Report on Community Engagement Initiative:

“Gender Equality on STEM”

Karen Estevez
México
Tecnológico de Monterrey

16th, June, 2023

Index

What is STEM?

STEM stands for Science, Technology, Engineering, and Mathematics. It is an acronym that represents a group of academic disciplines and fields of study focused on advancing scientific and technological knowledge, problem-solving, and innovation in areas such as engineering, computer science, biology, physics, mathematics, and more.

Background and Statistics

The lack of gender equality in STEM (Science, Technology, Engineering and Mathematics) has been a persistent problem worldwide. Here are some statistics on this topic, backed up by reliable sources:

Women's Participation in STEM careers:

According to UNESCO, women represent less than 30% of researchers worldwide.
According to the Organisation for Economic Co-operation and Development (OECD), on average, only 17% of women graduate in computer science and engineering-related fields in OECD countries.

The gender pay gap in STEM:

According to a report by the European Commission in 2020, women in the ICT (Information and Communication Technologies) sector earn on average 16% less than men in Europe.
In the United States, according to data from the U.S. Department of Labor in 2020, the wage gap between men and women in science and engineering is around 16%.
Representation in leadership positions in STEM:

According to a report by the European Union in 2020, only 24% of leadership positions in the digital sector are held by women in Europe.
A 2021 study by the Catalyst organization found that women hold only 27.5% of leadership positions in Fortune 500 science and technology companies in the United States.

Gender Stereotypes in education and career choice:

According to UNESCO, gender stereotypes and a lack of role models influence girls' and women's STEM career choices.
A study published in the journal Science in 2018 found that gender stereotypes in science are formed at the youngest ages (between 6 and 7 years old) and can influence future career choices.

Why is this cause important?

1. Innovation and problem-solving: Gender diversity brings diverse perspectives and approaches to problem-solving and innovation. When women are included and valued in STEM fields, it fosters a broader range of ideas, creativity, and critical thinking. Diverse teams have been shown to generate more innovative solutions and make better decisions. By promoting gender equality in STEM, we unlock the potential for groundbreaking discoveries and advancements.

2. Economic growth and competitiveness: STEM fields are vital drivers of economic growth and competitiveness. By closing the gender gap in these fields, we can tap into a larger pool of talent and expertise. Increasing the participation of women in STEM careers leads to a more skilled workforce and contributes to technological advancement and economic development. Gender equality in STEM ensures that society benefits from the full potential of all its members and helps create a more prosperous future.

3. Social equity and inclusion: It is crucial to ensure that women have equal opportunities to participate in and influence decision-making processes in these areas. Gender equality in STEM promotes social equity by breaking down barriers and challenging gender stereotypes. It allows women to have an equal voice in shaping the direction of scientific research, technological advancements, and policy development. By promoting gender equality, we create a more inclusive and fair society for everyone**.**

Action Plan: Universities

The following is an action plan for universities to help reduce gender inequality in the STEM area:

1. Awareness and cultural change:

- Conduct awareness and education campaigns on the importance of gender equality in STEM.
- Promote a cultural change at the university that fosters inclusion, respect and appreciation of gender diversity.
- Implement policies and codes of conduct that promote gender equality and combat harassment and discrimination.

2. Mentoring and role models:

- Establish mentoring programs that connect female students with outstanding professionals and academics in STEM fields.
- Promote the visibility of successful women leaders in STEM through conferences, lectures and special events.
- Create support networks and student communities for women in STEM where they can share experiences, advice and opportunities.

3. Equal access to opportunities:

- Provide scholarships and financial support programs for female students in STEM.
- Ensure that women have equal access to internships, apprenticeships and research opportunities in STEM fields.
- Encourage women's participation in scientific conferences, symposia and competitions to promote their visibility and recognition.

4. Improving education and teaching:

- Implement inclusive teaching approaches that encourage the equal participation of all students, regardless of gender.
- Promote the inclusion of gender perspectives in the curriculum and highlight the achievements and contributions of women in STEM throughout history.

5. Research and data collection:

- Conduct research and studies to understand the specific barriers and challenges faced by women in STEM in college.

- Collect gender-disaggregated data on student and faculty participation in STEM areas to assess the progress and effectiveness of policies and programs implemented.
- Use research findings to inform and improve strategies and actions to address gender inequality in STEM.

Action Plan: Companies

The proposed action plan for reducing inequality in the companies would be as follows

1. Policies and leadership commitment:

- Establish clear policies and leadership commitments to promote gender equality in the company and in the STEM area.
- Encourage gender diversity in leadership teams and ensure that there are equitable opportunities for professional growth and development for women and non-binary individuals.

2. Elimination of bias and stereotypes:

- Implement training and sensitization programs to raise employee awareness of gender bias and stereotypes in the workplace and in recruitment.
- Review and revise recruitment and selection processes to ensure objective, skills-based assessment without gender bias.

3. Support and professional development:

- Provide targeted training and professional development opportunities for women and non-binary individuals in STEM, such as mentoring, leadership programs, and technical skills training.
- Establish work-life balance programs that allow flexibility and support for employees who are mothers, especially those in STEM roles.

4. Foster networks and communities:

- Create internal networks and communities for women in STEM within the company, where they can share experiences, advice and opportunities.
- Encourage networking and knowledge sharing.

5. Transparency and accountability:

- Publish diversity reports that include breakdowns of the number of employees by gender in different areas and levels of the company, as well as their performance and achievements, and in turn metrics of the company's efforts made to reduce gender inequality in STEM.

6. Collaboration with educational institutions:

- Offer internship and apprenticeship programs that provide learning opportunities and experience in STEM for female students.

Action Plan: Individuals

As individuals, we can also contribute to gender equity in STEM and this plan is a guide on how to do so:

1. Education and awareness:

- Educate oneself about the importance of gender equality in STEM and understand the challenges and barriers women face in these fields.
- Raise awareness of gender stereotypes and unconscious biases, and challenge them in both personal and professional environments.

2. Encourage role models:

- Promote and support women in STEM as role models by recognizing and sharing their achievements and contributions.
- Engage in mentoring and tutoring programs to guide and support young women interested in STEM fields.

3. Promote inclusion and equality:

- Foster an inclusive and respectful environment in the workplace, community and study spaces where gender diversity is valued.
- Advocate for equal opportunity and equal representation of women in STEM-related roles and projects.

4. Participate in activities and events:

- Participate in events and activities that promote women's participation in STEM, such as conferences, workshops, hackathons, or study groups.
- Support and attend talks, panels and presentations by women experts and leaders in STEM fields.

5. Support programs and organizations:

- Contribute to and support organizations and programs working to promote gender equality in STEM, whether through donations, volunteering, or active participation.
- Seek opportunities to collaborate with local organizations or educational institutions to offer mentoring, lectures or workshops related to STEM.

6. Inspire future generations:

- Motivate and encourage girls and young women to explore and pursue careers in STEM by sharing experiences and providing guidance on the opportunities and benefits of these areas.
- Engage in science and technology outreach to students, such as science fairs, to encourage girls' interest and participation in STEM.

Every individual action, no matter how small, can contribute to reducing gender inequality in STEM, individuals can be agents of change and work toward a more equitable future in these fields.

Closure

Addressing the gender gap in STEM fields is essential to fostering social equity, innovation and progress. By ensuring equal opportunity, diversity of perspectives and recognition of women's and non-binary people's talent, we can drive scientific, technological and economic progress and build a more just and prosperous future for all.

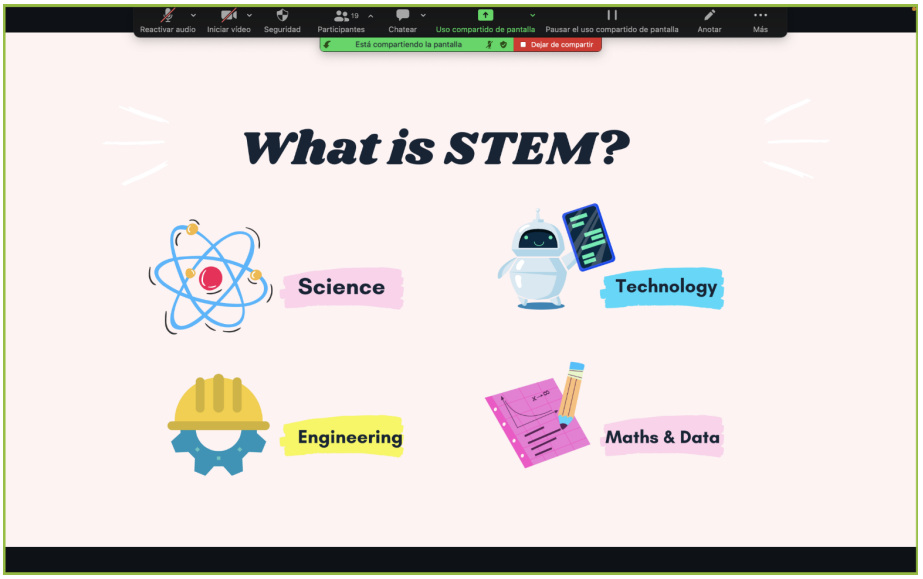
Presentation

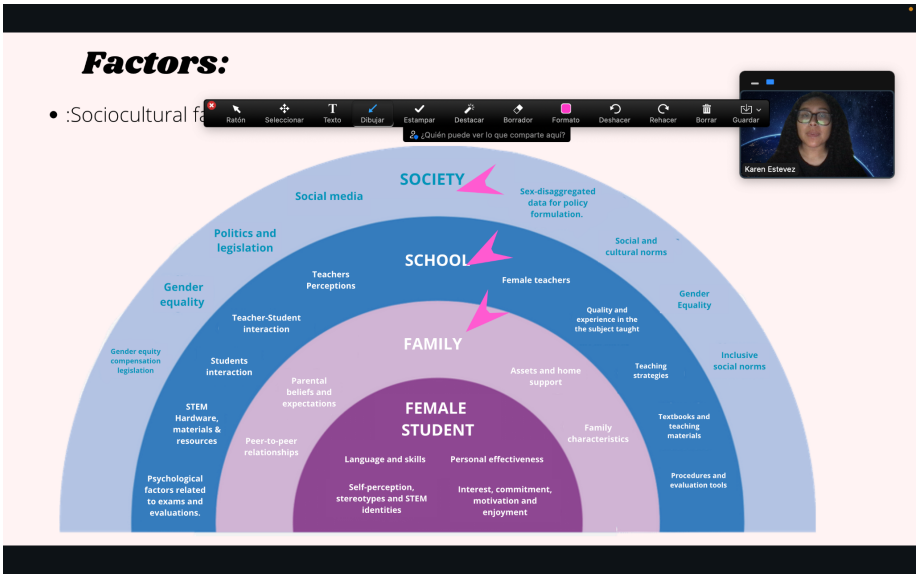
https://drive.google.com/drive/folders/1InYiCcwFgkNHdKLR5BFIjaFQxShHHiW1?usp=drive_link

Diffusion

https://drive.google.com/drive/folders/1InYiCcwFgkNHdKLR5BFIjaFQxShHHiW1?usp=drive_link

Evidence of meeting





References

UNESCO - "Cracking the code: Girls' and women's education in science, technology, engineering, and mathematics (STEM)"
Source: https://unesdoc.unesco.org/ark:/48223/pf0000377525

OECD - "The Pursuit of Gender Equality: An Uphill Battle"
Source: https://www.oecd.org/gender/the-pursuit-of-gender-equality-9789264252824-en.htm

European Commission - "She Figures 2020: Gender differences in the STEM fields"
Source:
https://op.europa.eu/en/publication-detail/-/publication/f1f2585f-68c4-11eb-baa9-01aa75ed71a1

U.S. Department of Labor - "Women in the Labor Force: A Databook"
Source: https://www.dol.gov/agencies/wb/data/factsheets/women-in-the-labor-force-2021

European Union - "Women in Digital Scoreboard 2020"
Source: https://digital-strategy.ec.europa.eu/en/library/women-digital-scoreboard-2020

Catalyst - "Women in Science, Technology, Engineering, and Mathematics (STEM): Quick Take"
Source:
https://www.catalyst.org/research/women-in-science-technology-engineering-and-mathematics-stem-quick-take/

Science - "Gender stereotypes about intellectual ability emerge early and influence children's interests"
Source: https://science.sciencemag.org/content/355/6323/389