



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Katelyn Santa Maria; Lorelei Santa Maria	Project Number S0420
Project Title Can We Psyche You Out? The Study of the Effect of Positive and Negative Encouragement on Physical and Mental Activities	
<p style="text-align: center;">Abstract</p> <p>Objectives The objective of this study is to discover whether positive or negative encouragement is most effective in a learning and a physical environment. The overall question is "Which type of encouragement is most effective: positive or negative?"</p> <p>Methods Mental: Stopwatch, recording device, three classrooms found in a school environment, timer, slideshow on selected topic of instruction, and positive and negative recordings. Physical: timer, stopwatch, one classroom or open space, positive and negative recordings, recording device.</p> <p>Results Physical: Results indicated that the test subjects in the negative encouragement experiment, on average, performed more jumping jacks than those in the positive and neutral. Mental: Results indicated that the test subjects in the positive encouragement experiment, on average, performed better (by scoring higher) than those in the positive and neutral.</p> <p>Conclusions According to the data collected, the hypothesis, "If positive encouragement is used to motivate the test subjects, then said test subjects will perform better on their test," appears to be rejected in the physical by an extremely small margin. These results may have occurred because students felt more motivated when negative encouragement was used. Students may have used the negativity to fuel their motivation in finishing with their maximum amount of jumping jacks. This is important as both sports coaches and teachers have one thing in common: the constant desire to improve, as they know that their increased performance will lead to better comprehension and better execution.</p>	
Summary Statement We learned that positive encouragement is significantly more effective than negative encouragement to use in a learning environment, while discouragement is slightly more effective than positive in a physical environment.	
Help Received Thank you to Carmen and Marie-Julie Santa Maria for supporting Katelyn and Lorelei Santa Maria throughout this experiment, Melissa Mouchamel and Natalie Mendez for photographing the experiment, Anisa Khan and Rachel Lee for counting the number of jumping jacks in the physical aspect of this	