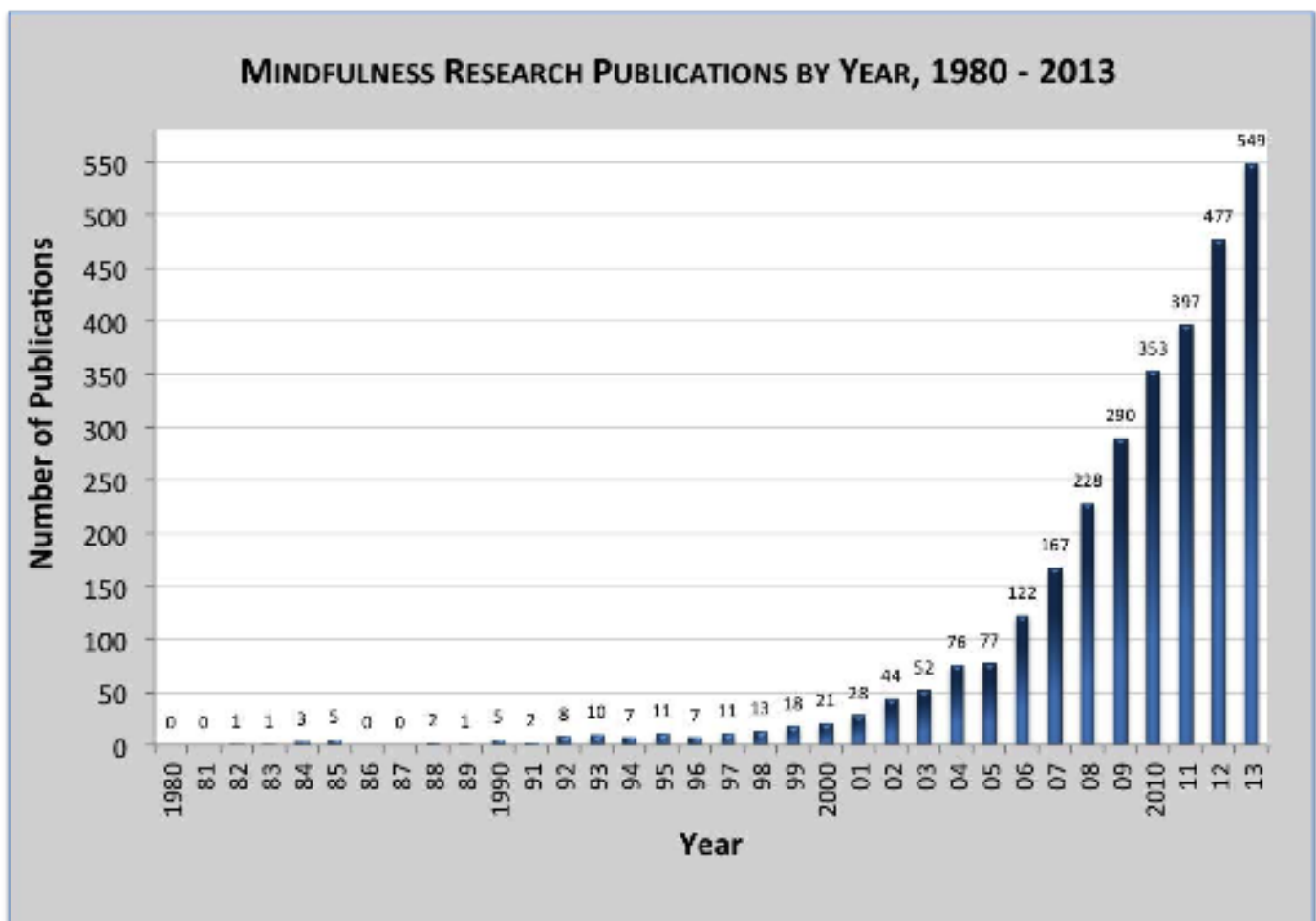




MINDFUL AWARENESS RESEARCH ABSTRACTS

The practices associated with mindful awareness have been scientifically studied for nearly 35 years.

An example of growth in the mindful awareness research literature from 1980 – 2013



Notes. Data obtained from a search for "mindful awareness" in the ISI Web of Science database. Search limited to research-related articles; book-related material excluded

Bakosh, L., Snow, R., Houlihan, J., & Tobias, J. (2015, in press). **Maximizing mindful learning: An innovative mindful awareness intervention improves elementary students' quarterly grades.** *Journal of Mindfulness*, DOI 10.1007/s12671-015-0387-6.

This controlled research study was conducted in eight 3rd grade classrooms to measure the effect of a 10-minute per day audio mindful-based social emotional learning (MBSEL) intervention on academic and behavior measures as well as on teaching operations. The results showed a statistically significant positive effect in reading grades, +4.8 points, and science grades, +6.6 points. Additionally, students had 50% fewer discipline events as measured by principal office referrals, with no change to curriculum since the program was run during normal transition times.

Davidson, R. J. et al. (2012). **Contemplative practices and mental training: prospects for American education.** *Child Development Perspectives*, 6(2) 146-153.

The authors put forth that it is possible to cultivate positive qualities, to highlight a set of mental skills and socioemotional dispositions that are central to the aims of education in the 21st century. These include self-regulations skills associated with emotion and attention and prosocial dispositions such as empathy and compassion. They believe this can be accomplished through systematic contemplative practice, which changes brain structure and function to support academic success.

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, 28-46 DOI: 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., Rhoades, 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.