

How High School Teachers can help narrow the gender gap in STEM Education

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Present Scenario- India

- In a survey of girl students aged 12 to 14 in India, 93 percent said they considered STEM as a career choice
- According to All India Survey on Higher Education ([AISHE](#)) 2018-19 by Ministry of Education, women constitute nearly 43 percent of the total STEM enrolments in the country.

Present Scenario- India

- Only three percent of women enroll in PhD in Science and six percent opt for a PhD in Engineering and Technology.
- They account for only 14 percent of the total scientists, engineers, technologists in research development institutions.

Present Scenario- India

- The AISHE report reflects an increase in women enrollment, particularly in medicine-related courses.
- During the same period, enrolment in Bachelors in Technology course went up from 39 in 2016-17 to 42 in 2019-20.

Globally

- According to the UNESCO groundbreaking report *Cracking the code: Girls' and women's education in STEM*, only 35% of STEM students in higher education globally are women, and differences are observed within STEM disciplines.
- For example, only 3% of female students in higher education choose information and communication technologies (ICT) studies.

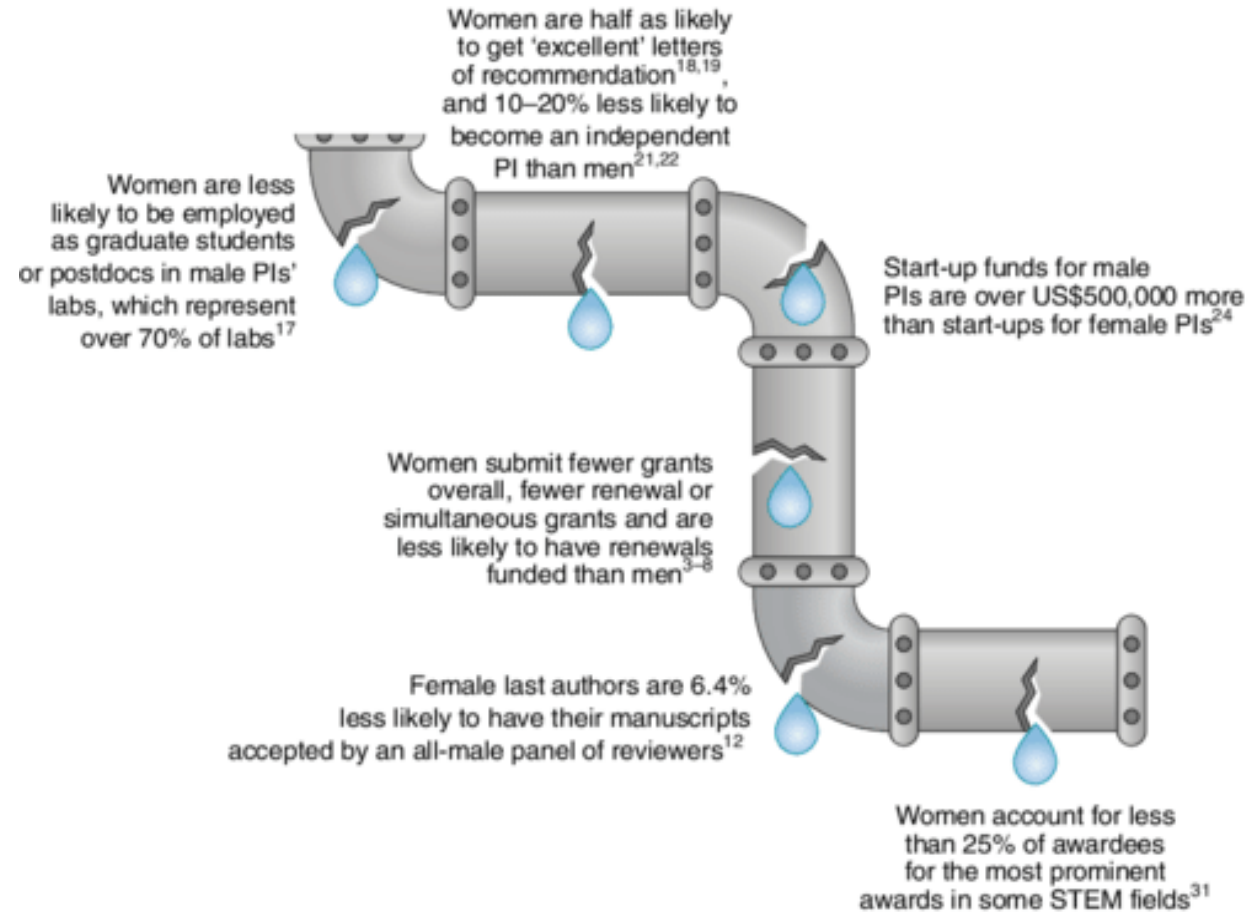
Globally

- The gender gaps are particularly high in some of the fastest-growing and highest-paid jobs like AI, computer science and engineering.

Recognition

- Till 2020 seven women have won the Nobel Prize in Chemistry (3.8% of 186 laureates in total), four have won the Nobel Prize in Physics (1.9% of 216 laureates in total).

Leaky Pipeline in STEM



How can the entire STEM community address this gender bias problem?



- Collect and publish data on gender representation in all areas of STEM visibility and success
- Set clear and specific goals and guidelines for gender and minority representation in your area of STEM
- Identify and offer effective training in unconscious bias and effective hiring and retention strategies

Source: Grogan, Kathleen. (2018). How the entire scientific community can confront gender bias in the workplace. *Nature Ecology & Evolution*. 3. 10.1038/s41559-018-0747-4.

Why it Matters

- STEM careers are the jobs of the future
- These will be the driving force for innovation, social wellbeing, inclusive growth and sustainable development.

Why it Matters

- The under-representation of women in STEM puts them at a high risk of being displaced by technology.
- 49.6% of the world population is female.

Why it Matters

- Results in unequal opportunities
- Opportunity Cost: Lost potential

Role of Teachers

- Teachers can play a significant role in dissipating stereotypes in STEM education. The most effective way to narrow the gender gap in STEM is to prevent it in the first place. By taking an early-age approach, I believe that the pipeline can be plugged before it begins to leak.

Strategies

- Catch them Young
- Female Role Models
- STEM Organisations exclusively for Girls
- Career Paths in STEM

Strategies

- Training teachers for gender – sensitive classrooms
- Working on developing Spatial Skills
- Providing positive feedback
- Create a classroom environment that sparks curiosity and fosters long-term interest through project-based learning, innovative tasks and technology.

Strategies

Beware of stereotypes

- Stereotyping of Academic subjects
- Textbooks
- Language of the Textbooks and illustrations
- Unconscious bias