



# Meditation

## Critical Thinking and Critical Inquiry in Higher Education

### Project Description

Critical thinking is one of the most important skills necessary for college graduates to become effective contributors in the global workforce. (Liu, Frankel, & Roohr, 2014). The general problem is that critical thinking is rare in the college classroom (Paul, 2004). Meditation can help students in higher education learn to bring attention/awareness to preferences, biases, and mental perspectives, so as not to be caught in limited viewpoints or perspectives (Shapiro, Brown, Astin, & Duerr, 2008). When a student is not wholly defined by, and potentially limited by their viewpoints, it may aid in the development of critical thinking skills, such as testing what is true, recognizing concealed principles, forming ideas on available information, and evaluating the result of a process (Shapiro, Brown, Astin, & Duerr, 2008). In a control meditation group, the length of time participants meditated was predictive of the level of their executive function improvement. Executive functions involved setting goals, planning, and self monitoring, as well as memory, language, attention and perception including being able to exert conscious control to find answers to problems and decide what to do during new sets of circumstances. Results suggested that quantity of time spent meditating was related to quantity of improvement of the executive cognitive functions (Helber, Zook, & Immergut, 2012). Reflective practice is of great importance related to modern world view, and that mindfulness practice is a subsequent exciting trend in the development of systematized knowledge (<http://www.cpe.vt.edu/cpts/index.html>, retrieved 10/13/15).

### Purpose

The purpose of the study is to examine participants' perceptions on meditation related to critical thinking and critical inquiry. This qualitative case study will involve 10 to 20 higher education students. Participants will agree to do 10 minutes of meditation a day before participating in the online class activity, 4 days a week for 8 weeks. At the beginning and end of the study higher education students will participate in open-ended interviews related to critical thinking and critical inquiry. The location of the study will be Drexel University, and students will be solicited through Drexel University Department of Education. The interviews will be done by phone and recorded.

*Research question:*  
How do higher education students describe their experiences with critical thinking and critical inquiry related to meditation, before and after the prescribed meditation program?"



### Research Methods and Design

The method for the current study is qualitative, and the design is a holistic case study (Yin, 2013). The case study is bounded in time by 8 weeks because eight weeks is the amount of time that research has shown resulted in differences in parts of the brain connected with sense of self, memory, stress and empathy (Hölzel, Carmody, Vangel, Congleton, Yerramsetti, Gard, & Lazar, 2011). Their study suggested that the 8 weeks of mindfulness meditation training was related to changes in grey matter in parts of the brain related to memory, learning, taking other perspectives and regulating emotion (Hölzel, Carmody, Vangel, Congleton, Yerramsetti, Gard, & Lazar, 2011).

The current qualitative research will involve looking at the points of view of participants, 10 to 20 higher education students. Holistic case study will be utilized to describe the descriptions of participants on critical thinking and critical inquiry related to meditation, both before and after the intervention of meditating for 10 minutes a day before the online class activity, 4 days a week for 8 weeks. The instrument will be open-ended phone interviews developed based on the previous studies. Results of research studies by Reichenbach, Van Erp, Goebig, and Samara were examined, and were used as a base for the interview questions for the current study (Reichenbach, 2000, Van Erp, 2008, Goebig, 2013, & Samara, 2002). Interviews will include "Critical Incident Technique" questions (Flanagan, 1954). Participant journals (see Appendix D) and online surveys will also be used. The journals will be written weekly online by participants to reflect on their meditation experience. The online surveys were developed based on results of research studies by Greenberg, Reiner, and Meiran, Samara, Hölzel, Carmody, Vangel, Congleton, Yerramsetti, Gard, and Lazar, and Van Erp (Greenberg, Reiner, & Meiran, 2012; Samara 2002, Hölzel, Carmody, Vangel, Congleton, Yerramsetti, Gard, & Lazar, 2011; Van Erp, 2008). The phone interviews will be recorded and transcribed. The data analysis will be done manually using the interview transcripts and the constant comparison method (Dye, Schatz, Rosenberg, & Coleman, 2000). Triangulation will be accomplished with the three data collection technique: 1) in-depth interviews, 2) participant journals, and 3) field notes (Yin, 2013). The interview transcripts will be triangulated with first person experience documented through field notes throughout the study (Chaffin, 1989), and compared with previous research. Case study allows the description of human experience. The critical thinking activity will be the flawed argument exercise (Ruggiero, 2012).

The mind is the friend of those who have control over it,  
And the mind acts like an enemy for those who do not control it.  
-Bhagavad Gita

### Anticipated Goals

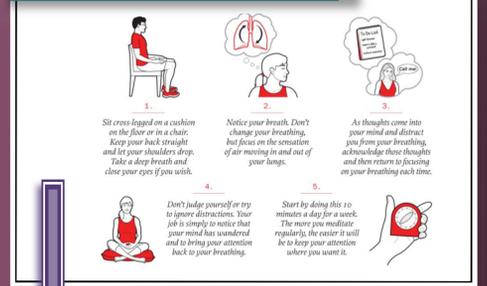
The goal of the current case study is to look at and describe the human events and experiences of participants' daily lives related to meditation and critical thinking, and their meanings (von Eckartsberg, 1998). The purpose of the current study will be to report and interpret a rich description of participants' experience related to meditation and critical thinking (Pollio, 1997). The goal will be to find themes that are characteristic of the case, meditation related to critical thinking (Seamon, 2000). The case study will provide an intensive description and analysis of the group of participants. According to Yin (2003), a case study design should be used when the study answers "how?" and "why?" questions. The current study will look at the question: How do higher education students describe their experiences with critical thinking and critical inquiry related to meditation, before and after the prescribed meditation program?

more serious.

### Implications

The current case study will be significant because although there is quantitative research on reflection improving learning from the perspective of neuroscience (Schlichting & Preston, 2014), there is a gap in the literature on the qualitative experience and descriptions of participants themselves with meditation and critical thinking (Lutz, Dunne, & Davidson, 2007). Results of the current study may provide guidelines, practices, and resources for educators in higher education to improve students' critical thinking and critical inquiry skills.

### Treatment



### A Survey

- 1) Age : between 18 – 30\_\_\_, between 31 – 40\_\_\_, between 41 – 50\_\_\_
- 3) Gender : M\_\_\_, F\_\_\_
- 4) Rate yourself at solving problems (1-10)
- 2) Rate yourself on being focused (1-10)
- 3) Rate yourself on how you adapt to change (1-10)
- 4) Rate yourself on being accepting of new situations (1-10)
- 8) Rate your willingness to do the online activity (1-10)
- 9) Rate your effort in completing the online activity (1-10)
- 10) Rate the amount of care you took completing the online activity (1-10)
- 11) Rate your memory (1-10)
- 12) Rate your stress level (1-10)
- 13) Rate your empathy (1-10)

### B Interview

- 1) Do you feel you are successful in solving problems?
- 2) What body oriented sensations did you notice as you completed the online activity? Describe
- 3) How did you feel while completing the online activity? Emotions?
- 4) Describe your mental activity during the online activity
- 5) Describe how you were able to focus during the online activity.
- 6) Describe how you identified the issue and the main points.
- 7) Did you break the online activity into parts? Why? Describe
- 8) What relationships did you notice in the information given?
- 9) Did you connect concepts with other ideas? Explain
- 10) How did you evaluate information given to decide on a solution? Describe the process
- 11) How did you arrive at your solution?
- 12) Describe how you could carry out an activity to apply what you did to a situation in real life.
- 13) Explain why you solved the problem in this particular way.
- 14) Did you have trouble during the online activity? Describe
- 15) Describe what was easiest for you in this activity.
- 16) Describe what was difficult.
- 17) Describe how well you adapt to change.
- 18) Describe how you accept new situations.
- 19) Do you think you would have come to a different solution under a different circumstance? Explain
- 20) Describe any contextual factors that influenced you during the online activity.
- 21) Describe your thoughts on how reflection and open mindedness relate to critical thinking.
- 22) Describe your sense of self

### References



Jean Plough, PhD., Principal Investigator

Ann Armstrong, PhD., John Avella, PhD., Alicia Holland, PhD., Melissa McCartney, EdD.

University of Phoenix

