



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Harshini Ravi; Harshita Ravi	Project Number S0417
Project Title The STEM of the STEM Gap: Exploring the Gender Gap in STEM	
<p style="text-align: center;">Abstract</p> <p>Objectives This experiment is a two-part analysis of the existing gender gap in STEM careers. The extent to which a gender gap exists is studied, and two factors that may be contributing to this disparity are explored; the effect of growth vs fixed mindsets in students, as well the impact of the gender of a teacher.</p> <p>Methods First the impact of growth vs fixed mindset, which was accomplished through a short questionnaire connecting a student's gender with a student's mindset. Second the impact of a teacher's gender, which was understood through comparing the scores of students on the California Science Test based on student gender and teacher gender.</p> <p>Results The test comparing the average mindset score of all 6th-grade males and all 6th-grade females did not indicate a significant difference between the two groups. The average score of both groups fell into the Growth Mindset range. A significant difference was indicated between the average number of male and female science teachers at a given school in California. The test comparing the performance of all 8th-grade males and all 8th-grade females on the CST Life Science exam indicates that overall males achieved higher scores. Further analysis shows that the performance of both males and females increased when being taught by someone of the same gender.</p> <p>Conclusions A thorough analysis of the acquired data indicates that males outperform females in STEM subjects since there was shown to be a significant difference in male and female performance overall. When analyzing male performance under male teachers and female performance under female teachers, it was observed that each gender did perform better when taught by the same gender teacher. An analysis of mindset scores among 6th graders did not indicate a significant difference between male versus female mindset scores, suggesting that one gender is not more growth-minded than another and therefore, that mindset is not heavily influencing the current gap within the STEM field. The performance gap within STEM, therefore, seems to stem from an already existing lack of female representation within the teaching space. However, there are likely other factors influencing this disparity in achievement. Based on already existing research concerning the benefits of a gender-diverse work environment, it is of crucial importance to improve the pathway from school to STEM careers for females.</p>	
Summary Statement This project is a two-step analysis to explore the existing gender gap in STEM careers and to determine the impact of factors such as mindset and a teacher's gender on the probability of students later entering STEM careers.	
Help Received	