Fostering Self-Regulation Through Mindfulness Based Practices

Dessa Bergen-Cico & Rachel Razza
Syracuse University

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Implications for Intervention
Self-regulation is a multifaceted construct that allows youth to monitor their cognitive strategies and adapt their behavior to fit situational demands.

Top-down, effortful
Executive functions: working memory, inhibitory control, mental flexibility

Bottom-up, automatic
Attention, emotion, & physiological arousal

Blair & Ursache, 2011
Classroom organization
- What are some strategies that educators use every day to proactively guide students’ behavior and attention?

Classroom curricula
- Tools of the Mind (Diamond et al., 2007)

Direct skills-training interventions
- Pay Attention! - ADHD (Tamm et al., 2010)

New directions – mindfulness and yoga
- Targets both top-down and bottom-up processes

Enhancing SR in Schools
“Mindfulness means paying attention in a particular way; on purpose, in the present moment, and nonjudgementally.” Jon Kabat-Zinn (1994)

What is Mindfulness?
We can be very disconnected from our bodies, emotions, and thoughts – in other words, we just go through the motions/routines

- Do you do anything like this? Can you acknowledge the autopilot and try to connect with your senses? For example, notice the outdoors as you walk to get the paper or mail.
- The simplest of all mindfulness practices = BODY AWARENESS
  - Your body is always in the present moment, unlike your mind, so by paying attention to it, you are brought back into the present! (try feeling your hand from the inside (felt sense over conceptual)
The Science

Benefits of mindfulness:
- Rather than suppressing thoughts, we notice and let them go (more accepting, less critical)
  - Decreased anxiety, depression
- Boosts body’s defense system
  - Less illness, faster recovery
- Promotes prosocial behavior
  - Links to compassion, character
- Enhances self-regulatory skills
  - Emotion regulation, attention, inhibitory control
Mindfulness is a tool for improving discernment of emotional states. It allows for a pause between emotion and action.
Parts of the Brain Involved in Fear Response

- Sensory Cortex
- Thalamus
- Hypothalamus
- Amygdala
- Hippocampus

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Mindfulness-based practice (MBP), including meditation and yoga, share the goal of promoting **attention** and **inhibition** and decreasing **stress reactivity**.

- Effective in promoting SR skills and mental health among adults
- Believed to be feasible among children and adolescents (Greenberg & Harris, 2011).

Mindfulness-based curricula have been successful in enhancing:

- Executive Function among older children (Flook et al., 2010; Mendelson et al., 2010).
- Self-acceptance and both emotional and behavioral regulation among pre- and early-adolescents (Broderick & Metz, 2009; Schonert-Reichl & Lawlor, 2010).
Our research has found significant improvements with Mindful Yoga integrated into school-day

- Self-regulation among 6th graders
- Mindfulness among 6th graders
- Inhibitory control pre-schoolers
- Lack of attention pre-schoolers

Benefits of Integrating Mindfulness Practice into Curriculum and School Routine
• Evaluate the use of a standardized program (YogaKids) as an integrated mindfulness-based intervention with children ages 3-6 years.
• Measure the extent to which mindfulness impacts particular aspects of self-regulation:
  ◦ attention and related executive functions
What is Mindful Yoga?

- Incorporates
  - Hatha Yoga movements to increase flexibility and body awareness
  - Meta cognition (thinking about what you are thinking)
  - Breathing techniques to increase attention and concentration
- Pre/post-test intervention with control group
  - 34 urban preschoolers (18 IV; 16 C)
  - Incorporating mindfulness and yoga into regular classroom activities (e.g., Take-5 breath, poses)

- Assessment battery
  - multiple indices of children’s self-regulation (attention, inhibitory control, delay of gratification)

- Intervention Fidelity and Exposure
  - Teachers are certified YogaKids instructors
  - Teachers maintain classroom practice logs daily measure of mindful yoga, time on task, elements of practice

<table>
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<tr>
<th>Classroom</th>
<th>Total hours</th>
<th>Mins/week</th>
<th>Mins/day</th>
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<td>Kindergarten</td>
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<tr>
<td>Date</td>
<td>Yoga Activity</td>
<td>Length/time</td>
<td>Date</td>
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<td>11/5/12</td>
<td><strong>Monday</strong>&lt;br&gt;Yoga at community opening&lt;br&gt;Mountain, tall mt., tree (branches and leaves, leaves falling) Animal Poses (elephant, bunny breathing, Tiger, snake/lizard/Heron, owl eyes, cat and cow, flamingo, and elephant again!!!!&lt;br&gt;Monkey (bug eating chimps)&lt;br&gt;Take 5 and polar bear&lt;br&gt;From Head to Toe by Eric Carle RCAWY</td>
<td>15 min</td>
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<td><strong>Tuesday</strong>&lt;br&gt;Yoga at community Opening&lt;br&gt;Mountain, tall mt., tree, branches, leaves falling Animal Poses Monkeys Take 5&lt;br&gt;From Head To Toe story and yoga poses</td>
<td>10 min</td>
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<td>11/7/12</td>
<td><strong>Wednesday</strong>&lt;br&gt;Yoga at community opening&lt;br&gt;Mountain, tall mt., tree (branches and leaves, leaves falling) Animal Poses (elephant, bunny breathing, Tiger, snake/lizard/Heron, owl eyes, cat and cow, flamingo, and elephant again!!!!&lt;br&gt;Monkey (bug eating chimps)&lt;br&gt;Take 5 and polar bear&lt;br&gt;From Head to Toe by Eric Carle RCAWY</td>
<td>15 min</td>
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<td>11/8/12</td>
<td><strong>Thursday</strong>&lt;br&gt;Yoga at community opening&lt;br&gt;Mountain, tall mt., tree (branches and leaves, leaves falling) Animal Poses (elephant, bunny breathing, Tiger, snake/lizard/Heron, owl eyes, cat and cow, flamingo, and elephant again!!!!&lt;br&gt;Monkey (bug eating chimps)&lt;br&gt;Take 5 and polar bear&lt;br&gt;From Head to Toe by Eric Carle Animal poses and poses with the book</td>
<td>15 min</td>
<td>11/8/12</td>
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<td>11/9/12</td>
<td><strong>Friday</strong>&lt;br&gt;Yoga at community opening&lt;br&gt;Mountain, tall mt., tree (branches and leaves, leaves falling) Animal Poses (elephant, bunny breathing, Tiger, snake/lizard/Heron, owl eyes, cat and cow, flamingo, and elephant again!!!!&lt;br&gt;Monkey (bug eating chimps)&lt;br&gt;Take 5 and polar bear&lt;br&gt;From Head to Toe by Eric Carle RCAWY (Reading Comes Alive with Yoga)</td>
<td>10 min</td>
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Program Impact: PreK

Inhibitory Control

Lack of Attentional Impulsivity
Mindful yoga was systematically implemented through a sixth grade English Language Arts (ELA) curricula in a public middle school in the greater Boston area.

ELA teachers introduced brief elements of mindful breathing, simple yoga poses, and breath work for 3-5 minutes at the start of each ELA class (3-4 times/week).

Participants in the intervention (n=221) and control (n=171) groups completed self-report assessments at pre-test (T1; early fall), mid-year (T2; winter), and post-test (T3; late spring).

Data were collected during school via an online survey program.
Video: ELA Class
• Mindful Attention Awareness Scale in Adolescents (MAAS-A; Brown et al., 2011)
  ◦ 14 items tapping sustained, receptive attention to present events and experience
    • I find myself preoccupied with the future or the past.
    • I find myself doing things without paying attention.
  ◦ Links with psychological well-being and adaptive functioning

• Adolescent Self-Regulatory Inventory (ASRI; Moilanen, 2007)
  ◦ 36 items tapping short- and long-term regulation
    • ST: During a dull class, I have trouble forcing myself to start paying attention; When I’m bored I fidget or can’t sit still
    • LT: I work carefully when I know something will be tricky; I can resist doing something when I know I shouldn’t do it.
  ◦ Links with parental warmth, behavioral competence
Program Impact: ELA

Changes in ASRI Self-Regulation Score

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<th>ASRI Pre</th>
<th>ASRI MldYr</th>
<th>ASRI Post</th>
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<td>Treatment</td>
<td>124</td>
<td>128</td>
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<tr>
<td>Control</td>
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<td>122</td>
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• Some students noticed a difference on days when they did not do yoga; one student wrote:
  ◦ “the days we didn’t do yoga and meditation it was hard to focus.”

• Some of the positive remarks from students indicated a recognition the physical as well as cognitive benefits of practice:
  ◦ “I felt like having yoga was very helpful because it made me focus more in class and it stopped my headaches”
  ◦ “the yoga helped me get my energy out, and the meditation helped me relax more before class started.”
Some parents noted that the yoga/mindfulness program helped their children:

- One mother noted that it gave her son a chance to “forget about what happened earlier in the day have that moment of meditation and to know ‘ok...I am here at Ms. T’s class and I am relaxed and ready to focus on the task ahead.”

- “As you know, ___ can be a bit of a worrier and can sometimes blow things out of proportion. I think yoga and meditation have definitely been good tools for him to use when he just needs to take a deep breath and calm down, or perhaps quiet his thoughts....although we have not seen him do actual yoga, we can tell that he will step away (from arguments) to take a few deep breaths and meditate.
“I am more calm and collected . . . I am able to stay focused and energized throughout the day.”

“My classroom does feel more serene this year and I think that our yoga and meditation practice has helped to create that atmosphere. It may just be my own level of calm that has made the difference.”

“I am not so apt to push through assignments because we have a “schedule” to keep. My pace is slower and my decisions to move forward are more mindful.”

“I feel that I pay more attention to my students needs as learners and as people.”
Follow-up analyses revealed a difference in mindfulness between groups for the majority of adolescents.
Facilitator needs to have a personal mindfulness or mindful yoga practice
Consistency & repetition of practice is key
How can we enhance sustainability?
  ◦ Infuse in other courses, across years
  ◦ Collaborate with after-school programs
  ◦ Involve families
Syracuse University
Dessa Bergen-Cico, Ph.D.
Rachel Razza, Ph.D.
Kimberly Raymond, M.S.

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