Julia Randazzo April 13, 2022

Final Symposium Outline

1. Introduction
    a. Attention-getting device: Who comes to mind when you think of a mathematician? You are most likely not thinking of a woman. There are explanations for why women have never been the face of mathematics and continue to be underrepresented today.
    b. Explanation of topic: As a statistics major at WCU, I have decided to explore women working in mathematics and the challenges they face in mathematical education, performance, and career opportunities.
    c. Main thesis/argument: Women encounter extensive challenges and are underrepresented working in mathematical careers due to stereotypical beliefs and gender inequalities.
    d. Significance to audience: The audience should recognize that there is no difference in the cognitive biology between a man and woman to perform well mathematically. They should also recognize that it is unfair that men receive more credit in mathematics than women and continue to achieve higher positions and larger salaries to this day.
2. Main Point 1: The stereotype that men are better at math than women affects women in education, performance, and pursuing careers in mathematics.
    a. In a research study conducted at Princeton University, 45% of research participants reported believing that men are better than women at math. Even more shockingly, less than 1% reported believing that women are better. There is

a widespread belief that women's ability in math is subpar to men's ability, thus leading to a phrase known as *stereotype threat*.

i. Stereotype Threat: "fear or anxiety of confirming a negative stereotype about one's social group."

ii. Due to stereotype threat, women become subconsciously distracted causing them to actually perform worse on mathematical exams.

b. There has been evidence of teachers underestimating girls' abilities in mathematics and related fields, so much so that it is common for girls to lose their confidence in math by the early ages of 8 or 9.

i. This evidence proves how we falsely attach gender ideologies to people, and attach these same ideas to the workplace, such as math as work being gendered masculine.

c. Due to the belief of common female attributes, women are less likely to be respected, listened to, and valued in the workplace than men. This keeps them from applying to leadership roles, higher positions, and jobs in STEM in general.

i. Women are stereotypically caring, nurturing, agreeable, sympathetic, etc.

3. Main point 2: Women are underrepresented in mathematical careers.

a. Women currently make up less than 30% of the workforce in science, technology, engineering, and mathematics.

b. The underrepresentation of women in the STEM workforce is not due to ability. Most women do not pursue these types of careers or are forced to drop out due to their needs for more flexibility and demands of parenting or caregiving. Men are

rarely forced to make these choices, whereas all women must consider them at some point.

    i. These decisions made by women help us see how we falsely attach gender ideologies to the unpaid workplace as well, which is seen in the "Second Shift."

    ii. Second Shift: the invisible labor performed at home in addition to paid work

4. Main point 3: There continues to be a prominent wage gap between men and women working in math.

    a. According to research from the National Science Foundation, mathematical scientists who are women earned an average of $70,000 per year, whereas men in the same field with comparable experience earned $81,000 on average. Therefore, for every dollar earned by a man, a woman only earns 86 cents.

    b. To analyze this point, we must recognize that gender-based pay discrimination has been illegal in the U.S. since 1963. However, this practice is still widespread, especially in workplaces where the discussion of wages is discouraged and where employees, typically women, fear retaliation. Furthermore, employers often investigate prior compensations before hiring a new employee, which could enable pay decisions influenced by discrimination to follow a woman from job to job.

    c. This pay discrimination not only affects a woman's work, but also her career progression, family choices, and authority level. We can see how this is another

example of why women are less likely to possess a career in the STEM field and therefore, this field continues to be captivated by men.

5. Conclusion
    a. Women encounter many challenges working in math fields. Whether it be throughout their education or in workforce experience, women must take extra strives and make tough decisions to be successful in fields dominated by men like math.
    b. Powerful concluding device: There is no cognitive biological difference between a man and a woman to perform well mathematically, just a very common practice of gender inequality.

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