Young Children's STEM Interest and Gendered STEM Stereotyping

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Literature Review

- Girls are stereotyped as less interested in STEM [1, 2, 3]
- Stereotypes about STEM contribute to choices throughout the lifespan to underrepresentation of women in STEM [1, 2]
- Early childhood education now includes STEM curriculum, however, children may learn stereotypes from curriculum[4]
- Children are aware of gender stereotypes; no published work has examined if preschoolers stereotype STEM

Hypotheses

- Children will more often associate **Novel Character STEM Interest** with male than female characters
- Children will more often associate **Familiar Character STEM Expertise** with characters of the same gender
- Boys will have greater **Personal STEM Interest**

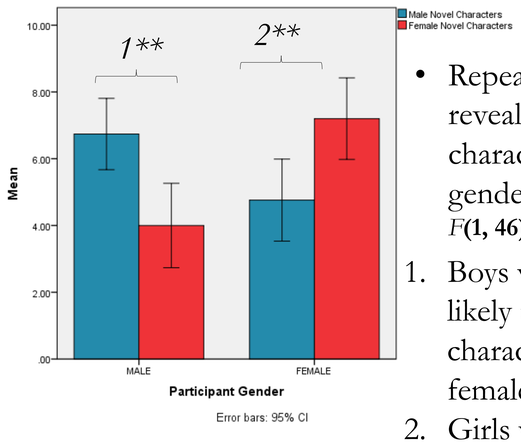
Measures

- **Novel Character STEM Interest**: Children were asked if novel male or female characters were more interested in 10 STEM activities or concepts
- **Familiar Character STEM Expertise**: Children were asked if they would watch a familiar male or familiar female character on TV to learn about 10 STEM concepts
- **Personal STEM Interest**: Children were asked to rate their interest in 10 STEM activities or concepts

Participants

- 48 children (52.1% female)
- Age 3-6 (M = 5.32, SD = .85)
- Race and ethnicity: 29.17% Anglo-American, 22.92% Hispanic-American, 8.3% African American, 2.08% Asian American, 35.4% Multi-ethnic

Novel Character Interest

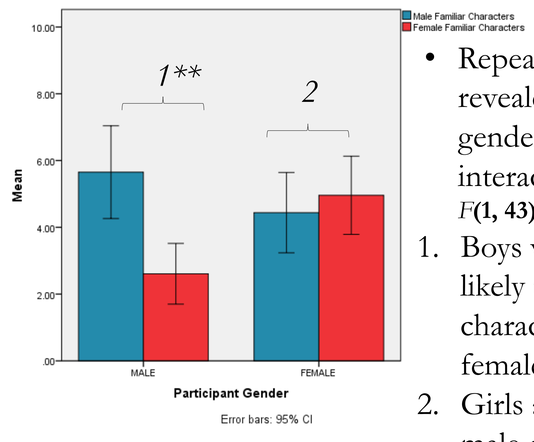


1. $t(22) = 2.98$, $p < .01$, *Cohen's d* = 1.00
2. $t(24) = 2.79$, $p = .01$, *Cohen's d* = 0.84

- Repeated Measures ANOVA revealed a significant character gender and child gender interaction
  $F(1, 46) = 16.75$, $p < 0.001$, $\eta^2 = 0.27$

1. Boys were significantly more likely to associate male characters with STEM than female characters
2. Girls were significantly more likely to associate female characters with STEM than male characters

Familiar Character Expertise

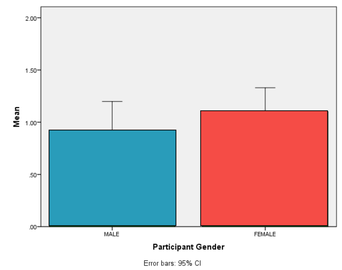


1. $t(22) = 3.61$, $p < .01$, *Cohen's d* = 1.12
2. $t(24) = 0.68$, $p = n.s$

- Repeated Measures ANOVA revealed a significant character gender and child gender interaction
  $F(1, 43) = 5.82$, $p < 0.05$, $\eta^2 = 0.12$

1. Boys were significantly more likely to associated male characters with STEM than female characters
2. Girls associated female and male characters with STEM at similar rates

STEM Interest



- Independent Samples *t*-test revealed no significant difference in children's STEM interest by child gender.

$t(46) = 1.07$, $p = n.s.$

Summary of results

- Children were more likely to associate **Novel Character STEM Interest** with same gender characters
- Boys were more likely to associate **Familiar Character STEM Expertise** with male than female characters
- **Personal STEM Interest** did not differ by child gender

Discussion

- Preschoolers are not explicitly aware of STEM stereotypes
- Children associating **Novel Character STEM Interest** with same gender characters is consistent with research
- The lack of differences in **Personal STEM Interest** signifies children are not fully aware of STEM stereotypes
- The **Familiar Character STEM Expertise** findings describe children do recognize STEM stereotypes in certain situations: media characters embodying stereotypes

Support

- National Science Foundation Collaborative Research Grant DRL-1252146
- National Science Foundation GRFP
- UCR Academic Senate Committee on Research Grant

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