

ASSESSING AND IMPROVING WOMEN'S AND GIRLS' MATH IDENTITIES



BASS CONNECTIONS

Paige Knudsen¹

¹Computer Science

Bass Connections Open

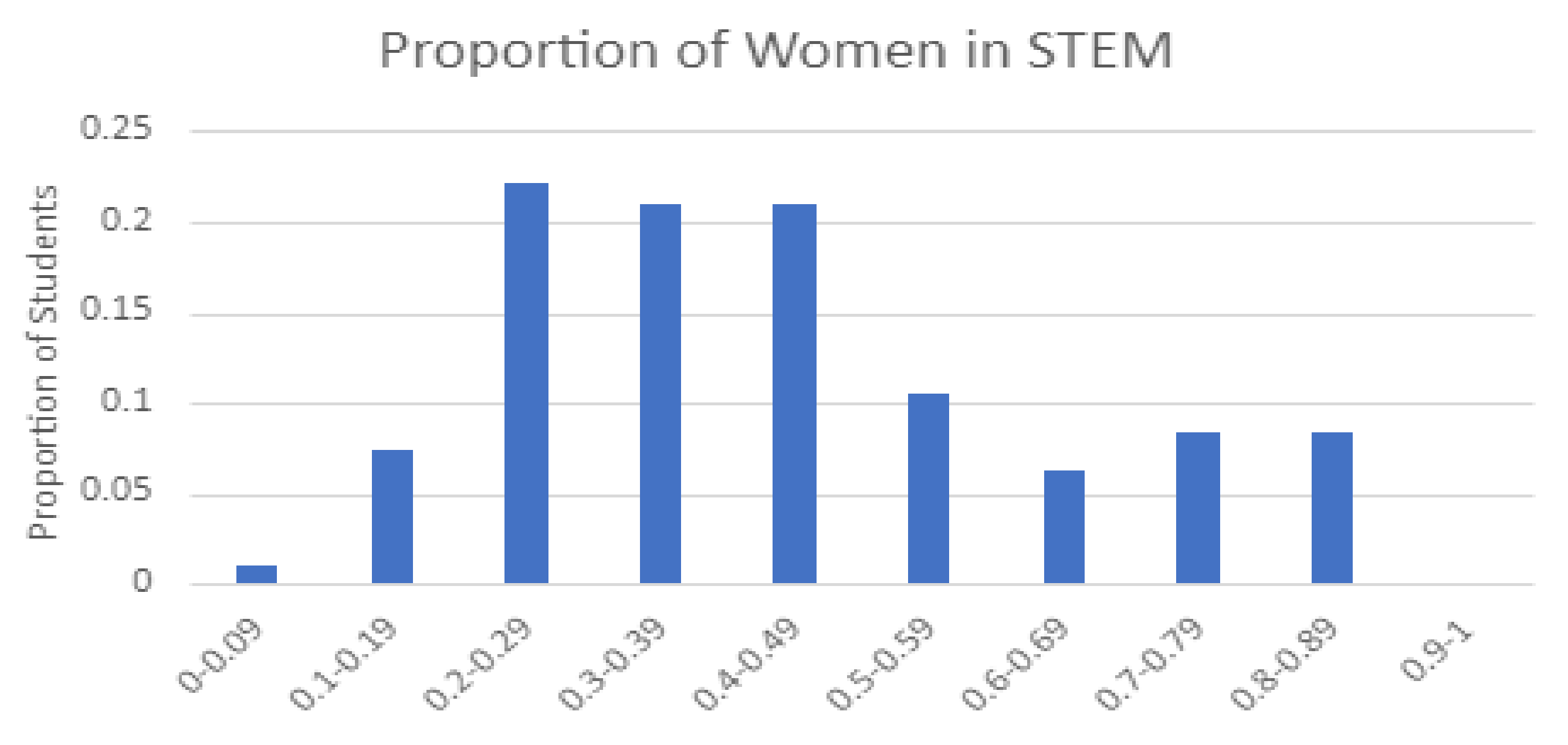
Background

- 4th year of Girls Exploring Math (GEM), 5th year of class
- Class Structure
 - Fall semester
 - Reading articles on the STEM gender gap, completing math problems
 - Preparing mock workshops
 - Spring semester
 - Hosting 10 workshops for middle school girls and gender-expansive youth
- GEM workshops
 - Project team created and led math workshops
 - Half math discussion, half related social issue discussion

Research

- Pre-survey responses to what students believe causes the gender gap in STEM
- 12 believed causes identified
 - Female Role Models
 - Biological Brain Differences
 - Encouragement
 - Perceived Helpfulness of STEM Careers
 - Interest
 - Differences in Natural Talent
 - Discrimination
 - Presences of Women in the Workplace
 - Confidence
 - Work-Life Balance
 - Personality for STEM
 - Status
- Analyzing the importance which students assigned to each

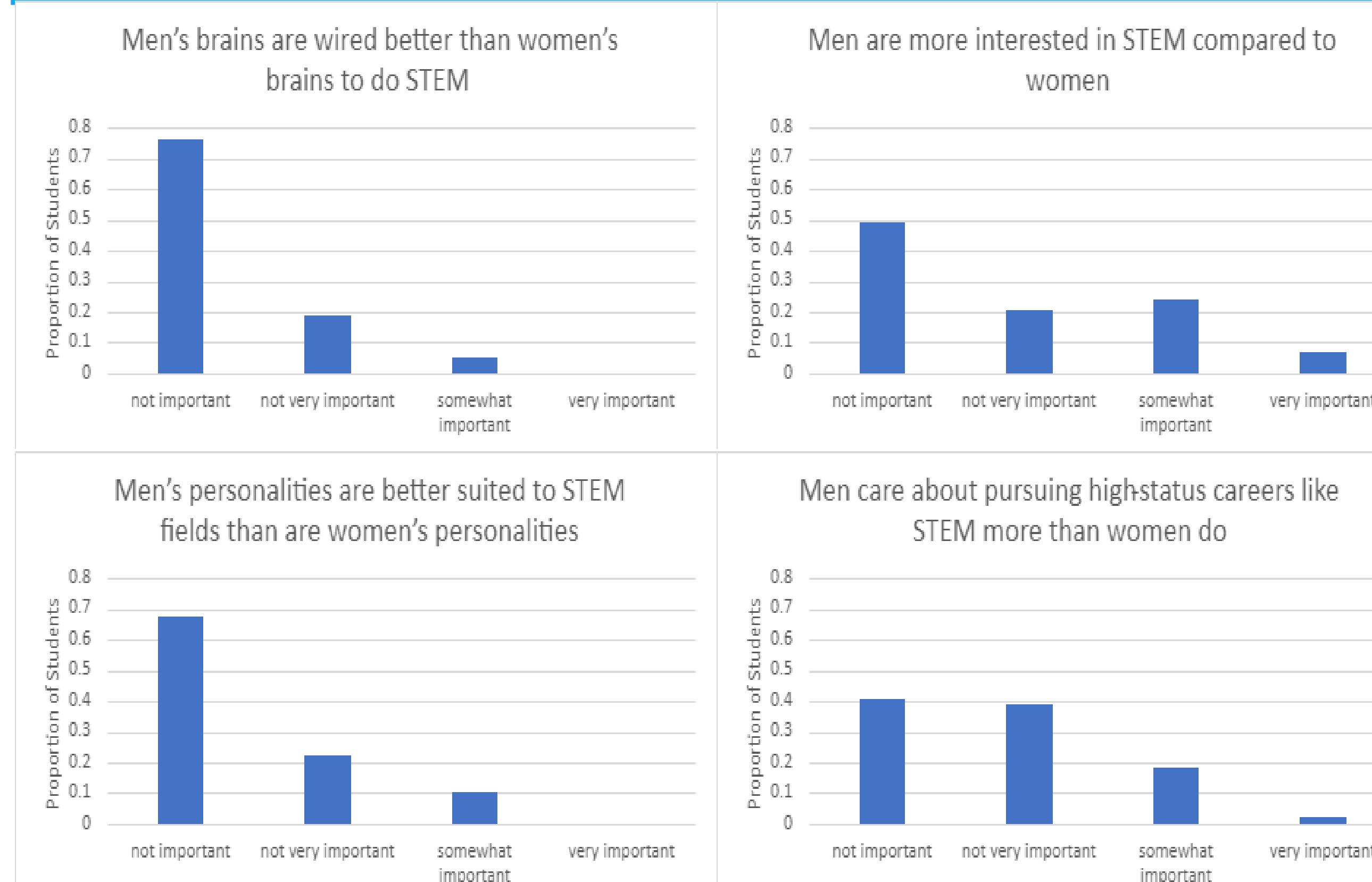
Before answering the questions about believed causes, GEM participants were asked what proportion of the STEM workforce was women, if they answered > .5, then they were not asked about the causes of the gender gap



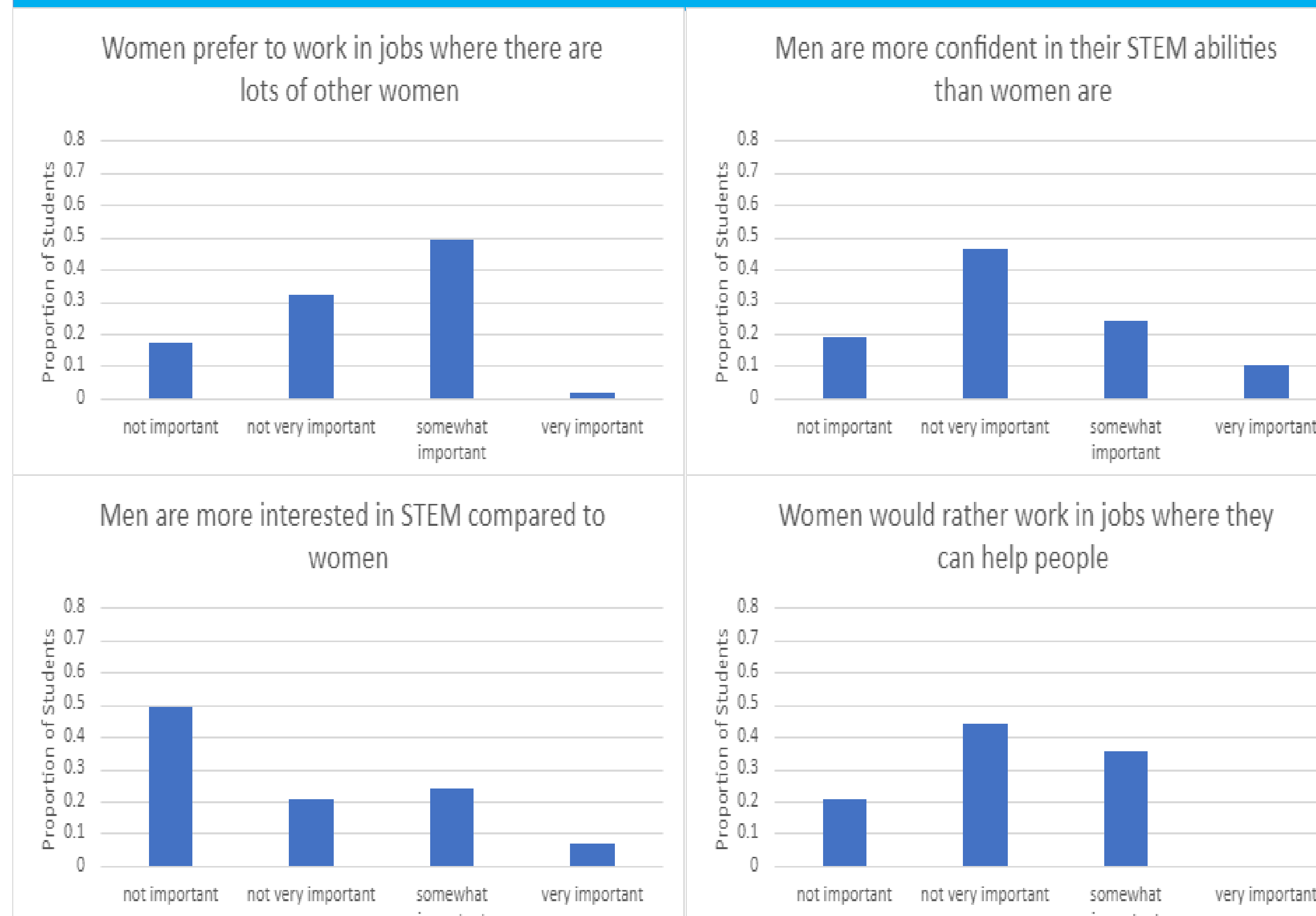
Causes Endorsed by GEM Participants



Causes Not Endorsed by GEM Participants



Inconclusive



Discussion

The data can be grouped into 3 categories: endorsed, not endorsed, and inconclusive. For the four which students believed did affect the gender gap, all of these are commonly discussed in media and in some classes, signaling that the students understand the effect that things such as discrimination have on the STEM workforce. As for the four that GEM participants did not endorse and the four which were inconclusive, it cannot be said if this was due to a misunderstanding of the question, such as interpreting the question to be about their own beliefs rather than societal beliefs, or if students genuinely felt this way. For the inconclusive response, it could potentially be due to an increased conversation around these causes, but due to possible errors in understanding, the claim cannot be made. To aid this, in the future, it can be checked to ensure that students understand the question while also discussing these topics during GEM workshops.

Next Steps

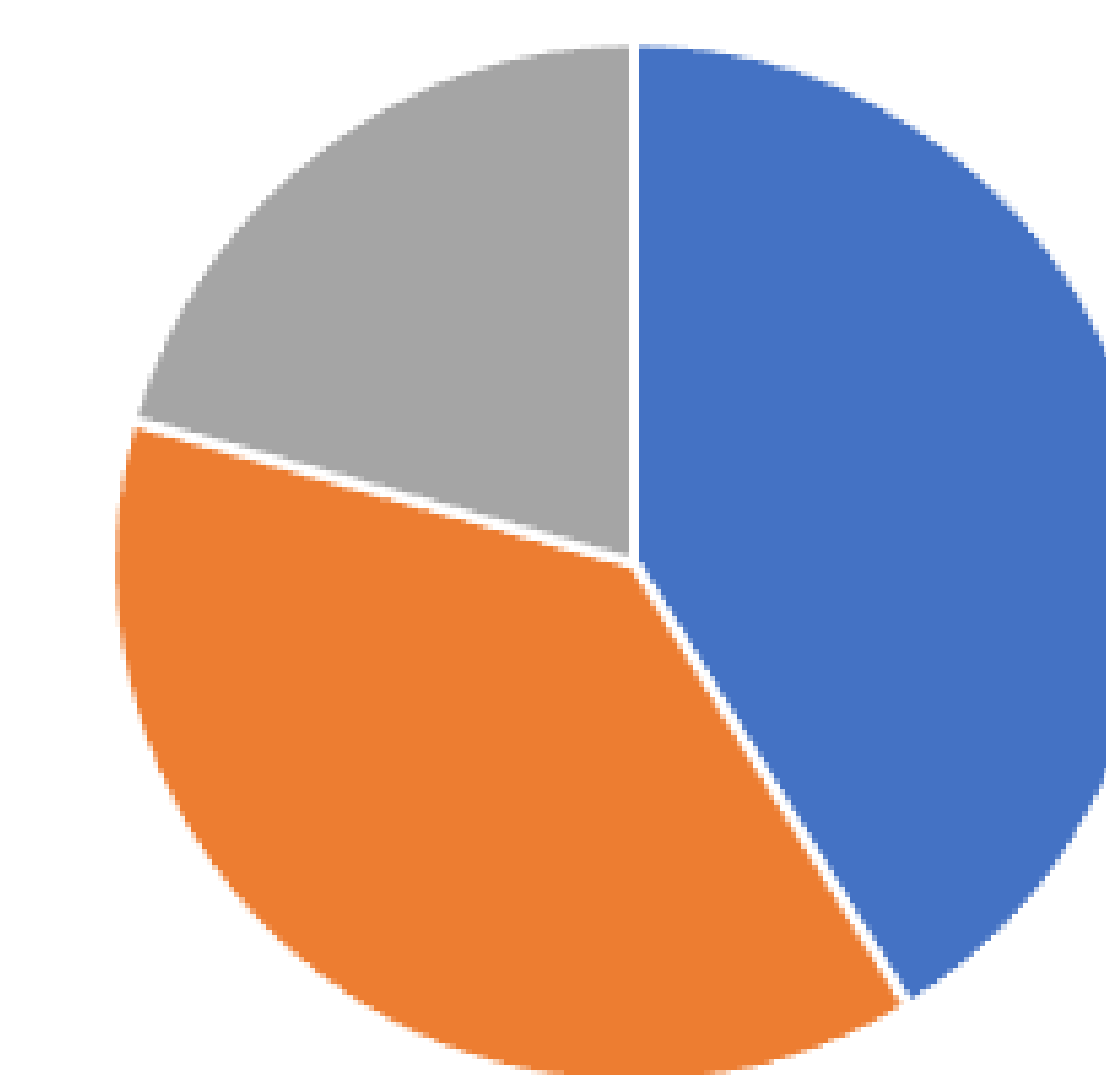
- Examine the causes or beliefs which affect the gender gap which GEM participants did not believe to have a correlation and create lesson plans for workshops that educate the students on the subjects
- Consider how each individual student's beliefs are correlated with their math ability and persistence/interest

Limitations and Possible Errors

- Small sample size (n = 102)
- Changes in questions for 2020 data (therefore data not included in graphs to reflect possible question bias)
- Selection bias
 - Students/parents placed them into the program
 - Many GEM participants come from well-established schools

Demographics

Grade of GEM Participants



Race/Ethnicity of GEM Participants

