

Bio-Psychology Research Project
Scientific Study of Visualization Program Effectiveness
Core Faculty Member: Dr. Benfield
Supplementary Faculty Members: Dr. Devlin and Dr. Bernstein

Requirements:

Students will complete a group research project aimed at testing the effects of meditation and/or visualization on physiological (heart rate) and psychological (mood, well-being, etc.) outcomes. Project benchmarks include study design, data collection, and data analysis. The final product is a 4,000-6,000 word research report on the group's research study. **The majority of this project effort can take place outside of scheduled course time.**

Learning Outcomes:

Students completing this assignment should have gained a better understanding of the following skills or concepts through experiential learning:

1. The ability to design and execute an experimental study
 - a. Understand the importance of different experimental aspects (control groups, randomization, etc.)
 - b. Understand the strengths and weaknesses of different experimental designs (between, within, mixed)
2. The ability to incorporate different types of variables and measures into study design
 - a. Understand the different types of information given through physiological and self-report measures
 - b. Understand the role of organismic variables (demographics, personality) in moderating main effects.
3. The ability to code, analyze, and report statistical information to a professional audience
 - a. Understand the role of descriptive and inferential statistics in the research process
 - b. Understand the different ways in which statistical information is presented to an audience
4. The ability to synthesize previous research and new data into a coherent research report
 - a. Understand the role of background and theory in generating research questions and hypotheses.
 - b. Understand the role of empirical evidence in the research process
 - c. Understand the role of logical inference in the research process

Detailed Assignment Description:

Students completing the Psychology discipline project will be required to achieve the following three benchmarks as a research group (no more than 3 per group):

1. Design an experimental study to test some aspect of visualization and/or meditation. That study needs to include the following components:
 - a. Multiple dependent variables
 - b. Personality variables as moderators
 - c. Bio-physiological variables as outcomes and/or moderators
2. Collect data using the proposed methodology. That data collection needs to include *at least* 20 participants per condition. Access to the SONA research pool will be available.
3. Analyze and report on the data collected in the project using appropriate statistical tests and data visualization strategies.

Grading Rubric:

These research efforts should culminate in the creation of a 4,000-6,000 word research manuscript conforming to APA paper guidelines and structure (for reference, see <https://owl.english.purdue.edu/owl/section/2/>). That manuscript will represent the primary source of assessment for the Psychology discipline project and will be evaluated using the following criteria:

1. Quality of the Research Design (20% total; operationalizations, precision in measurement, control for confounding variables, etc.)
2. Quality of the Data Analysis and Reporting (20% total; thorough, accurate, understandable, etc.)
3. Quality of the Final Manuscript (60% total)
 - a. Content Richness and Development (70% of writing)
 - b. Structure/Organization (20% of writing)
 - c. Style and Grammar (10% of writing)