



SUMMER

GIRLS' CODING CAMP

Forty-six young women from schools throughout the Tulsa area participated in a week long camp designed to introduce them to coding, robotics, 3D printing, the science of augmented reality and entrepreneurship. It was led by Los Angeles-based RedFlight Mobile, in conjunction with the Tulsa Regional STEM Alliance. This camp was sponsored by TD Williamson Community Relations, the Charles and Lynn Schusterman Family Foundation, the Lobeck Taylor Family Foundation, and the University of Tulsa.



Importance

The Girls' Coding Camp aim was to make a lasting influence on young Tulsa women. The National Science Foundation¹ found women are underrepresented in science, technology, engineering, and mathematics (STEM) careers. Moreover, female students show evidence of decline in STEM interest during the middle school years². Programming or interventions are the most common ways to combat these concerns. The Girls' Coding Camp provides a unique experience for participants. The young women are given the opportunity to develop STEM identity along with their peers, which recent research has shown to be a major indicator of future STEM involvement³. Thus, the Girls' Coding Camp is an important feature of summer programming.

¹National Science Foundation (2015). *Women, minorities, and persons with disabilities in science and engineering*.

² Heddy, B. C., & Sinatra, G. M. (2017). Transformative parents: Facilitating transformative experiences and interest with a parent involvement intervention. *Science Education*.

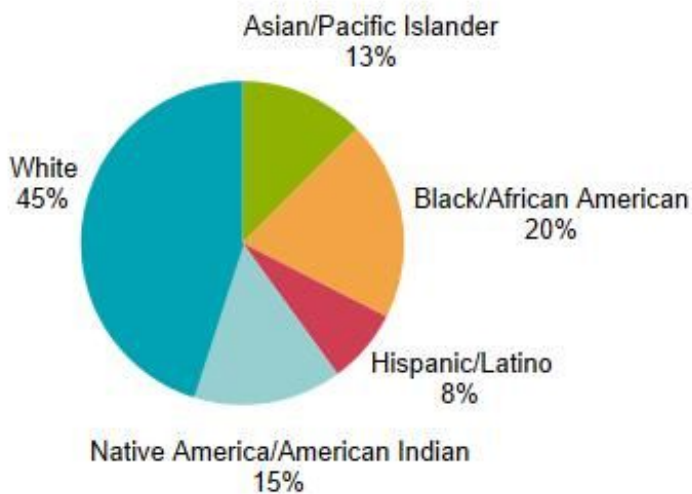
³ Kim, A. Y., Sinatra, G. M., & Seyranian, V. (2018). Developing a STEM identity among young women: A social identity perspective. *Review of Educational Research*.



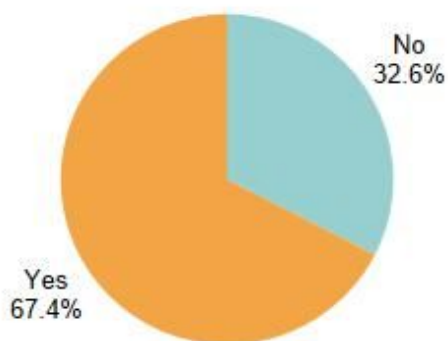
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Ethnicity/Race



First Time at STEM Camp?



Participation

46 female students participated in the Girls' Coding Camp; 44 in middle school and 2 in high school. Participants came from various backgrounds, showing no statistical majority for any race or ethnicity. Students came from 24 separate schools, across 11 northeastern Oklahoma districts.

Methodology

Students were given surveys on the first and last days of camp to report any changes. The surveys were broken into two parts: retroactive and pre-post analysis. In retroactive analysis, students were asked to think about their time at the camp and determine if they feel more, the same, or less with each statement. In pre-post analysis, students were given the same statements on both surveys, thus reporting any significant changes.



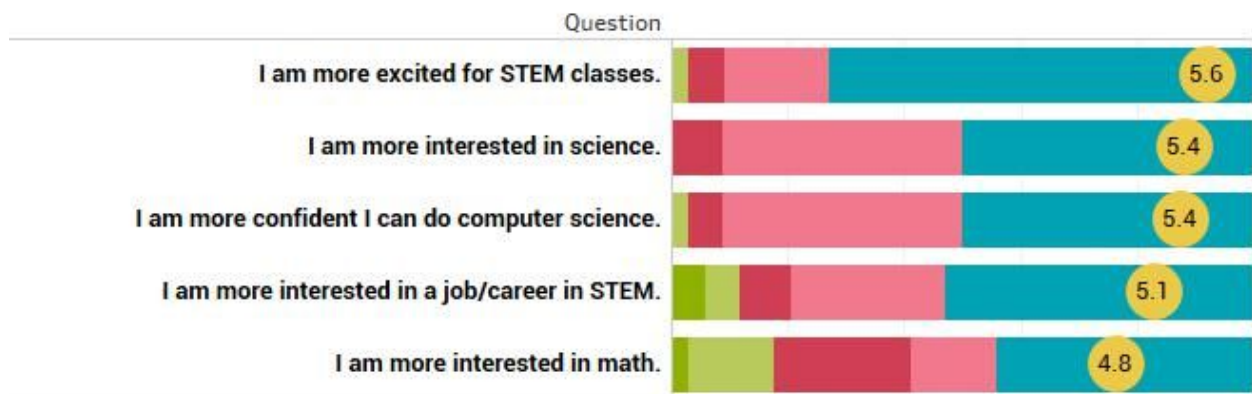
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Results

First, participants showed increased interest and confidence in all categories. Excitement for STEM classes, interest in science, and confidence in computer science were the highest scoring categories. Next, the pre-post questions all showed increases in agreement. Knowing computer science resources and interest in discovery/inventing experienced statistically significant change ($p < .0001$ and $p < .05$ respectively).

Scale 1-6



Pre-Post Changes

