

Meditation, Critical Thinking and Critical Inquiry in Higher Education: A Case Study

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- Critical thinking is one of the most important skills for college graduates to become effective contributors in the global workforce

(Liu, Frankel, & Roohr, 2014)



Problem

- Critical thinking is rare in the college classroom
(Paul, 2004)
- Meditation can help students notice preferences, biases, and perspectives
- Less limited viewpoints
- When a student is not limited by their viewpoints, it may help critical thinking
(Shapiro, (Brown, Astin, & Duerr, 2008)



Having less limited viewpoints may help skills such as:

- Testing what's true
- Recognizing concealed principles
- Forming ideas from available information
- Evaluating the result of a process



(Shapiro, Brown, Astin, & Duerr, 2008)

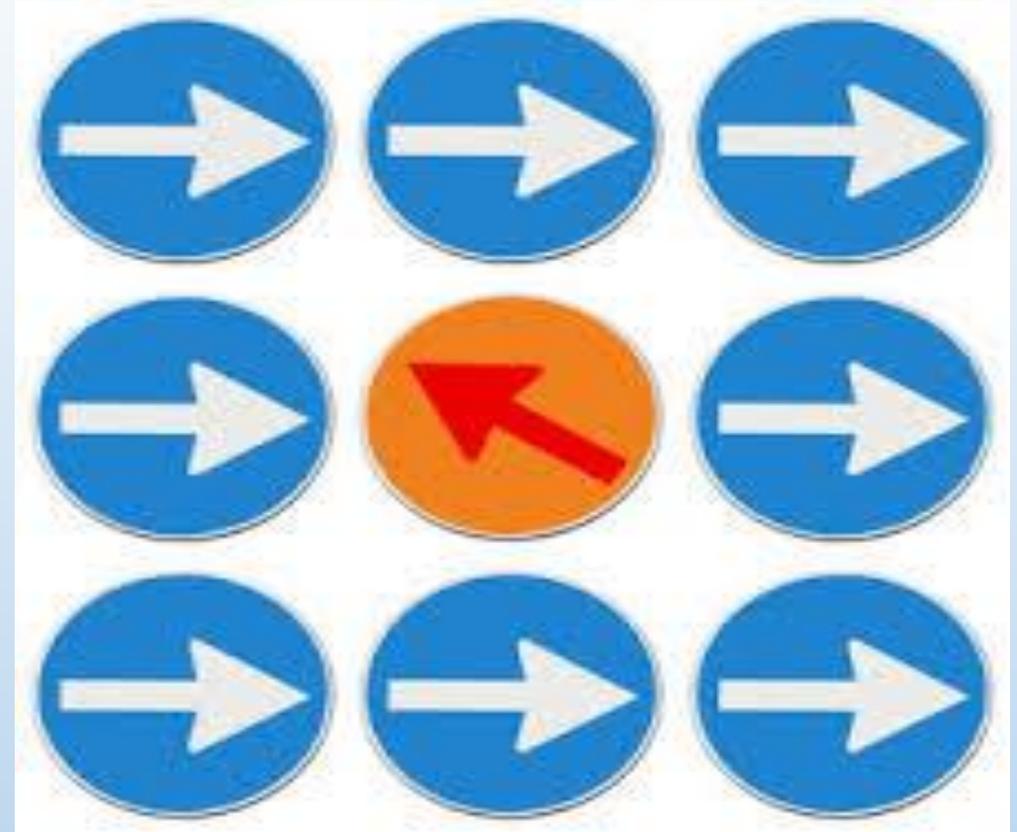
- In a study by Helber, Zook, & Immergut (2012)



- Amount of time spent meditating was related to improvement of **executive cognitive functions**

Executive Functions

- Setting goals
- Planning
- Self-monitoring
- Memory
- Language
- Attention and perception
- Ability to exert conscious control to find answers to problems
- Ability to decide what to do during new sets of circumstances



Purpose

To examine participants' perceptions on meditation related to critical thinking

Research Question

How do higher education students describe their experiences with critical thinking related to meditation, before and after the prescribed meditation program?



Context

- **Critical Thinking** - Conceptualizing, applying, analyzing, synthesizing, and evaluating information, from observation, experience, reflection, reasoning, or communication

(Scriven, 1996)

- Reflection may be beneficial to learning

(Schlichting & Preston, 2014)

- Study may provide information related to learning processes and techniques, and improve school outcomes



8 Characteristics of Critical Thinking:

- Asking questions
- Defining a problem
- Examining evidence
- *Analyzing assumptions and biases*
- Avoiding emotional reasoning
- Avoiding oversimplification
- *Considering other interpretations*
- *Tolerating ambiguity*



Wade (1995)

Method

- Qualitative, case study (Yin, 2013)
- "Case study allows investigators to retain holistic, meaningful characteristics of real-life events" (Yin, 2003)
- Case studies offer "opportunity for holistic view of a process" (Patton & Appelbaum, 2003)



Bounded in time by 8 weeks

- **8 weeks** = Mindfulness-Based Stress Reduction Program
- MBSR for 8 weeks showed differences in brain, connected with *sense of self, memory, stress, and empathy*
- changes in grey matter related to *memory, learning, taking other perspectives, and regulating emotion*

([Hölzel](#), Carmody, Vangel, Congleton, Yerramsetti, Gard, & Lazar, 2011)



Method

- Perspectives of 10 undergraduate higher education students



- Describing their experiences with critical thinking related to meditation

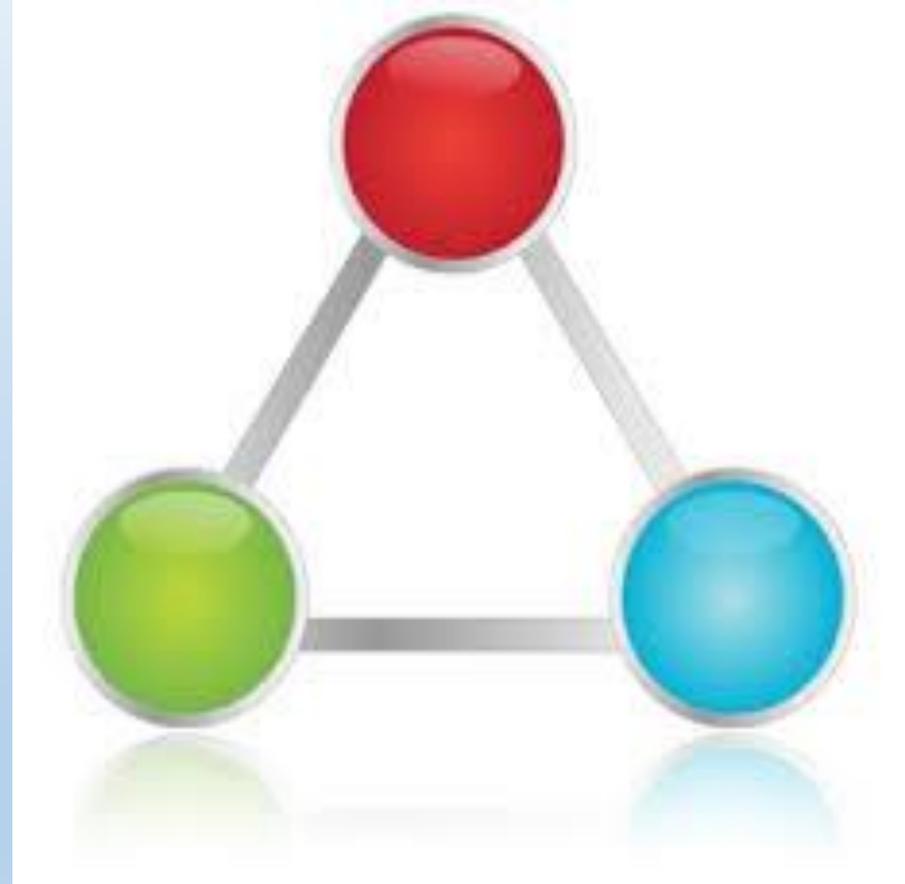
Method

- Demographic survey online
- Online critical thinking activity
- Two 20 minute open-ended phone Interviews
(based on research, recorded at [FreeConferenceCall.com](https://www.FreeConferenceCall.com))
- Meditation instruction link & 1 page description
- Journals
- Field notes



Triangulation accomplished with:

- 1) Interviews
- 2) Participant journals
- 3) Field notes



Method

- Find themes characteristic of the case (Seamon, 2000)



- Rich description of participants' experience (Pollio, 1997)

Participants

- 10 Undergraduate higher education students
- Recruited - 2 local universities
- 18 years or older
- Do 10 minutes of meditation a day, 4 days a week for 8 weeks



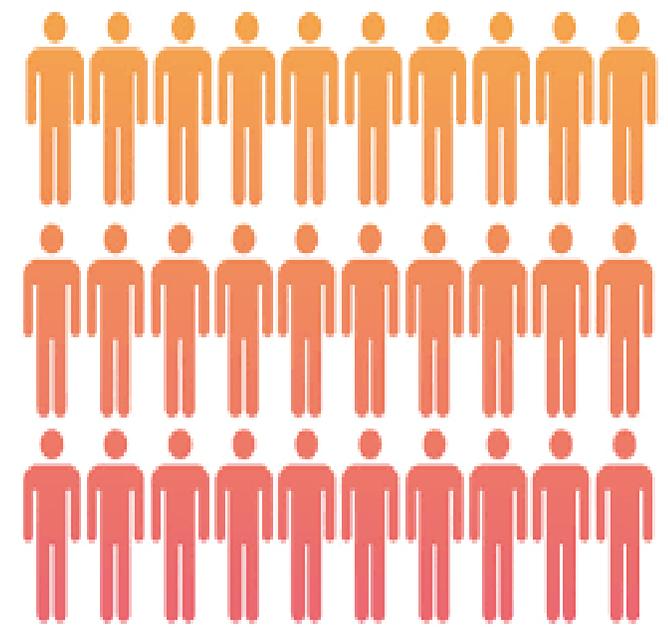
Participant Recruitment



- University of the Arts Student Forum
Facebook page
- Global email - Drexel University education students
- Wanted to learn how to meditate
- Those who finish receive meditation CD set

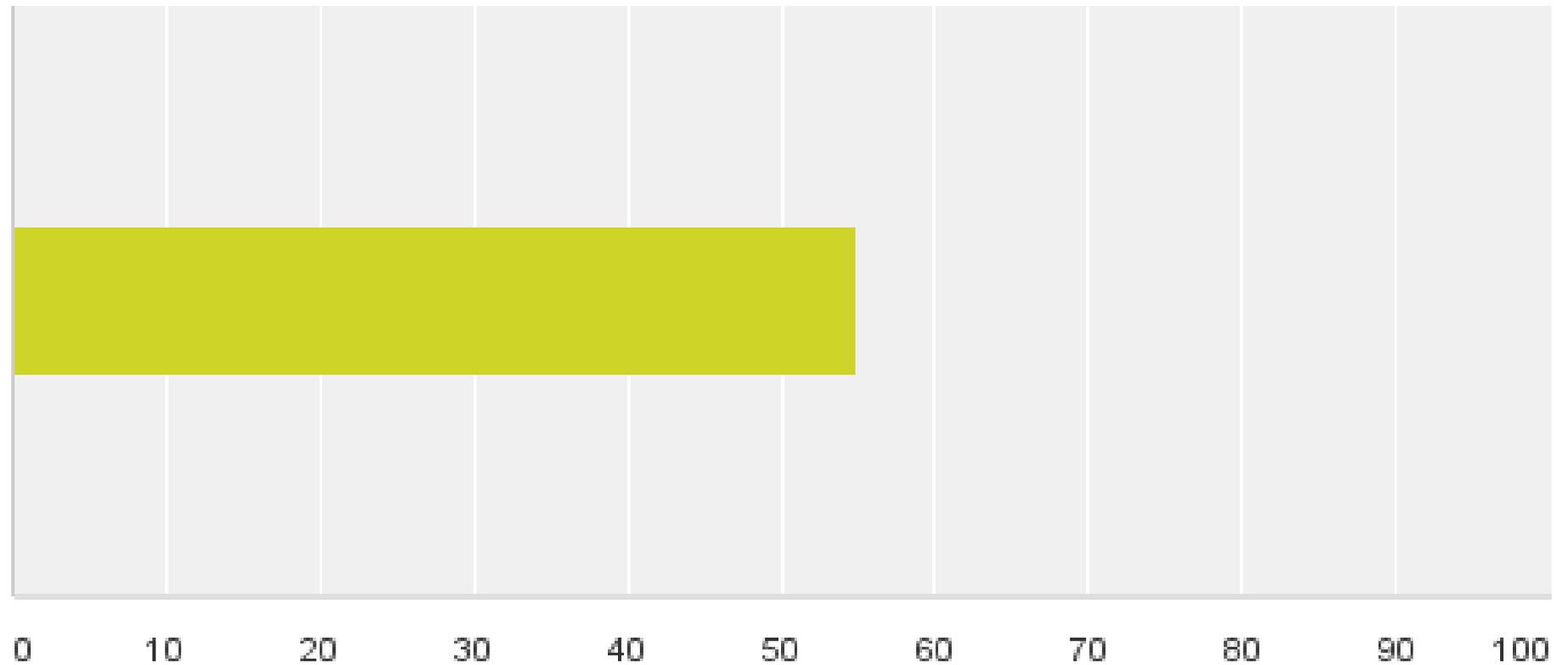
Demographic Survey

- Age: between 18 – 30___, between 31 – 40___, between 41 – 50___
- Gender: M___, F___
- Rate yourself at solving problems
- Rate yourself on being focused
- Rate yourself on how you adapt to change
- Rate your willingness to do the online activity
- Rate your effort in completing the online activity
- Rate the amount of care you took completing the online activity
- Rate yourself on being accepting of new situations
- Rate your memory
- Rate your stress level
- Rate your empathy



Q15 Rate yourself on being accepting of new situations, where 100 is good and 0 is poor

Answered: 4 Skipped: 2



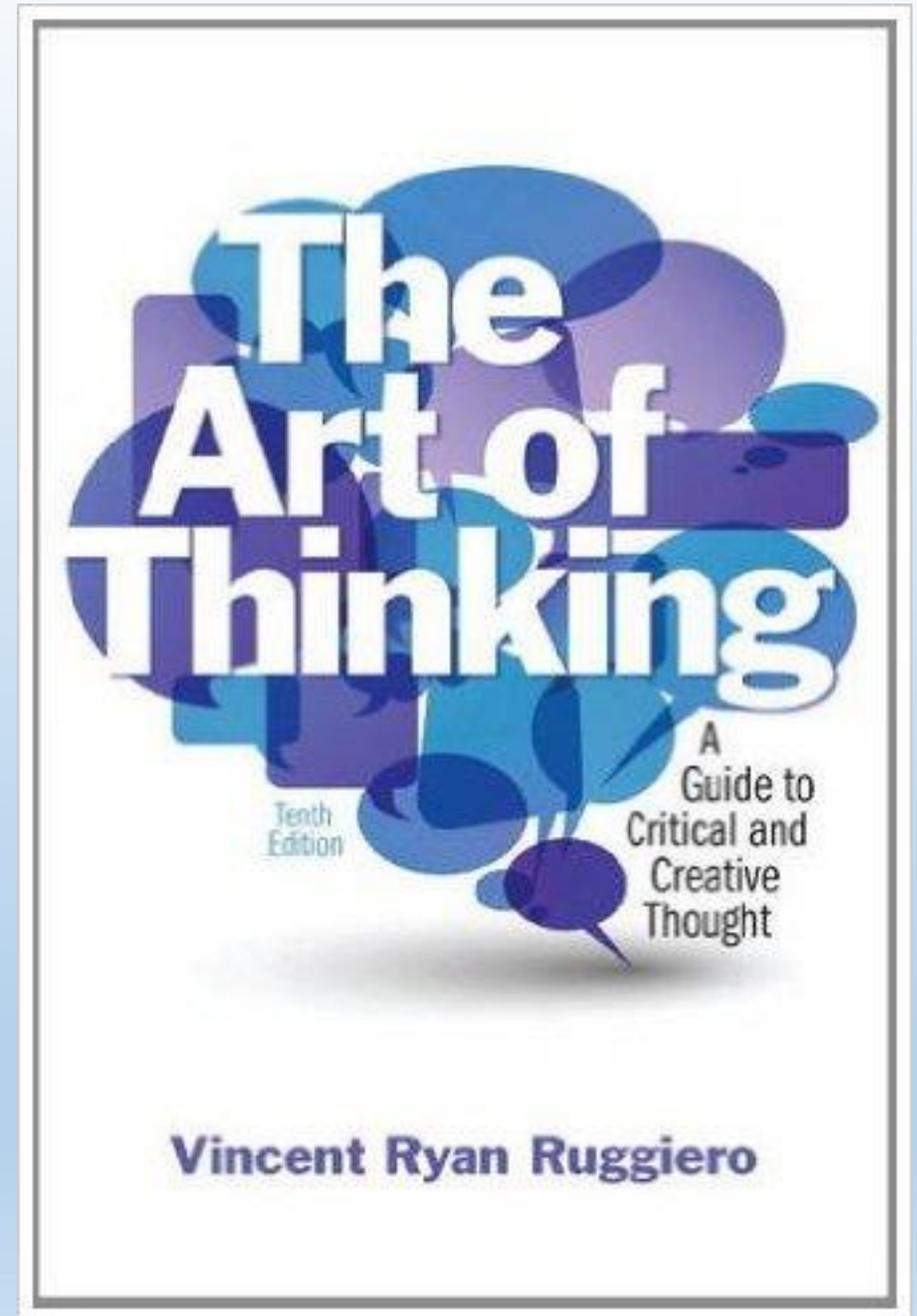
Survey Results

- Empathy = 72
- Stress level = 83
- Memory = 70
- Solving problems = 74
- Being focused = 64
- Care taken doing critical thinking activity = 80
- Effort in completing critical thinking activity = 93
- Willingness to complete activity = 96
- Accepting of new situations = 55
- Adapting to change = 98



Critical Thinking Activity

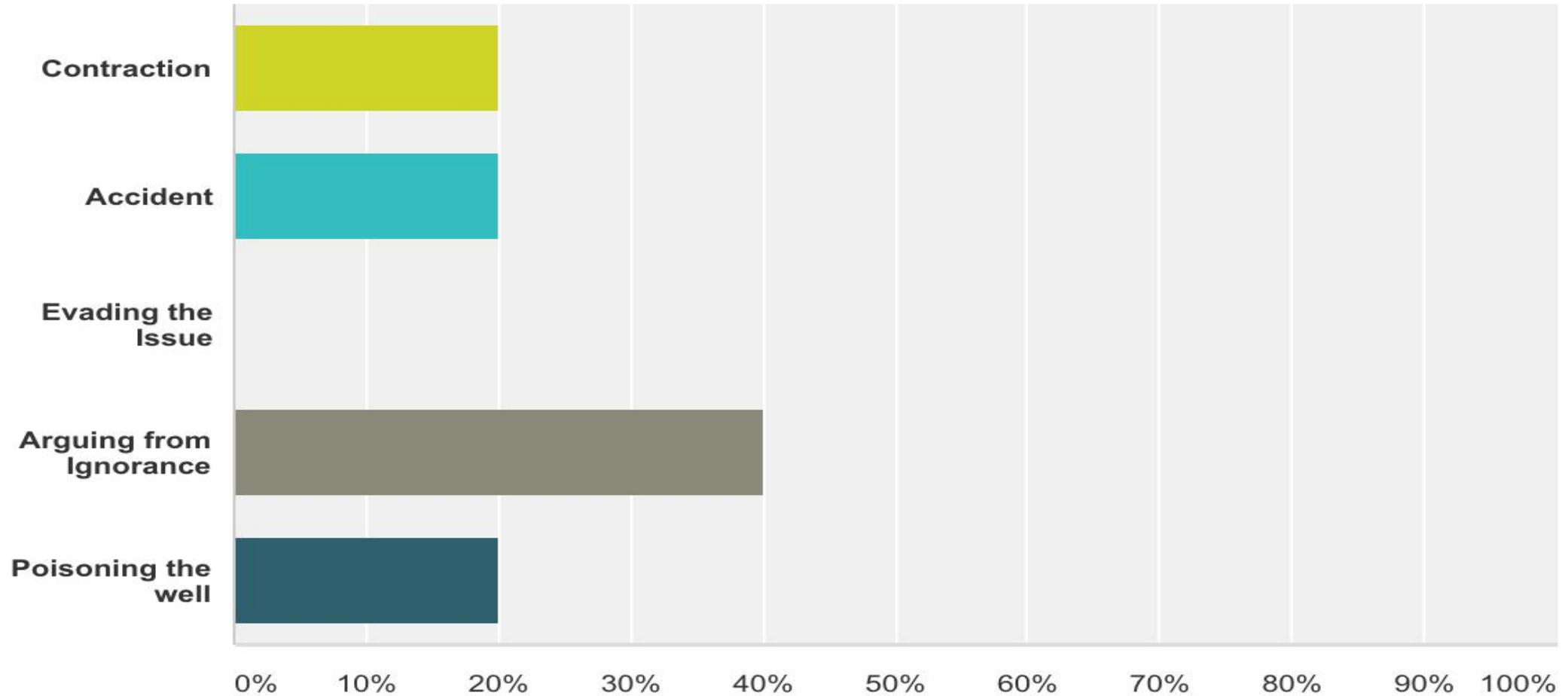
- Flawed Argument Exercise
- Ruggiero, V . (2012)



- Contradiction Presenting conflicting information
- Accident Basing an argument on an exception to a rule
- Evading the issue Changing the topic to avoid addressing the issue
- Arguing from ignorance Arguing that a claim is justified because its opposite has not been proven
- Poisoning the well Being so committed to a position that opposing positions are ignored

Smoking doesn't have anything to do with cancer. My grandma is 90, and she smokes a pack a day.

Answered: 5 Skipped: 1



- Do you feel you are successful in solving problems?
- Describe how you were able to focus during the online activity
- What relationships did you notice in the information given?
- Did you connect given concepts with other ideas or your life?
- Describe how you could carry out an activity to apply what you did to a situation in real life
- Describe how well you adapt to change



Interview Questions



- Describe how you accept new situations
- Describe the steps did you took
- Did you look at the activity from different perspectives?
- What did you experience that was new or different?
Explain
- Describe any ambiguity

Welcome! From this page you can access the meditation directions, the guided meditation and the journal.



1. Meditation Directions



2. Guided Meditation

Try to meditate 10 minutes a day, at least 4 days a week.

3. Weekly Journal

You can write in the journal once each week. Do not click on each week's journal unless you are ready to do it. Once you leave each journal page, you will not be able to re-access it.

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

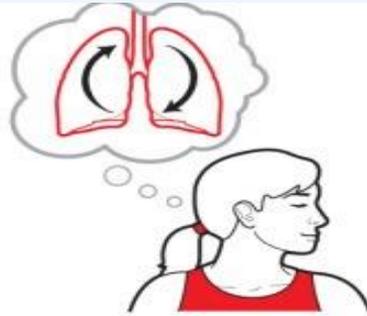
Learning to Pay Attention: 5 Steps to Mindfulness Meditation

Pickart, K., TIME magazine, January 23, 2014, Illustrations by Brown Bird Design for TIME



1.

Sit cross-legged on a cushion on the floor or in a chair. Keep your back straight and let your shoulders drop. Take a deep breath and close your eyes if you wish.



2.

Notice your breath. Don't change your breathing, but focus on the sensation of air moving in and out of your lungs.



3.

As thoughts come into your mind and distract you from your breathing, acknowledge those thoughts and then return to focusing on your breathing each time.

4.



Don't judge yourself or try to ignore distractions. Your job is simply to notice that your mind has wandered and to bring your attention back to your breathing.

5.

Start by doing this 10 minutes a day for a week. The more you meditate regularly, the easier it will be to keep your attention where you want it.



(adapted from [Full Catastrophe Living](#), 2nd edition, by Jon Kabat-Zinn, (1990, 2013))



Journal Week 1

Write about your reflections on your experiences this week:

during meditation
solving problems
focusing
bodily sensations
changes in your daily life
your feelings
relationships you noticed
anything that surprised you
what stood out for you
anything new or different



Journal Week 1

- “The only thing I noticed during the first week was how I got a sensation all over my body. I found it hard to focus and was often frustrated that I couldn’t keep my mind focused on the breath.”



Journal Week 2



“I discovered that doing these meditations right before bed helped me fall asleep...Usually before bed my mind wanders and races, and I panic about irrelevant things I shouldn't even think about. I started just putting all my attention on my breath and clearing my mind, and before I knew it I was asleep. I also have noticed I'm more calm.”

Themes

- **1) Critical thinking connects with Real Life Issues**

“I think it was a lot of issues that we deal with today, in today's society. I think I connected to seeing it a lot “



- **2) Open-mindedness helps Critical Thinking**

“I think people who are not open-minded can not thoroughly solve problems, because some people are so stuck in their own minds that they don't think of any alternative besides their own emotions. “

“They might come to a solution that works for them, but it might not work for anyone else. Whereas an open-minded person will see the big, big picture and will be able to think of other people “

- **3) Looking at Alternatives improves Critical Thinking**

“I arrived at my solution by first instinct, didn't try to think too much about it...I forget that there's other options with solutions, cause sometimes I just jump to the go-to solution, where I forget that there's other alternatives, that sometimes you do need to step back and think it through”. “I sat back and I thought, okay, what are things that I believe about what's happening, and if I was in that person's shoes, how would I handle it?”



- **4) Previous experience influences Critical Thinking**

“Who I am and what I've gone through caused me to answer differently than somebody else who has no idea about those things.”

Sub-Themes - Learning



- **A) Visual**

“I'm a very visual person. So what I see, I'm able to learn better”

- **B) Taking ownership**

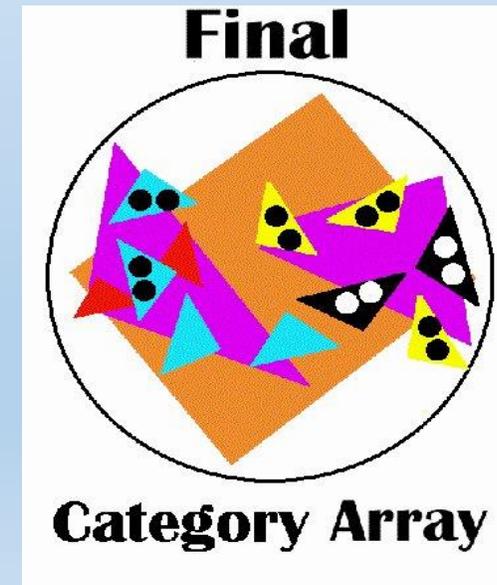
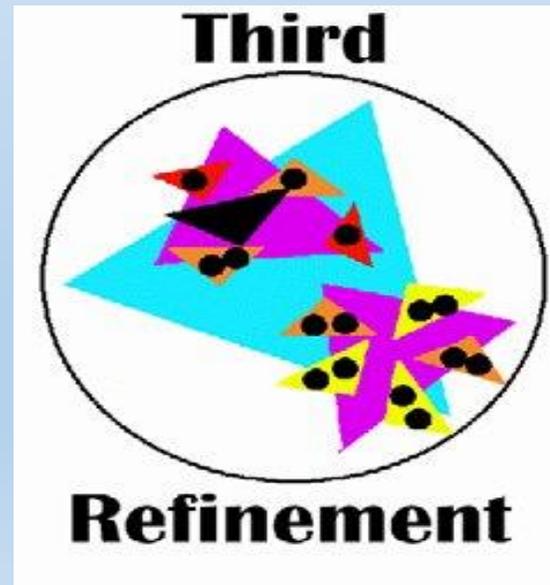
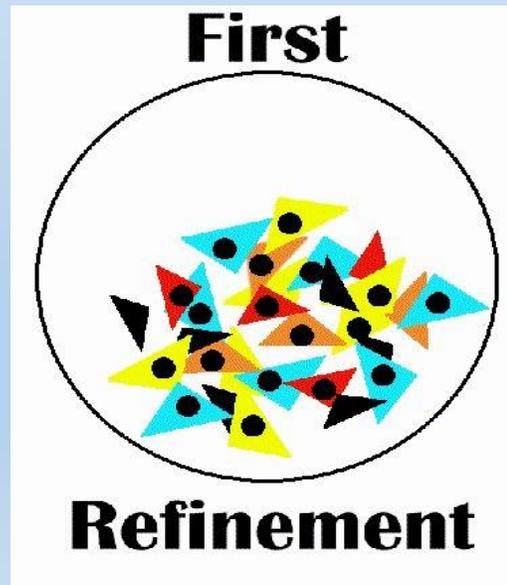
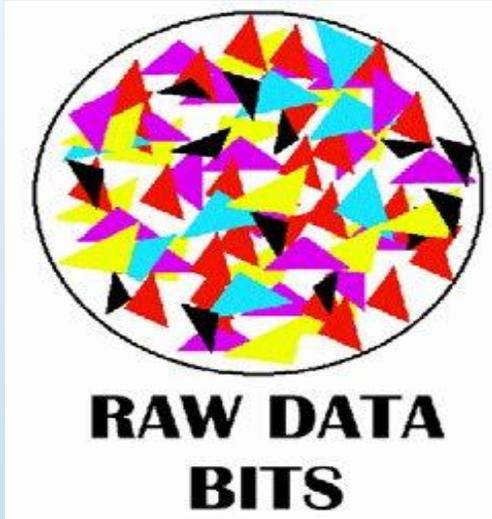
“I learn all of it better when it's more of my own”

- **C) Hands on**

“I learn better when it's hands on”

Constant Comparison Method

(Dye, Schatz, Rosenberg, & Coleman, 2000)



- open coding - initial organization of data
- axial coding - interconnecting categories



Implications



- **1) Critical Thinking Connects with Real life issues**

Supported by Reichenbach's steps (2000)

Implies critical thinking be connected with real life

- **2) Open-mindedness helps Critical Thinking**

Supported by Sternberg (1986)

Implies need for students to be open-minded

• 3) Looking at Alternatives improves Critical Thinking

Supported by Hölzel, Carmody, Vangel, Congleton, Yerramsetti, Gard, & Lazar

Implies students need to learn to see alternate perspectives



• 4) Previous experiences influence Critical Thinking

Supported by Greenberg, Reiner, & Meiran (2012).

Implies students need to not be blinded by past experiences

Questions

