigh.com

How Trauma Can Impact the Brain

- Children who experience trauma can become either dissociative or hyper-vigilant.
- Because of over-stimulation that leads to excess brain wiring, there is often greater density in the brainstem and mid-brain.
- In traumatized children there is less cortical modulation and in some cases a smaller cortical area.
- Unresolved trauma can prevent children from learning to regulate emotions and from being calm and focused enough to learn.

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SENSE OF TIME

- Future
- Week / Day
- Hours / Minutes
- Minutes / Seconds
- Loss of sense of time

Learning Brain  ———— Survival Brain

Stress Tolerance Continuum

- Regulate
- Relate
- Reason

Approach your work with students from a bottom up brain perspective.

1. Regulate
2. Relate
3. Reason

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Co-Regulation: Focus on Yourself

• You are far more useful if your needs are met.

• Not selfish to focus on yourself.

What are Mirror Neurons?

• Neurons that respond the same way when either performing or viewing something someone else is doing.

• Neurons that allow us to feel empathy.

• Neurons that allow us to re-enact actions or qualities observed in others.

Co-regulation and Mirror Neurons

• Students will mirror an adult's level of calm.

• Important for helping to regulate dysregulated students.

• Important for maintaining regulation in students.
The more a neural system is activated, the more that system changes to reflect the pattern of activation.

**Brainstem Interventions**

Primary somatosensory
Rocking/Swinging
Healing touch/massage
Balance/Stretching
Martial Arts
Chewing/sucking
Music/drumming
Yoga
Deep Breathing
Animal-assisted activities

**Midbrain Interventions**

Walk/run/exercise
Bilateral Movement
Creative arts
Music/drumming
Large muscle movement
Breathing exercises
Dance
Animal-assisted activities
Improving sleep rituals
Transition rituals
Horticulture
Limbic System Interventions

- Parallel interactions (adult)
- Parallel interactions (peer)
- One-on-one attention
- Proximity to caring adult
- Mentoring
- Counseling
- Small group counseling or activities
- Team sports with individual performance
- Social and emotional skills training
- Animal-assisted activities

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Cortex

- All learning eventually ends up in the cortex.
- Each of these activities are simply utilizing lower parts of the brain to get information in.
- Traditional lecture/ note-taking or reading/ note-taking will be extremely difficult for anyone with under-developed lower portions of the brain.
- Even a fully developed brain will benefit from teaching styles focused on the three lower regions of the brain.

Thanks for attending:
Questions? Comments?

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