# Study Smarter, Not Harder: The Neuropsychology Behind Studying Techniques in Correlation to Academic Performance of Adolescents

Mathur, Ananya (School: Billerica Memorial High School)
Nalumansi, Gianna (School: Billerica Memorial High School)
Patel, Mariyam (School: Billerica Memorial High School)

High school students set aside a lot of time to study, but they don't have a structured method of studying. Students often cram for exams the night before, or even minutes before taking an exam. This research aimed to improve academic productivity in terms of long-term memory retention of content knowledge among high school students by analyzing the effectiveness of 6 popular studying techniques. This research study took place over the duration of 2-3 weeks and utilized the following studying techniques: the Pomodoro Technique, Spaced Repetition, the Feynman Technique, Active Recall, the SQ3R Method, and Mind Mapping. Each student participant was assigned a study method to implement into their academic lifestyle and throughout the research period, common trends were looked for within each student's digital lab notebook and weekly responses at virtual meetings. Overall, the data collected expressed that the Pomodoro and Feynman Technique were the most effective as they obtained the highest success rates. 60% of the students who used the Pomodoro Technique rated it a 4 on a scale of 1-5 for effectiveness (5 being the highest) and 40% of the students rated it a 5. For the Feynman Technique, 75% of the students who incorporated the study method into their studying habits rated it a 4 and the other 25% of the students rated it a 5. Comparing the most effective and least effective studying techniques, it was found that the Pomodoro Technique and Spaced Repetition had a p-value of 0.46%. The Feynman Technique and Spaced Repetition had a p-value of 1.54%. As these comparisons had a p-value < 0.05, it can be concluded that the results are statistically significant.

**Awards Won:**