The STEM Gap: What Is the Cause of the Disparity Between Males and Females in the STEM Fields?

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For decades, the representation of females in Science, Technology, Engineering, and Math (STEM) has remained low compared to males. Possible factors include gender discrimination, lack of role models, and lack of support from family and school. Statistically, 20 percent of computer science degrees and 22 percent of engineering degrees in the US are earned by women. A lack of women in STEM has led to a lack of diversity. This project aimed to discover the root cause of the disparity between males and females in the STEM field, especially technology and engineering. Data were collected from US Department of Education, National Center for Education Statistics, School and Staffing Survey, National Survey of Science and Mathematics Education 2018, and FiveThirtyEight. Results indicate that on average, public school teachers spent two to four hours on science per week compared to ten to twelve hours on English per week. The more elementary-aged students were exposed to science, the higher their test scores. 91% of teachers completed one or more engineering courses at the undergraduate or graduate level. 0.3% of teachers have their students use coding as part of their science education. Statistical analysis was conducted and resulted in statistical significance with a p-value <0.01. The lack of exposure to STEM at an early age and low quality of the teaching workforce likely led to the discrepancy between males and females in the STEM fields. Future directions include implementing an engineering and coding camp for elementary-aged girls to expose them to STEM.

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