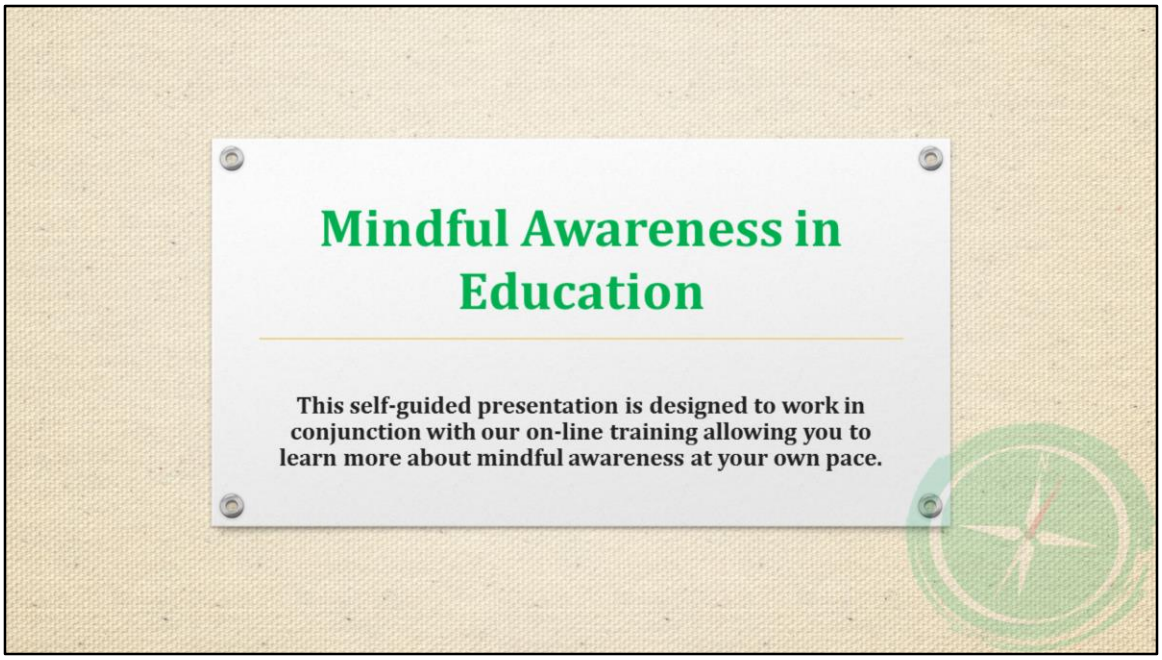
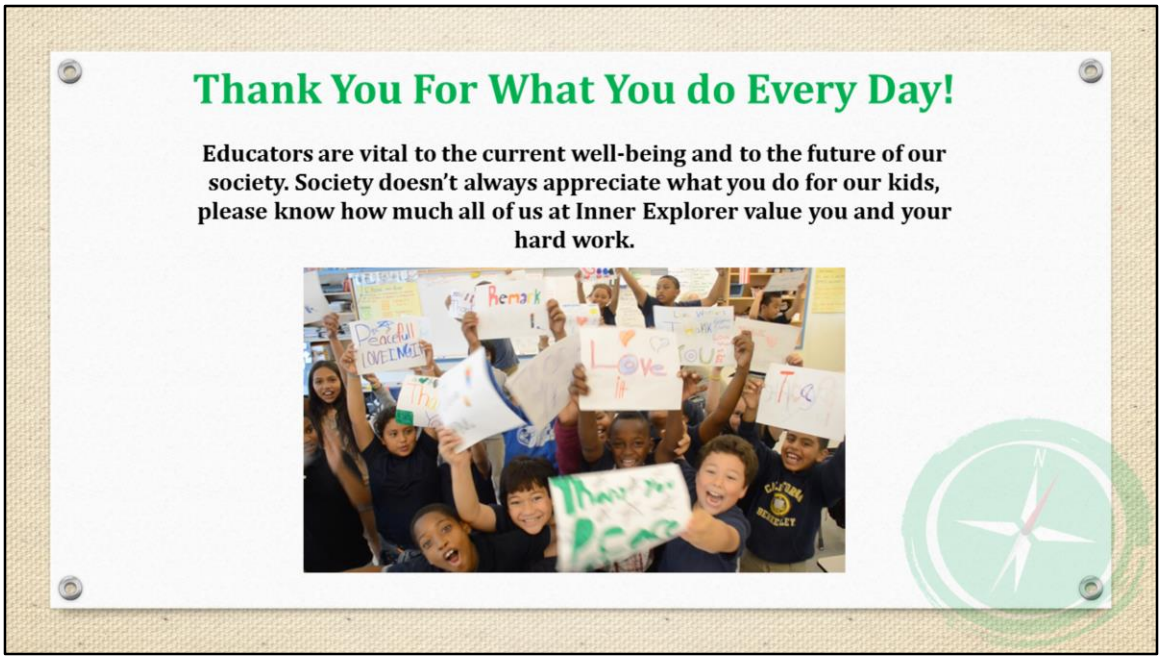
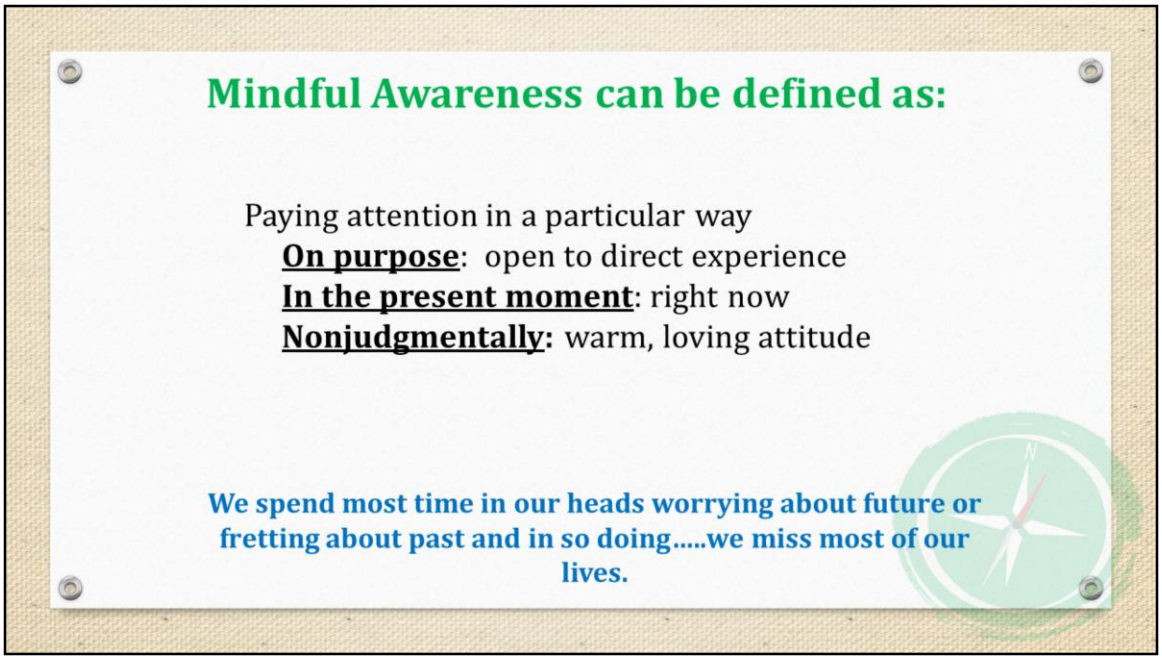


What is mindful awareness and how can it help in education?



Inner Explorer is designed to work for teachers and we appreciate all that you do for our educational system.



Have you ever driven to a location that you've driven to more than once and suddenly you are there and you can't recall the drive there? We've all done that, when we are caught up in thoughts and not paying attention to the ride.

How Does Mindful Awareness Work?

Students participate each day in an inner exploration. As they become more aware of their direct experiences, beyond the chattering of the mind, they begin to recognize their essence, their potential, and their purpose

Opening to the full experience of life one can
create space between "true self" & chattering mind.
Become familiar with ones inner world - calm & relaxed.
Understand ones habits and patterns and make "better" choices.

Promotes "Readiness" & "Cognitive Health"

Similar to driving, we have all said things as a reaction that we later regret. Mindful awareness allows us to create that space to make a better choice and that space for children can be life altering.

These practices have many health and wellness benefits…… scientists don't understand everything that happens in the body, but they know it works

Nearly every **clinical study has yielded significantly positive results**---mostly without having to take medications
No downside risks (unlike surgery and drug therapies)
Huge focus in every conceivable area (**healthcare, sports, military, prisons, corporations, government, law, now in education**)

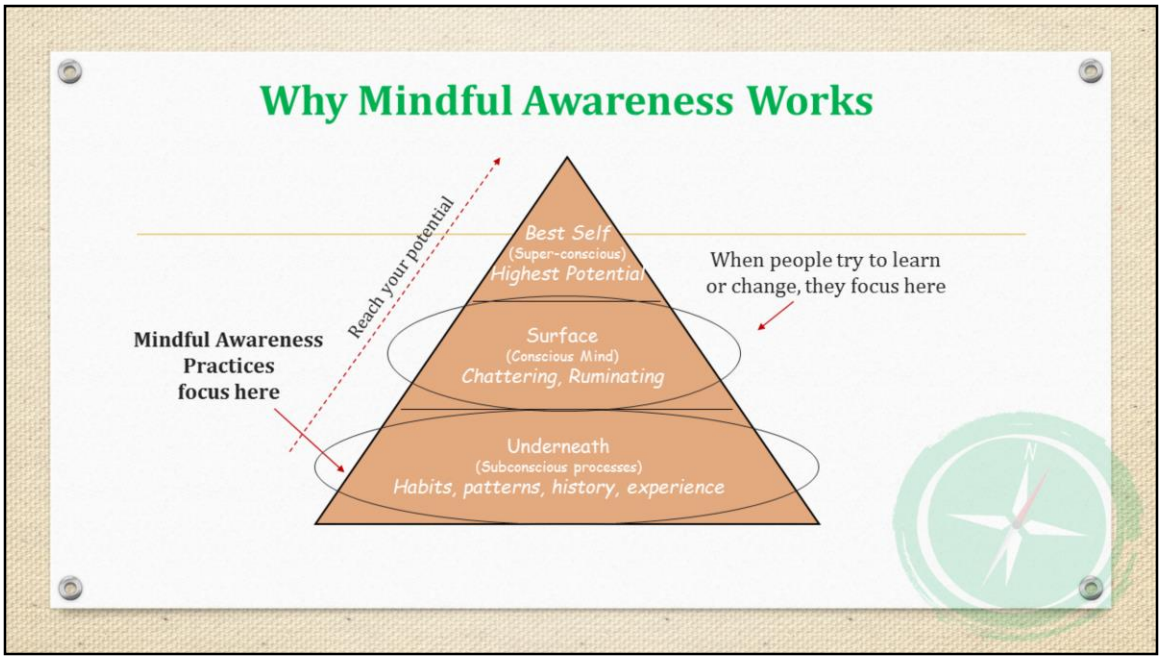
Research…..why you should care……it's not just us telling you…..

Executive function is critical for success in school
-decision making
-goal orientation
-planning (sequencing steps)
-behavior moderation- getting along with others
-complex planning
Improves working memory
(complex thoughts, emotional regulation, self and situational awareness)

Cognitive resources are limited- **if limbic arousal, best teachers best curriculum will not get through (or will be greatly reduced)**

Epigenetic on/off switch-you may have cancer gene or heart disease gene but it's turned off…..turns out that lifestyle can effect the on off switch. We do not have all the answers about how this works, but preliminary studies suggest that mindful awareness can positively effect the on/off switch. In fact in one study, the genes that caused disease were shut off and the ones that enhanced health were turned

on. There was no downside to the practice…NONE

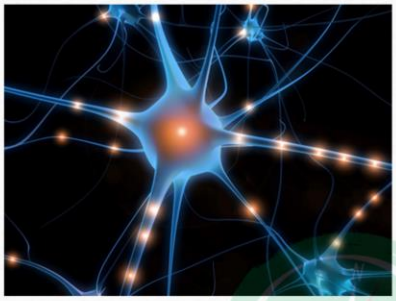


On the surface-people try positive thinking (only) or some people say just get over it. Just do it. Sometimes that works…often it doesn't and people are **left wondering what's wrong** with them. Then the **chattering mind really goes to work**…..what's wrong with me, why does everyone else seem happy, successful, healthy…..I can't do anything right…..

Mindful awareness works underneath the surface to help you recognize your habits and patterns to help make positive changes.

Readiness (or not) in the brain

- **Limbic System**
  - Fight/Flight -Bottom-up - faster process--habitual, reactive, "action before thought"
- **Prefrontal Cortex (PFC)**
  - Executive Function (EF) Top-down - slower process--complex planning, decision making, memory, creativity
- **Cognitive resources are limited**
  - Limbic arousal causes PFC to go "off-line"
  - Chronic Stress creates limbic hyper-arousal - strengthens negative pathways



"What fires together, wires together"

- Unfortunately we can't just turn on the "readiness" switch. We have to prime the brain to be in that mode……by having a daily practice.
- Pruning system – what traits we use more frequently becomes the norm and the brain naturally prunes away what we are not using. We can regenerate these traits but it takes time.
- "What fires together, wires together" - making behavior more likely to be repeated (this is what keeps us up at night. If kids don't learn coping mechanisms when they are young, they will "wire" negative patterns of thought and behavior, making it more likely they will stay in that mode).
- When we focus on what's wrong, we get stuck. Right side of the brain is looking for the negative. If those are the neurons we fire, that's what we get, more negative.
- Practicing gratitude and looking for what's right wires those neurons together on the left part of our brain, and then we get more of what's right in our lives.
- Does this explain what you see in the classroom? (and this isn't just "bad" kids)

What are Neuroscientists Saying? (and Social Scientists, Educators, Policy Makers)

- "Readiness to Learn" is the ability to regulate emotions and behaviors and to inhibit impulsivity
- "Readiness" is more predictive of academic performance than most other factors, including IQ!

"Readiness to Learn" is a precursor to school success

The challenges exist, but what are you facing in the classroom?

Kids may be sitting in their chairs but their minds are elsewhere.
When a symphony plays they don't get on stage and just start playing, they warm up.

Mindful awareness is like warming up the brain to be present for lessons.

This is widely known, and the reason we have 30+ years of SEL programming……Challenge is how is readiness developed and sustained?

Sleep deprivation is another factor which makes learning difficult. According to a 2007 study by the Center for Disease Control & Prevention, almost 70% of teens are not getting the recommended amount of sleep (less than 8 hrs). Lack of sleep is associated with poor concentration and impulse control, one of which is fighting and of course, what we see in the classroom, kids that are exhausted. It's difficult to learn when one is tired.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3060715/ is a link for the National Institute of Health - Mindfulness Based Approach to Treatment of Insomnia….Showing several studies showing the efficacy of mindfulness as a treatment for insomnia

Challenges Teachers Face

Educators are Challenged to Improve Outcomes

- Facilitate Achievement
  - Grades, Tests, Graduation
- Improve School Climate
  - Safety, Bullying Prevention
- Improve Student Behavior
  - Detentions, Suspensions
- Develop/Maintain Exceptional Staff
  - Training, Reduce Turnover

Initiative Overload

No one knows this better than you! You are the superheroes, managing what many times seems impossible; multiple languages and abilities in the classroom, addressing societal issues, and all the while bringing kids' achievement up with not enough hours in the day.

Societal Issues Disrupt Readiness

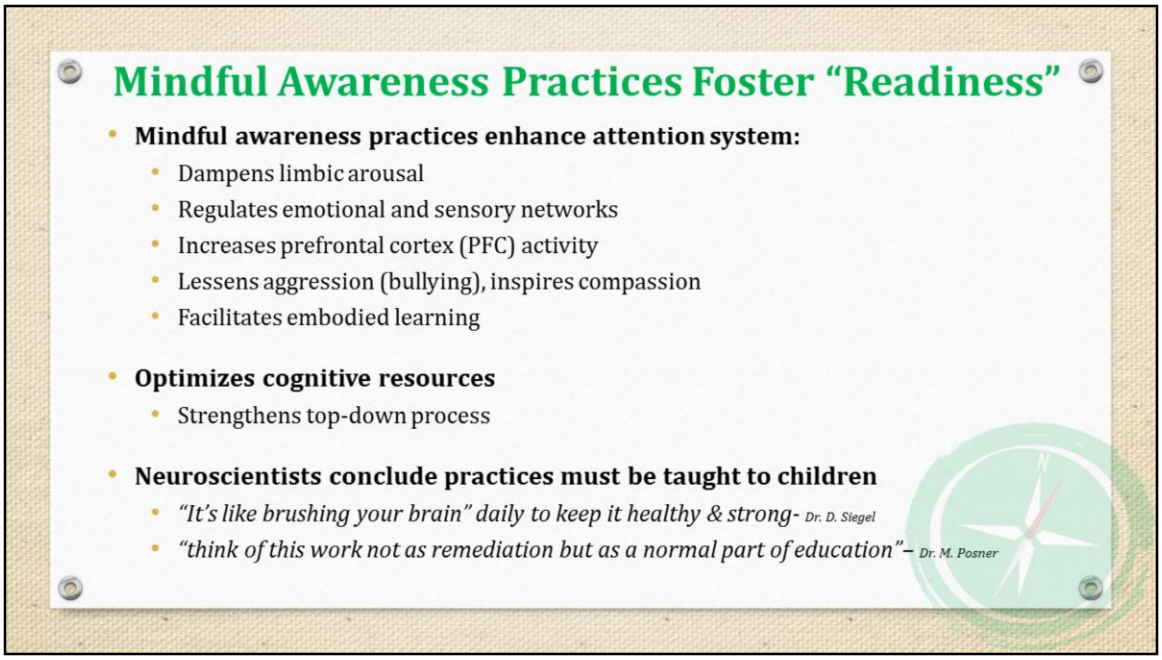
- Information Overload-Stressed & Overscheduled kids
- Health Epidemics-Obesity, Diabetes, ADHD and Sleep Deficits
- Extensive Exposure to Violence -TV, Video, Internet, Gangs
- Family Dynamics-high divorce rates, unemployment, poverty

Students are overwhelmed – stressed - distracted

We know readiness is key, yet our culture, society and lifestyles seem to be creating the antithesis of readiness….chronic stress

Kids come to school preoccupied. They cannot focus until we get them in the present moment.

Too many neurons are engaged in other activities.



Like school breakfast program…..we know it works and needs to be integrated into the day.

Though Inner Explorer is not a mental health program, mindful awareness is a tool being used increasingly in therapeutic settings. There is a dearth of mental health services available to kids in public schools, particularly in low-income schools. Mindful awareness can help students learn to self-soothe, a very important tool indeed.

How can Mindful Awareness help my students?

- Trains attention
  - Students learn to focus and attend
- Reduces anxiety
  - Students are calmer, more grounded
- Enhances impulse control
  - Students make better decisions
- Strengthens connections
  - Students are happier & more positive

What can you expect in the classroom?

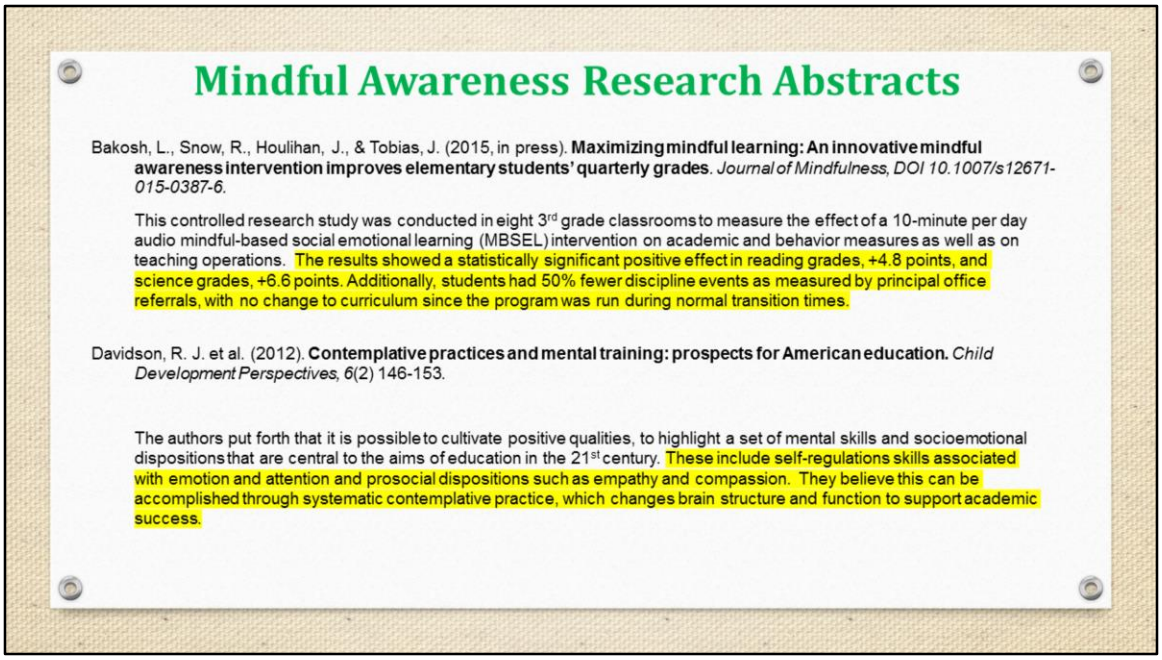
Let's hope that kids end up bringing the practice home with them and integrating mindful awareness both at home and at school.

How can Mindful Awareness help me with my class?

- **Improved classroom management**
  - **Students regulate their impulsivity**
- **Reduced teacher stress**
  - **Teachers participate in the daily program**
- **Improved teaching effectiveness**
  - **Students are better able to "attend" to instruction**
- **Increased teaching time**
  - **Fewer distractions, approx. 15 "extra" min/day**

In a classroom environment, it's so hard to try to implement another initiative. However, how about one that benefits the teacher as much as it benefits the students?

Classroom management is a positive outcome that comes with the daily mindful awareness practice.



The next few pages contain research abstracts that we have highlighted for you.

Diamond, Adele & Lee, Kathleen (2011). **Interventions shown to aid executive function: Development in children 4 to 12 years old.** *Science, 333, 959-964.*

This review looks at 6 activities used to improve executive functions (EF). It states that all successful programs involve repeated practice. In the mindful awareness group, with 7 to 9 year olds they found a significant improvement with self regulation and emotional control skills in children who had initially poorer EFs than those with initially better EFs compared with controls.

Flook, L. et al. (2010). **The effects of mindful awareness practices on executive function in elementary school children**, *Journal of Applied School Psychology, 26: 1, 70-95.*

These two pilot studies demonstrated that mindful awareness practices improve executive function in elementary school children. Specifically, there was improvement in self-regulatory abilities among preschool and elementary school students who participated in an 8-week modified Mindfulness Based Stress Reduction (MBSR) training program, taught in two 30-minute sessions per week. Children who were initially less well regulated showed the strongest improvements subsequent to training, as compared to children in the control group who did not receive the training.

Garrison Institute (2005). **Contemplation and education: A survey of programs using contemplative techniques in K-12 educational settings: A mapping report**. NY.

An extensive survey of mindful awareness programs currently being used throughout the United States in schools. It showed that schools are adopting secular mindful trainings because the techniques are easy to learn and help children become "more responsive and less reactive, more focused and less distracted, [and] more calm and less stressed." While mindful awareness can produce internal benefits to kids, including fostering love and forgiveness, the report also found it can create a more positive learning environment, where kids are primed to pay attention.

Hart, T. (2004). **Opening the Contemplative Mind in the Classroom**. *Journal of Transformative Education Vol. 2 No. 1, 28-46DOI: 10.1177/1541344603259311.*

This paper provides a comprehensive view of contemplative programs in education. Hart notes that contemporary curriculum typically "exclude a fundamental way of knowing—the contemplative—from any viable role in education in favor of a rational and empirical approach. As a result, few mainstream teachers or curriculum planners have explicitly integrated the contemplative into the classroom. Yet, "contemplative knowing has been described as fundamental to the quest for knowledge and wisdom and complementary to analytic processing". His article offers a compelling rationale for returning to the contemplative to positively impact learning and behavior.

Hozel, B.K, et al (2011). **Mindfulness practice leads to increases in regional brain gray matter density.** *Psychiatry Res. 191*(1), 36-43.

The authors analyzed the neural mechanisms associated with mindful awareness practice. Using MR images they compared pre and post brain scan to measure regional gray matter density. They found that those who practiced mindful awareness, compared to controls, had increases in grey matter concentration in the left hippocampus, the posterior cingulate cortex, the temporo-parietal junction and the cerebellum. This suggests that mindful awareness practices can increase brain size in regions involved in learning, memory processing, emotion regulation, self-referential processing, and perspective taking

Immordino-Yang, M. H., Christodoulou, J. A., & Singh, V. (2012). **Rest is not idleness: Implications of the brain's default mode for human development and education.** *Perspectives on Psychological Sciences*, 7, 352-364.

Neuroscience shows that the brain is highly active during periods of 'wakeful rest'. Neural processes in the 'default mode' (DM) increase, which is important for psychosocial functioning, mental health and cognitive abilities like reading comprehension and divergent thinking. The authors recommend mindful awareness training in schools as a way to balance the largely external attentional demands in our culture. They also suggest that some social and emotional skills are vulnerable to disruption by the overuse of technology and social media, which inhibit DM activity.

Jha, A. P., Stanley, E. A., Kiyonaga, A., Wong, L., & Gelfand, L. (2010). **Examining the protective effects of mindfulness training on working memory capacity and affective experience.** *Emotion 10*(1), 54-64.

This study measured the effects of mindful awareness training on working memory capacity (WMC). WMC is used in managing cognitive demands and regulating emotions. Yet persistent stress may deplete WMC and lead to cognitive failures and emotional disturbances. The authors found that participants who had mindful awareness training improved WMC compared to a control group. They also found that practice time mediated the gains in WMC as well as gains in wellbeing and reductions in stress and anxiety.

Mendelson, T., Greenberg, M., Dariotis, J., Gould, L. F., Rhoaedes, B., & Leaf, P. (2010). **Feasibility and preliminary outcomes of a school-based mindfulness intervention for urban youth.** *Journal of Abnormal Child Psychology, 38*(7), *985-994.*

This paper reports finding from a pilot randomized controlled trial assessing the feasibility, acceptability, and preliminary outcomes of a school-based mindfulness and yoga intervention. The study was conducted with four urban public schools, 4th and 5th graders, for 12 weeks. The findings suggest that the intervention was attractive to students, teachers, and school administrators and that it had a positive impact on problematic responses to stress including rumination, intrusive thoughts, and emotional arousal.

Posner, M.I. & Rothbart, M.K. (2005). **Influencing brain networks: implications for education**. *Trends in Cognitive Science 9, 99-103.*

According to a model first proposed by University of Oregon neuroscientist Michael I. Posner, attention can be trained. This research shows, and others have replicated the results, that attention training results in higher scores on IQ tests and a marked gain in executive attention. The results have been so remarkable that Posner and others are calling on educators to consider teaching attention as early as preschool. He said, "We should think of this work not just as remediation, but as a normal part of education."

Schonert-Reichl, K. & Lawlor, M. S.(2010). **The effects of a mindful-based education program on pre- and early adolescents' well-being and social and emotional competence.** *Mindfulness, 1, 137-151.*

This study evaluated the effectiveness of the Mindful Education (ME) program using self-reporting measure by the students on optimism, general and school self-concept, and positive and negative affect and by teacher ratings of classroom social and emotional competence. The results showed that there was a significant increase in optimism by students in the ME program, and there was an effect for self-concept. Teacher rated classroom social competent behaviors were found favoring for the ME program and they reported that they were easily able to integrate the short mindful attention exercises within their classrooms.