

## The Mindful Brain by Daniel Siegel

Summary of why we do it:

- In mindful learning, it appears that the focus is on engaging with the outside world, not so much in achieving a test score or skill, but in becoming a part of a learning experience in which novelty and uncertainty engages the mind to create new categories of learning (243)
- The experiences we provide as teachers focus students' attention, activate their brains, and create the possibility of harnessing neural plasticity in those specific areas. Coupled with emotional engagement, a sense of novelty, and optimal attentional arousal, teaching with reflection can utilize these prime conditions for building new connections to the brain. (262)
- The overarching idea is that what teachers provide can directly develop life-enhancing skills: life can become more flexible, meaningful, and connecting. Children can develop reflective capacities through skill training that have a long-lasting influence on the promotion of well-being. With reflection, students are offered a neural capacity to socially, emotionally, and academically approach life with resilience. (266)

General Brain concepts: The brain is an associational organ. The neurons that fire together, wire together. It is also an anticipation machine (173)

Siegel's Definition of Mind (as distinct from Brain): An embodied and relational process that regulates the flow of energy and information

Mindfulness, in his view, is just the idea of being aware, of being conscientious, with kindness and care.

Mindfulness is "much more than a relaxation technique" (109). It is a form of 'attention and care' focused on oneself....it is a form of intrapersonal attunement that also promotes resilience. (215)

Kabat Zinn's def'n of mindfulness: the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgementally to the unfolding of experience moment by moment

By Kaiser Greenland "being aware of what's happening as it's happening"

5 facets of mindfulness (91):

1. Nonreactivity to inner experience
2. Observing/noticing/attention to sensations, perceptions, thoughts, feelings
3. Acting with awareness- not on autopilot. Concentration

4. Describing/labeling with words
5. Nonjudgmental of experiences

Mindfulness is a “set of skills that enhances the capacity for relationships with others” (14)

Focus on the breath: breathing is initiated by deep brainstem structures, and is impacted directly by our emotional states. It is the borderline between automatic and effortful, between body and mind (176)

Brain, Mind, and Relationships are a ‘triangle of relationships’ (p 49)

Neural integration, a coherent mind, and empathic relationships are a ‘triangle of well being’ (208)

### **Scientific Evidence for benefits of Mindfulness Practice**

- Improve capacity to regulate emotion, to combat emotional dysfunction, to improve patterns of thinking, and to reduce negative mindsets (6)
- Greatly enhance body’s functioning: healing, immune response, stress reactivity, and a general sense of physical well being improved (6)
- Ability to perceive the nonverbal emotional signals from others may be improved (6)
- Thickness of middle PFC (pre frontal cortex) and insula increases correlate with mindfulness practice (24, 103)
- How we pay attention promotes neural plasticity (25, 31)
- The PFC links body, brain stem, limbic, cortical and social processes into one functional whole (38):
- Enables individuals to regulate their emotions in a more positive manner (approach instead of withdrawal) (32)
- May also promote neural integration (43). Integration helps makes sense of our lives (46)
- May involve a shift (left side of brain’s) linguistic conceptual facts towards (right side of brain’s) nonverbal imagery and somatic sensations
- helps to distinguish primary sensory experiences from secondary emotional or cognitive processes in reaction to the primary experience (97)
- 3 types of attention: Executive, Orienting, Alerting (113,114)
- enhanced sense of well being, and an increased capacity to focus attention and resist impulses (112)
- anecdotal evidence suggest it enhances the capacity for individuals to detect the meaning of facial expressions without verbal clues (200)
- the act of perceptual imaging not only activates those regions of the brain involved in the carrying out of the imagine action, but also produces long term structural growth in those very areas (201)
- may influence nonreactivity by altering the connections between PFC and limbic zones (212)
- people who use words to describe their internal states (reflective dialogues), are more flexible and capable of regulating their emotions in a more adaptive manner (224)

- people who see things from multiple perspectives are less reactive (239)
- people who make fewer social comparisons are less likely to blame and experience envy, and appear more satisfied (239)
- Functions of the PFC: (43)
  - 1) Body Regulation
  - 2) Attuned Communication
  - 3) Emotional Balance
  - 4) Response Flexibility
  - 5) Empathy
  - 6) Self-knowing Awareness
  - 7) Fear modulation
  - 8) Intuition (gathering input from body networks)
  - 9) Morality

If we attend to other's intentions, we create interpersonal attunement. As we attend to our own intentions, we create internal attunement. (178)

Mindfulness allows us to dissolve Top Down (conceptual understanding) processing and be more aware of Bottom up (direct sensory experience)...allows us to shed impediments to direct experience...it is the integrator of these experiences...creates discernments (134-140)

Mindfulness can clear the way to allow an individual to create a coherent life story, to become free from the constraints of the past

Being mindful requires intention and courage (151)

Mindfulness and empathy go hand in hand (201)

The mirror neuron system, along with other areas such as the insula, superior temporal cortex, and middle PF rention, form the interconnected "resonance circuitry" (165)

Interoception, how we perceive inwardly.  
Internal attunement promotes neural integration which enables mental coherence (199)

### **Teaching Considerations/Implications**

- Attentional processes, emotional regulation, and the capacity to observe internally, to introspect and reflect, are all considered trainable skills (97)
- Well being and compassion can be intentionally aquired (101)
- As we grow into adulthood, it is likely that these accumulated layers of perceptual models and conceptual categories (top-down) construct subjective time and deaden our feelings (bottom up) of being alive (105)

- Reflection opens the doors of sensation (107)
- *During adolescence, the PFC undergoes a great deal of remodeling in which neural connections are pruned and functions carried out by this region my labile and become dysfunctional under stress. As we grow through this period, more complex metacognitive capacities become available and may enable teenagers to think in much more complex and ultimately self-observant ways (115)*
- We sometimes consider thought, emotion, and attention as separate processes. In the brain itself, we see that these dimensions merge as one process. (126)
- Mindfulness broadens identity by giving neural access to the direct experience beneath top-down influences
- If we present info in a conditional rather than absolute ways, it seems to induce a cognitively mindful state that evokes the active engagement of the student's own mind. This is mindful learning (232)
- We can approach our work as teachers with an active effort to bring the full self-left and right mode- into the learning (234)
- If educational processes in school leave out one mode of self (autobiographical memory) or the other (objective analysis), the integration needed for balanced learning will be absent 9235)
- If we believe these traits are acquired by effort then we can exert our focus of attention and build the skill necessary for intelligence or happiness (245)
- When teachers have become accustomed to traditional approaches of teaching, an educational focus on the experience of the student, rather than the outcome of learning or the results of some test of achievement, may feel uncomfortable (247)
- Promoting reflection in this educational way will pull in the neural circuits of self that make life more memorable, more meaningful, and more fulfilling (254)
- A focus on the self, and in particular on the mind, is often absent from those thousands of hours we spend in the classroom (261)
- Reflection is the skill that embeds self-knowing and empathy in the curriculum (261)

When parents only attend to overt action, they miss that chance to attune to their child's mind, to the feelings and intentions that drive behavior. Children thrive on the benefit of having parents who focus on their internal worlds (190)

Many of the functions that Siegel talks about- intention, self-awareness, mapping out the self, being aware of other's emotions- are the key tasks of adolescence

His love of acronyms:

What happens during mindfulness practice:

YODA: You Observe to Decouple Automaticity

After engaging in YODA, you can pay attention to your brain's streams of awareness without judgement:

SOCK: Sensation, Observation, Concept, Knowing

Mental Well being consists of us being

FACES: Flexible, Adaptive, Coherent, Energized, and Stable

And this is aided by mindfulness

We should be reflective and aware of ourselves with Curiosity, Openness, Acceptance, and Love: COAL

His defn of 8 senses (121-3):

First 5 (sight, touch, smell, hear, taste)

6<sup>th</sup>- Body- the neural net around the internal organs

7<sup>th</sup>- Mind- thoughts, feelings, intentions, attitudes, concepts, etc

8<sup>th</sup>- Relationships- our sense of our relationships, connections, with others

Identity defn: an organizational structure that has helped us survive and adapt to our lives (150)

Words are the cognitive contraptions we use to work our way through the world of uncertainty (160)