Amplifying Our Voice: Leading Boldly for Our Students, Our Professions, and Our Union

The Science and Art of Mindfulness to Cultivate Understanding, Respect, and Academic Success

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COMPETENCY: ADVOCACY

- NEA Leadership Competency progression level(s).
- Level 1: Foundational and
- Level 2: Mobilizing & Power Building

- The NEA Leadership Competency themes within the competency that your presentation is designed to address.
  - Utilizes best practices in advocacy and political efforts
  - Example: Leads public education policy reform
The NEA Strategic Goal and NEA Organizational Priority addresses:

• NEA Strategic Goal
  - advancing opportunities that will identify, organize, and engage new and early career educators; amplify the voices of all educators, support our members’ professional growth, and promote social justice for our students, communities and our nation;
  - securing a pro-public education environment for students, educators, and families; and
  - building the capacity of the local, state and national union to ensure the success of public education.

• NEA Organizational Priorities
  - Early Career Educator
  - Racial Justice in Education
  - My School, My Voice
  - Supporting Professional Excellence
Session Outcomes
What you will be learning today:

• Introduction to Mindfulness & Neuroscience
• Neurorestorative Exercises
• Mindful Eating and the Vagus Nerve
• Classroom Modifications for Self-Regulation
• Practicing Gratitude
Neurons

Brain

Mirror Neurons
Compassion  |  Empathy  |  Kindness  |  Gratitude
Mindful (ˈmīn(d) - fəl)

• **Aware of something that may be important.** (Merriam-Webster Dictionary)

• **Conscious or aware of something; Inclined or willing to do something.** (Oxford Dictionary)
Mindfulness Practices:

... exercises to train the brain to be more mindful; to improve attention (awareness) and emotional regulation (response).
Empirically Supported Benefits of Mindfulness

- Reduced rumination
- Stress reduction
- Increased working memory
- Focus
- Less emotional reactivity
- More cognitive flexibility
- Relationship satisfaction
- Increased emotional intelligence and social connectedness

- Increased morality
- Increased fear modulation
- Increased immune function
- Improvement to overall well-being
- Increase information processing speed
- Decreased mind wandering
- Decreased blood pressure
- Increased empathy/compassion
- Decreased anxiety
- Enhanced self-insight
Why Mindfulness in Schools?

Proactive practice of mindfulness in schools benefits students by creating a culture of:

- prosocial behavior
- emotional regulation
- academic achievement
# Mindfulness Benefits for Students

<table>
<thead>
<tr>
<th>Cognitive Outcomes</th>
<th>Social-emotional Skills</th>
<th>Well Being</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Attention(^2)</td>
<td>• Behavior in school(^2)</td>
<td>• Test anxiety(^4)</td>
</tr>
<tr>
<td>• Executive function – including cognitive flexibility(^3)</td>
<td>• Empathy and perspective-taking(^1)</td>
<td>• Stress(^4)</td>
</tr>
<tr>
<td>• Grades (preliminary evidence)(^3)</td>
<td>• Social skills(^1)</td>
<td>• Post-traumatic symptoms(^4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Depression(^4)</td>
</tr>
</tbody>
</table>
Why Mindfulness in Schools?

Enhancing children's self-regulatory abilities showed significant improvements in executive functioning skills and significant reductions were found in aggression and social problems. 
Alison E. Parker et al. Advances in School Mental Health Promotion, 27 Jun 2014

Results showed that teachers reported improved classroom behavior of their students (i.e., paying attention, self-control, participation in activities, and caring/respect for others)
Executive function is a set of cognitive processes that facilitate the attainment of chosen goals. Executive functions include basic cognitive processes such as attentional control, cognitive inhibition, inhibitory control, working memory, and cognitive flexibility.

Emotional development is constructed from executive function, which strongly depends on maturation of the frontal lobes. Emotional development involves increased understanding of emotions in oneself and others as well as increased ability to regulate emotions based on current goals and socially-shared rules.
Universities Researching and Teaching Mindfulness

- University of Virginia
- University of Wisconsin Madison
- University of Washington
- Buckingham University
- University of Michigan
- University of Aberdeen
- NYU
- Cambridge University
- St. Louis University
- University of Vermont
- Stanford
- University of Iowa
- University of Florida
- University of New Mexico

- UCLA
- MIT
- Harvard
- Columbia
- Missouri State
- Oxford University
- Florida International Law School
- John F. Kennedy University
- University of North Carolina
- Boston University
- University of Western Australia
- Washburn University School of Law
- Flinders University
- Yale
- UCSD
- Lesley University
- University of Missouri
- University of Arizona
- University of San Francisco Law School
- University of Bangor
- University of Toronto
- Aberystwyth
- Duke
- University of British Columbia
- Penn State
- Vanderbilt
- Edinburgh
- Antioch University
- UMass
- Berkeley
- University of Miami
- Georgetown
- Monash
- University of Kansas
Mindfulness Journal Publications by Year, 1980-2016

Year
1980 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
Number of Publications
700 600 500 400 300 200 100 0
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700
American Mindfulness Research Association, 2017
Source: go4MRA.org

3,129 Total!
Parts of a Neuron

- **Nucleus** – the control center or brain of the cell
- **Dendrites** – connections/receive information from other neurons
- **Axon** – conductor of electricity, relays the signal from the dendrites
- **Axon Terminals** – transmit information to other neurons

Cell Body
Making a Connection

Neural Pathway - feeds information to and from the brain and within the brain.
THALAMUS

- Sensory Input
- Signal Relay
AMYGDALA

- Survival
- Fight or Flight
HIPPOCAMPUS

- Emotion control
- Memory
PREFRONTAL CORTEX

- Reason
- Logic
- Decision Making
- Compassion & Empathy
- Language Production
Positive Stimulus Examples
Negative Stimulus Examples
“Real” Danger
Negative Stimulus Examples
“Perceived” Danger
NEGATIVE Stimulus → Thalamus → Amygdala → FIGHT OR FLIGHT

AMYGDALA HIJACK!

14 milliseconds
The first step to practicing mindfulness is to be aware of our body. We can do this by paying attention to our senses – What am I feeling and where am I feeling it?
Physiology of the Fight or Flight Response

- Inability to Focus or Concentrate
- Tunnel Vision
- Blushing
- Tightness in Chest
- Butterflies in Stomach
- Need to Urinate
- Sweating
- Dizzy or Light-Headed
- Dry Mouth
- Difficulty Breathing or Swallowing
- Heart Pounding
- Nausea or Diarrhea
- Muscle Tension
- Trembling or Shakiness
CHANGE

OUCH

THIS IS TOUGH!
Biology of Emotions: The Autonomic Nervous System

During and emotional experience, our anomic nervous system mobilizes energy in the body that arouses us.

<table>
<thead>
<tr>
<th>Autonomic Nervous System Controls Physiological Arousal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sympathetic division (arousing)</td>
</tr>
<tr>
<td>Pupils dilate</td>
</tr>
<tr>
<td>Decreases</td>
</tr>
<tr>
<td>Perspires</td>
</tr>
<tr>
<td>Increases</td>
</tr>
<tr>
<td>Accelerates</td>
</tr>
<tr>
<td>Inhibits</td>
</tr>
<tr>
<td>Secrete stress hormones</td>
</tr>
<tr>
<td>ADRENAL GLANDS</td>
</tr>
<tr>
<td>Decrease secretion of stress hormones</td>
</tr>
</tbody>
</table>
THOSE THAT KNOW, DO. THOSE THAT UNDERSTAND, TEACH.

Aristotle
Greek philosopher and polymath
(384 BC - 322 BC)
Think, Pair, Share
How STRESS affects the body

- 60-80% of all primary care visits are stress related.
- 3% get management help.
- 42 percent of Americans report lying awake at night from stress, the American Psychological Association reported in 2013.
Stress Shrinks the Neural Network

Normal  Stressed
Effects of Daily Stress and the Brain

- Shrinkage of the hippocampus (memory/emotional regulation)
- Inhibited connection/shrinkage to pre-frontal cortex (Decrease in cognitive function)
- Creates free radicals killing brain cells
- Increases size, activity level, neural connections in amygdala (fight/flight/freeze)
- Halts production of new brain cells
- Reduced serotonin and dopamine (anxiety, depression, ADHD, addiction)
- Permeable blood brain barrier (brain cancer, infections, multiple sclerosis)
Impacts of Stress on Groups

- Communication Breakdown
- Decreased Morale
- Deteriorating Group Cohesiveness
- Increased Absenteeism
- Increased Healthcare Costs
- Increased Workers Compensation
- Increased Disability Claims
- Decreased Retention/Increased Turnover
- Decreased Efficiency and Productivity
“Between stimulus and response there is space. In that space is our power to choose our response. In our response lies our growth and freedom.”
-Viktor E. Frankl
Driver cuts you off
Wake up
Late
Drive to work
Afternoon
Internet Issues at School
Challenging Student
Frustrated Parent Phone Call
Tiny Unimportant Situation
Hijack Accumulation
Amygdala Hijack
Morning Home
Think, Pair, Share
Mindfulness Practice: Attention To Breath (ATB)

The University of Muchen in Germany Department of Neuroradiology did a controlled study with that showed after two weeks of practicing Mindfulness Attention to Breath (ATB) there were changes in participant’s brains with fMRI.
Practice: Anchor Breathing
Practice: First, Just Breathe

“F” stands for FIST. Relax your hands.

“J” stands for JAW. Relax your jaw.

“B” stands for BREATHE. Take a deep breath.
The Body Scan

Benefits
- Improves concentration
- Cultivates awareness
- Power to heal
- Understand how stress affects your body
- Greater capacity to listen to its wisdom

(Kabat-Zinn, 2008, p. 75)
How much longer?
My nose itches!
I should check my email..
Do I look serene yet?
<table>
<thead>
<tr>
<th>Breath</th>
<th>Body</th>
<th>Thoughts</th>
<th>Feelings</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I am breathing in. I am breathing out.”</td>
<td>Place hand on tummy, feel it rise with the in breath and fall with the out breath.</td>
<td>Double the exhalation of your breath. Breathe in 1, 2, breathe out 1, 2, 3, 4. Breath in 1, 2, 3, breathe out 1, 2, 3, 4, 5, 6 etc.</td>
<td>Ask yourself “where are my feet?”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stretch your hands out to wake up the nerves. Gently place them on your knees. What do you feel?</td>
<td>Practice a mindfulness body scan paying attention to the different parts of your body from the tips of your toes to the top of your head. What sensations do you notice?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Count backwards from 10.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Notice what you are thinking. Allow the thoughts to come and go like clouds in the sky.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Identify any emotion you are experiencing. Where do you feel it in your body? e.g. “I am feeling anxious. I can feel my heart beating quickly.” “I am feeling sad. I can feel a weight in my chest.”</td>
</tr>
</tbody>
</table>
Mindful Eating
Mindful Eating

Our stomach takes 11 minutes to tell our brain that it is full.
Vagus Nerve

- The longest and most complex nerve in the body.
- A nerve that runs from the brain, travels through major organs into the lower intestine and reproductive system.
- A nerve that is a major player in the parasympathetic (calming) nervous system.
80% of your immune system lives in your gut.

100 million neurons located in the gut.
Mood in young adults (18-29) seems to be dependent on food that increases availability of neurotransmitter precursors and concentrations in the brain (meat).

Mood in mature adults (over 30 years) may be more reliant on food that increases availability of antioxidants (fruits) and abstinence of food that inappropriately activates the sympathetic nervous system (coffee, high glycemic index and skipping breakfast).
Creating a Mindful Classroom
Maslow’s Hierarchy of School Needs

- **Physiological**
  - Basic Needs Are Met
    - Eats breakfast, has clean clothing, safe place to go home, able to sleep

- **Safety**
  - Emotional and Physical Safety
    - Clear school/class routines, access to counselors/nurse, ok to take risks

- **Belonging**
  - Forming Relationships
    - Advisory, adult role models, friendship groups, peer relationships

- **Esteem**
  - Positive Classroom Culture Present
    - Positive feedback, time for reflection, encouragement to take risks

- **Self-Actualization**
  - Student Is Available to Learn
Environmental Considerations: Seating
Environmental Considerations: Lighting
Environmental Considerations: Sounds


Environmental Considerations: Smells

Air Cleaning Plants

Essential Oils
The Power of Compliments
INCREASED HAPPINESS WHEN EXPRESSING GRATITUDE WITH SOMEONE

Gratitude Increases Overall Happiness

In two studies with 243 participants, those who were 10% more grateful had 17.5% more social capital.

In the Workplace
Researchers found that a simple “Thank You” can increase employee productivity by 50%.
GRATITUDE BOX

DROP YOUR GRATITUDE CARD INSIDE HERE

THANK YOUR CO-WORKER TODAY.

DO IT. MEOW.

ZONCAT
Mindfulness is neurorestorative brain fitness designed to improve executive function. It is training the brain to have focused attention and increased emotional regulation.
Neural Pathways

Every time you learn something, neural circuits are altered in your brain. The more you repeat the activity the stronger these connections become.
# The Ladder of Inference

<table>
<thead>
<tr>
<th>Data</th>
<th>1. What?</th>
<th>I select from observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meanings</td>
<td>2. So What?</td>
<td>I make based on meanings</td>
</tr>
<tr>
<td>Assumptions</td>
<td>3. Now What?</td>
<td>I adopt about the world</td>
</tr>
<tr>
<td>Conclusions</td>
<td></td>
<td>I draw</td>
</tr>
<tr>
<td>Beliefs</td>
<td></td>
<td>I take based on beliefs</td>
</tr>
<tr>
<td>Actions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reflexive Loop**

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**Observable data and experiences**

Adapted from Chris Argyris, Harvard
Closing

• Please complete the evaluation for this breakout session by using the NEA Summit Mobile App! (Allow at least 5 minutes at the end of the session.)

• Please visit the Leadership Development Resources website at www.nea.org/leadershipdevelopment