Reducing Test Anxiety to Increase Academic Performance Through Novel Breathing Techniques and Digital Visualization

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Test-Taking Anxiety is an issue that impacts students worldwide, it occurs through the stress-response system, the hypothalamic-pituitary-adrenal axis. If Test Anxiety is untreated it can lead to further illnesses and forms of anxiety. This project was split into two main phases. In Phase 1, the random sampling method was used to study Test Anxiety among high schoolers. A total of 215 students (age range 14-18) participated in a questionnaire from 5 countries: US, Malaysia, Singapore, Ireland, and Australia. After the data staging process, the collected data was mined into R programs for in-depth statistical analysis. Results: 41% of the subjects experience Test Anxiety and females ages 17 face the greatest amount of Test Anxiety (64.10%). Phase 2 experimented with different methods (Deep Breathing, Alternate Patterned Breathing, Digital Visualization, and a control) to curb Test Anxiety. The experiment conducted for 78 days with 36 students in a classroom simulated environment (students were divided into 4 groups), where breathing methods were practiced daily at 8 am. Students heart rate was taken using a Pulse Oximeter(bpm), a SAT Test was given with 10 questions for 8 mins, and students marked their improvement on a self-assessment score sheet. Through multi-layered analysis, it's observed that all the three relaxation methods were effective at reducing Test Anxiety compared to the control group. In conclusion, the Digital Visualization method was the most effective at reducing Test Anxiety, then Alternate Patterned Breathing and finally, Deep Breathing was the least effective at curbing test anxiety.

Awards Won:
Fourth Award of $500