

# The Study of Mindfulness

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## Background

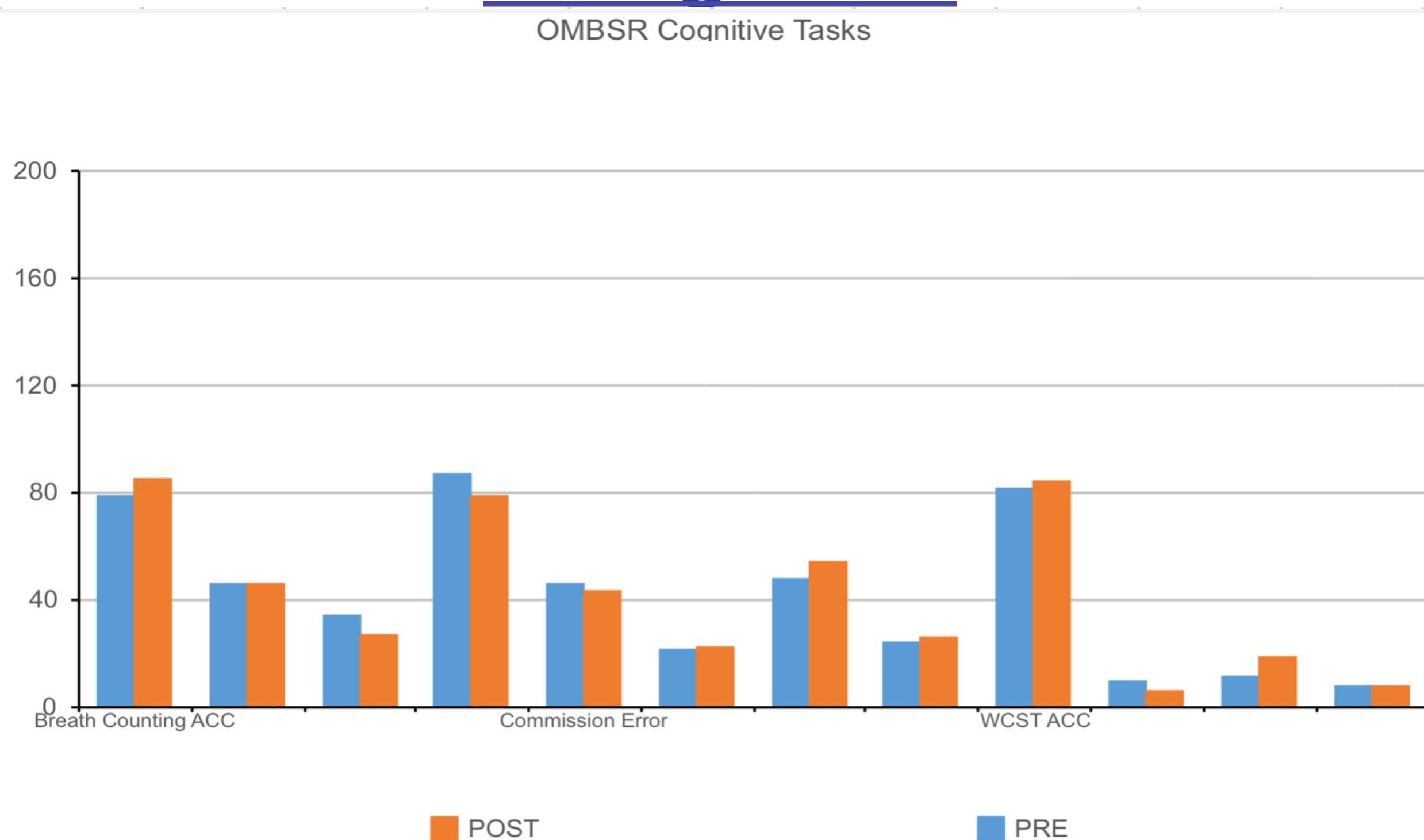


Figure 1: This graph depicts behavioral measures of Washington University college freshmen pre and post-MBSR class. The results showed a significant difference in two tasks measuring executive function- the WCST & Letter Sets tasks.

## INTRODUCTION

Interest in mindfulness as a means to increase emotional regulation has grown in recent years. In short, to be mindful means to be aware. We often find ourselves oblivious to the current moment as we live our day to day life, and stress- which can be physical, emotional, or psychological- often disrupts attempts at mindfulness. Although recently increasing in popularity, mindfulness meditation practices have existed for more than 2000 years and originated in Buddhist practices. Meditation has been further developed as a treatment option. In recent studies, participants have been trained to regulate their emotions through mindfulness meditation. Mindfulness training has been hypothesized to change an individual's relationship to his or her emotions. In mindfulness training, emotions are viewed "not as fundamental constituents of self, but rather as more fleeting phenomena that appear to the self" (Davidson, 2010). The relationship between mindfulness and emotion regulation is not yet fully understood. Catherine Tang, a graduate student in the CCP lab, states that "mindfulness training elicits reappraisal to regulate emotion rather than suppression during practices" (Tang, 2018). Mindfulness is also being investigated in its effects on cognitive control. A Mindfulness-Based Stress-Reduction (MBSR) course is operated as part of a larger study in the Cognitive Control & Psychopathology (CCP) lab examining the neurological and behavioral components of cognitive control. The MBSR intervention was designed to study the neural and behavioral effects of mindfulness. Participants were enrolled in an 8-week course that assisted with certain types of meditation such as mindful movement, breathing meditation, body scan, etc. In this study, we look at the subjective experience of participants in the MBSR class.

## PREDICTIONS

We are studying the effects of a Mindfulness-Based Stress-Reduction class on both twins and local healthy young adults. We want to know if there are differences between the MBSR classes and participants' experiences while in the MBSR course. If class experience differs, class assignment will be an important factor to consider in pre-post class analyses. We are also interested in the relationship between class experience and practice. It may be that participants who enjoy the class more are practicing more at home and may experience greater effects of mindfulness.

## METHODS

Twins were randomly assigned to take the course or be a "waitlist" control. Participants met one time a week for two and a half hours over the course of 8-10 weeks. For the other days during the week, they are instructed to practice meditation practices in any given category. These categories included yoga, body scan, mindful breath and everyday activities. Participants were given a feedback forms to fill out after the class. We compared the feedback form responses between classes using a T- test and ANOVA. Excel was used to calculate the averages and standard deviation for each class and overall score for the course.

## RESULTS

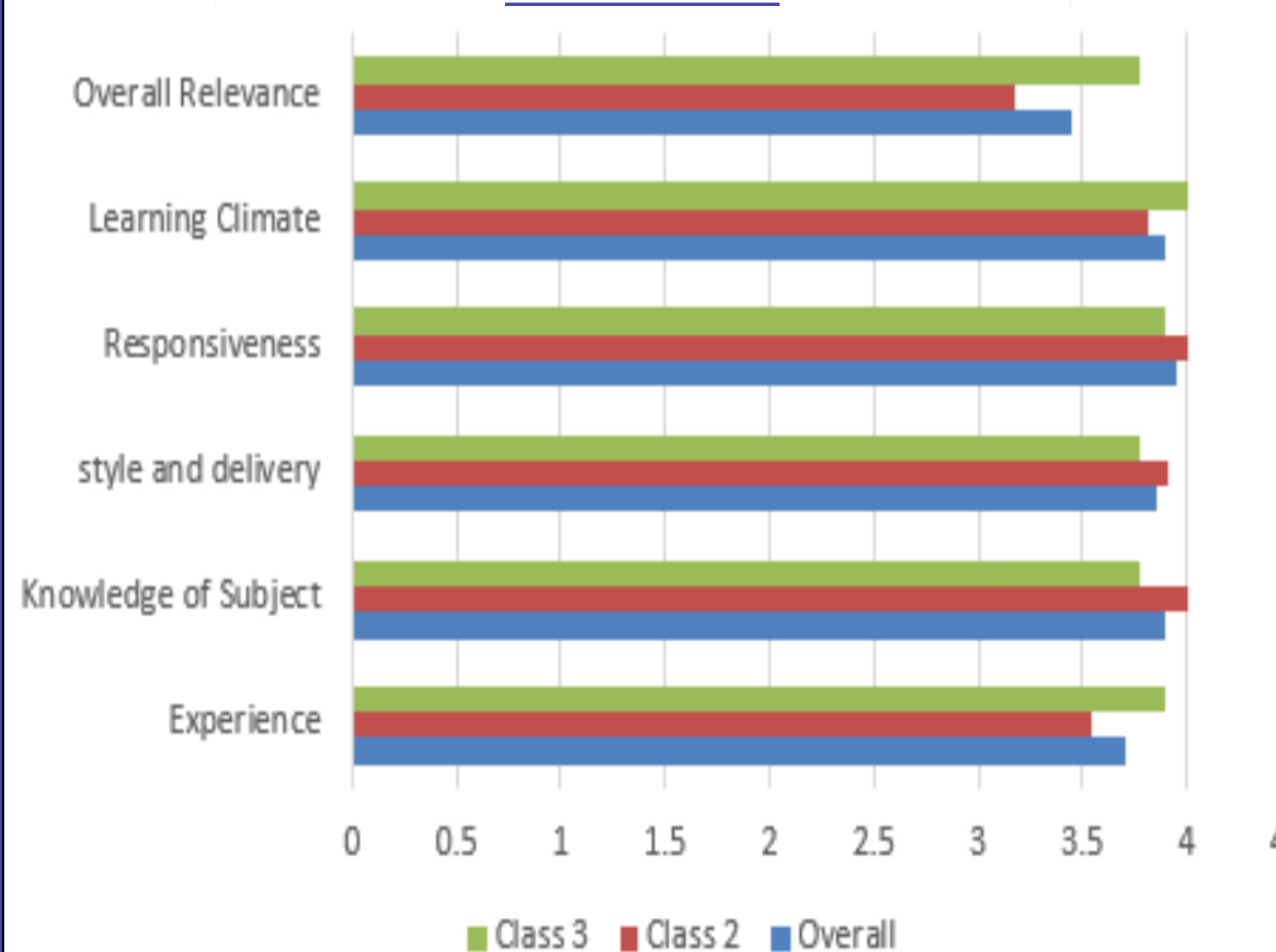


Figure 2: The results from the MBSR feedback forms. Participants rated each domain on a 1-4 scale.

## Discussion and Future Works

No differences in the ratings the between the two classes were statistically significant. Both classes are satisfied with the instructor, overall course experience, and application to their lives. The Mindfulness-Based Stress-Reduction course is showing to have subjective positive ratings for both classes. The statistical analysis of the data shows that there is no difference as a whole between both classes. Future work involves comparing the neuroimaging data and behavioral scores to verify links between brain areas that are involved in mindfulness meditation and behavioral results of the MBSR class on practice scores. It also involves determining whether participants' practice scores correlate to motivation and interest in class.

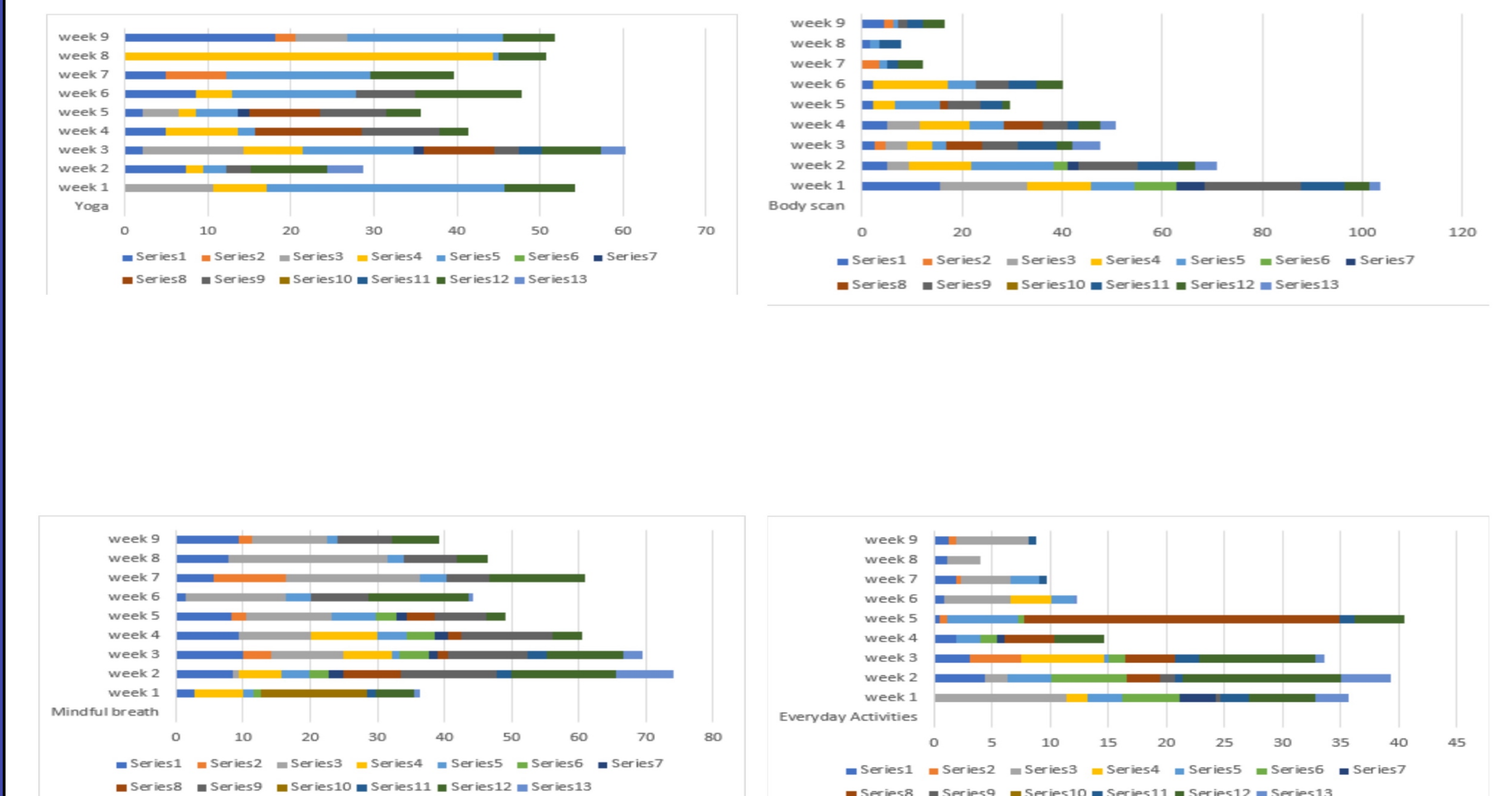


Figure 3: The Graphs that are depicted are the averages of the 4 categories: Yoga (upper left), Body Scan (upper right), Mindful Breath (lower left), and Everyday activities (lower right). Next steps involve using the practice scores to determine if there is an exposure-response relationship in the behavioral or neural effects of mindfulness.

## Acknowledgements

Special thanks to Professor Todd Braver, Maria Gehred, and Carol Cox. Also, everyone in the Cognitive Control and Psychopathology lab at Washington University. I would also like to thank the whole Psychological and Brain Sciences department at Washington University. Lastly I would like to thank Dr. Detric Carter and MOLSAMP for an amazing opportunity to grow and learn.

## References

- Davidson, R. (2010). Empirical explorations of mindfulness: Conceptual and methodological conundrums. *Emotion*, 10(1), pp.8-11.
- Tang, C. (2018). *Mindfulness Training Research*.