Reducing Boys’ Stereotyping of Girls’ STEM Ability

Our research team designed & tested an intervention aimed at reducing gender stereotyping in STEM environments, improving the climate before girls decide whether to take STEM courses in high school.

Design

Intervention goal: provide evidence to boys* in late childhood to early adolescence that girls’ STEM abilities are stronger than they appear. A multi-step model counteracted boys’ potential defensiveness:

1. Facilitating open-mindedness
   Boys reflected on a self-affirming value to reduce psychological threats.

2. Personalizing the message
   Role model described a woman peer in STEM whose abilities he had initially underestimated, then asked boys to consider if they had similarly underestimated the STEM abilities of a girl in their peer group.

3. Credible evidence from a man in a position of authority (role model)
   Presented strong, credible evidence that girls’ & women’s true STEM ability is underestimated & underappreciated.

Structure

Participants were invited to complete surveys & have a paired conversation with a role model:

Monday: Intake survey
   - Survey
     - Value ranking

Midweek: Semi-structured one-on-one conversation
   - Role model shared a story of why he chose a STEM major, framed to connect to each boy’s top-rated value

Friday: Exit survey
   - Survey
     - Perceptions of STEM abilities of girls & boys

Results

The intervention group:

- Displayed less in-group bias
- Had more positive perceptions of girls’ STEM ability
- Effect was stronger for younger boys than adolescents – late childhood may be optimal for bias reduction interventions.

Next steps

Future interventions should test the longevity of these effects, if repetition is needed, & which components of the multi-stage intervention are essential.
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About Project PRISM
How can we make STEM a more attractive and meaningful option for adolescent girls and boys alike? Project PRISM (Promoting Rising Inclusion and STEM Motivation) investigates best practices for boosting girls’ interest in STEM, while bolstering boys’ respect for girls’ abilities. To combat obstacles girls may face in pursuing a STEM career, Project PRISM tests interventions that: (1) change boys’ beliefs about girls via implicit bias training and presenting real evidence that test scores underestimate girls’ abilities, (2) expose girls to successful role models who share their values and preferences, and (3) encourage girls to identify with STEM by recognizing that a STEM career can help them accomplish some of their most cherished goals.

About Engendering Success in STEM (ESS)
Engendering Success in STEM (ESS) is a research partnership focused on evidence-based solutions to foster positive working environments for people in STEM (Science, Technology, Engineering, and Math). We bring together social scientists, STEM experts, and stakeholders in STEM industry and education to use an evidence-based approach to break down barriers people face on their pathway to success. Canada’s Social Sciences and Humanities Research Council reviewed and funded this project.