

What does the recent research tell us about best practices for engaging girls in STEM?

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THE NEED

Research suggests that developing a STEM identity is an important factor in girls choosing to participate in STEM. The United States will have a more ethnically and culturally diverse population by 2044 yet this is not reflected in STEM jobs. Additionally women hold less than 30% of STEM jobs and minority women represent only one in ten employed engineers and scientists.

PROJECT OVERVIEW

SciGirls CONNECT 2 is a three-year NSF project that examines how the gender equitable and culturally responsive strategies currently employed in the *SciGirls* informal STEM educational program influences middle school girls' STEM identity formation.

PURPOSE

- To examine and synthesize the most recent research on gender equity in STEM and identify key factors that impact the development of girls' positive STEM identities.
- To provide effective instructional themes for building girls' interest in STEM fields within a context of culturally responsive teaching.

THE THEMES

Connections

Connect STEM experiences to girls's lives.

Authentic Opportunities

Provide authentic opportunities that mirror the practices of STEM and help girls develop their own ways of exploring and sharing knowledge.

Growth Mindset

Promote a growth mindset in girls to help them embrace struggle, overcome challenges, and increase self-confidence in STEM.

Stereotypes

Encourage girls to identify and challenge STEM stereotypes and bring their true selves to the learning space.

Social Nature of STEM

Develop opportunities for girls to collaborate and collectively engage in experiences that highlight the social nature of STEM.

Role Models

Provide opportunities for girls to interact with and learn from diverse STEM role models and the barriers that they had to overcome.

LITERATURE REVIEW METHODS

- Used a collaborative review and writing process.
- Read 130 peer-reviewed articles with a focus on K-12 settings from 2013-2017.
- Collected feedback from *SciGirls* program evaluators and educators.
- Identified keywords associated with STEM broadly and STEM fields specifically.

FRAMEWORK

- Learning Environment
- Culturally Responsive Teaching



WHAT'S NEXT?

- Review feedback from 32 educators who piloted the use of the new strategies in STEM outreach programs.
- Review feedback from educators and release new curriculum recommendations, publications, and trainings in 2019.

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