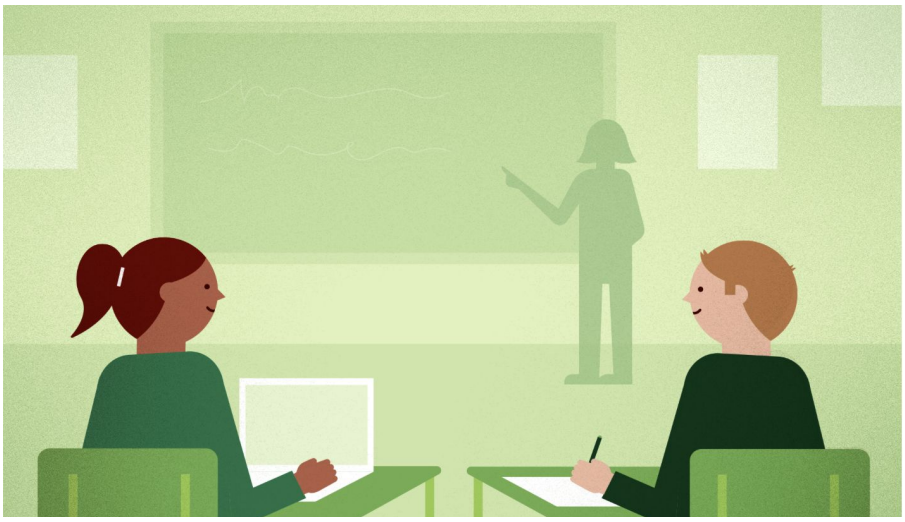
CHARACTER LAB RESEARCH SUMMARY
WINTER 2022, SPRING 2022

Character LAB

What can affect girls' motivation to pursue computer science?

Girls' Motivation and Interest in Computer Science

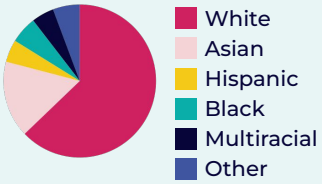


Character Strength

☑ Motivation

Who Participated

1053 Students
Grade 8



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SUMMARY

These studies looked at different cues that impacted girls' motivation in computer science.

BACKGROUND

There's a well-known stereotype that girls are less interested than boys in STEM classes like computer science. This stereotype has very real effects on girls' feelings of belonging and motivation in those classes, which can lead them to not pursue STEM.

To better understand these effects, we conducted three studies to see what factors impact girls' beliefs, motivation, and academic choices when it comes to computer science. By understanding these cues, we can begin to find ways of increasing equity in computer science.

HYPOTHESIS

We expected that differences in how boys and girls were represented in computer classes would affect how girls felt about participating in those classes.

METHODOLOGY

Students took part in one of three different studies aimed at understanding how different cues may influence girls' motivation to pursue a computer science class.

In each study, students watched a video about two computer science classes that their school would offer next year. Based on past participation from students in other schools, boys and girls were said to have done equally well in both classes. However, in each study, one class was framed to emphasize gender equality, while the other was framed in a way that reinforced a common stereotype.

Study 1: In one class, boys and girls were said to have been equally interested in the class. In the other, girls said they were less interested in it.

Study 2: One class had equal numbers of boys and girls participate. The other class had 80% boys and 20% girls.

Study 3: One class had more boys participate, but boys and girls said they were equally interested in the class. The other class also had more boys participate but students weren't asked how interested they were in the class.

In all three studies, after watching the video, students answered questions about what they thought about the two classes, including how interested they were in taking them, how well they thought they'd do in them, and how much they felt like they belonged there.

FINDINGS

In studies one and two, girls showed less motivation to enroll in the classes that girls were less interested in and where they were less represented. We found that this was related to their lower feelings of belonging in those classes.

In study three, however, we found that sharing information about other girls' interest in computer science countered gender stereotypes and slightly increased girls' motivation to enroll.

Takeaways

- Representation matters! Enlist girls to serve as "computer science ambassadors" to share their stories about why they love computer science and promote diverse images of STEM role models.
- Normalize girls' belonging and participation in computer science. Encourage girls to sign up for classes with their friends, or make it mandatory for *all* students to take a computer science course.

Key Topics

STEM interest
Equitable education
Improved academic attitudes & beliefs

School Setting

Urban school community
Suburban school community
Middle school

Open Science

Study 1 Pre-registration
Study 2 Pre-registration
OSF Study 1 Registration
OSF Study 2 Registration
OSF Study 3 Registration
Character Lab OSF Collection