

Committee: Youth Delegates Forum

Issue: Promoting the Involvement of Women in STEM

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Position: Co-Head

PERSONAL INTRODUCTION

Dear Delegates,

My name is Kalliopi Vareli, I am a 10th Grade Student at Costeas-Geitonas School (CGS), and this will be my second time chairing and 12th conference overall. At this year's German School of Thessaloniki Model United Nations Conference, I have the utmost pleasure to be serving as your Co-Head in the Youth Delegates Forum. This committee is addressed to first-time delegates, and it is with great honor and pleasure that I get to be part of your introduction to the wonderful world of MUN.

Having said that, I want you to feel free to email me at kalliopivareli2007@gmail.com with any questions, clarifications, or worries you may have.

I look forward to meeting you all in November,

Kalliopi

TOPIC INTRODUCTION

Our world is confronted with many social issues, with gender inequality being one of the most crucial ones which impacts every person on Earth. Gender inequality roots in years and years of patriarchal societies, strict and outdated gender roles, and a wide-spread resistance to change from people in power.

This has resulted in the internalization and integration of misogyny and the unjust thought of the inferiority of women and femininity in society. For example, the underrepresentation of women, girls, and femme people in science, military, business, and economics, to name a few, is eminent in our societies.

Though, it is incredibly important to note that in contrast to one hundred years ago progress toward complete gender equality has been made substantially. Namely, after the first and second waves of the feminism movement women in most countries have gained the right to vote, to have economic independence and many more that we, now, take for granted.

DEFINITION OF KEY TERMS

STEM

“Abbreviation for science, technology, engineering, and mathematics”¹

Patriarchy

“A society in which the oldest male is the leader of the family or a society controlled by men in which they use their power to their own advantage either knowingly or unknowingly”²

Feminism

“belief in and advocacy of the political, economic, and social equality of the sexes expressed especially through organized activity on behalf of women's rights and interests”³

Gender Pay Gap

¹“Stem Definition & Meaning.” *Merriam-Webster*, Merriam-Webster, www.merriam-webster.com/dictionary/stem.

²“Patriarchy.” *Cambridge Dictionary*, dictionary.cambridge.org/dictionary/english/patriarchy.

³“Feminism Definition & Meaning.” *Merriam-Webster*, Merriam-Webster, www.merriam-webster.com/dictionary/feminism.

“The difference between the amounts of money paid to women and men, often for doing the same work”⁴

Diversity

“The fact of many different types of things or people being included in something; a range of different things or people”⁵

BACKGROUND INFORMATION

Educational Differences, based on gender

As of 2020 49.6% of the world’s population consists of women and girls⁶, yet only 35% of STEM students in higher education institutions are women⁷. This, among a lot of social inequalities (especially toward women), stems from deeply patriarchal institutions.

As aforementioned, only 35% of students in higher education globally are women. A clear gendered pattern can be seen in the percentages and statistics of enrollment based on field of study (Figure 1). Male students are the clear majority in the fields of engineering, information and communication studies and services, while women are the majority of students enrolled in education, arts and humanities and, perhaps surprisingly, mathematics and statistics. Also eminent are the outdated gender roles that women are the caretakers and nurtures while men are the only capable of doing manual labor.

⁴ “Gender Pay Gap.” *GENDER PAY GAP* | Definition in the Cambridge English Dictionary, dictionary.cambridge.org/us/dictionary/english/gender-pay-gap.

⁵ “Diversity.” *DIVERSITY* | Definition in the Cambridge English Dictionary, dictionary.cambridge.org/us/dictionary/english/diversity.

⁶ “Population, Female (% of Total Population) | Data.” *THE WORLD BANK*, data.worldbank.org/indicator/SP.POP.TOTL.FE.ZS?end=2020&name_desc=false&start=1960&view=chart.

⁷ “Girls’ and Women’s Education in Science, Technology, Engineering and Mathematics (STEM).” *UNESCO*, 14 Jan. 2020, en.unesco.org/stemed.



Figure 1: Share of female and male students enrolled in higher education, by field of study, global average

In Secondary Education the statistics for advanced mathematics and advanced physics are not surprising (Figure 2). Male Students worldwide are the majority of students enrolled in advanced math and physics classes.

Interestingly enough, 49.2% of women who were first year students of Science and Engineering, switch to a non STEM-related Subject, compared to 32.5% of men.⁸

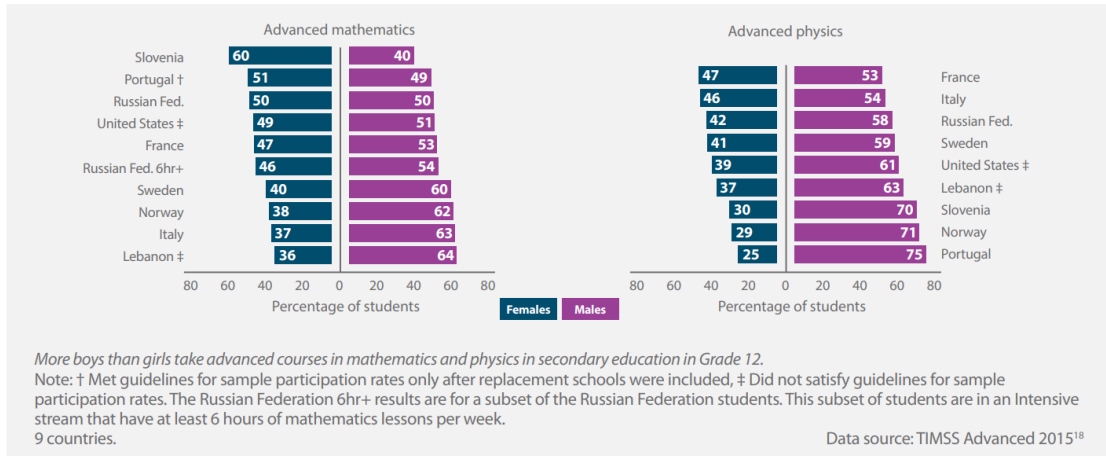


Figure 2: Percentage of students that take advanced courses in mathematics and physics, by sex, Grade 12

To add to that, it is important to remark that educational differences are clear especially in Less Economically Developed Countries (LEDCs) based on gender. Specifically, women in Sub - Saharan Africa are the least likely to be enrolled in higher

⁸ Singh, Ishani. "By the Numbers: Women in STEM: What Do the Statistics Reveal about Ongoing Gender Disparities?" *Cropped-YSM-Wordmark-Only-Black-High-Res.png*, 27 Nov. 2020, www.yalescientific.org/2020/11/by-the-numbers-women-in-stem-what-do-the-statistics-reveal-about-ongoing-gender-disparities/.

education (Figure 3) while girls in South and West Asia have the lowest secondary education enrollment.

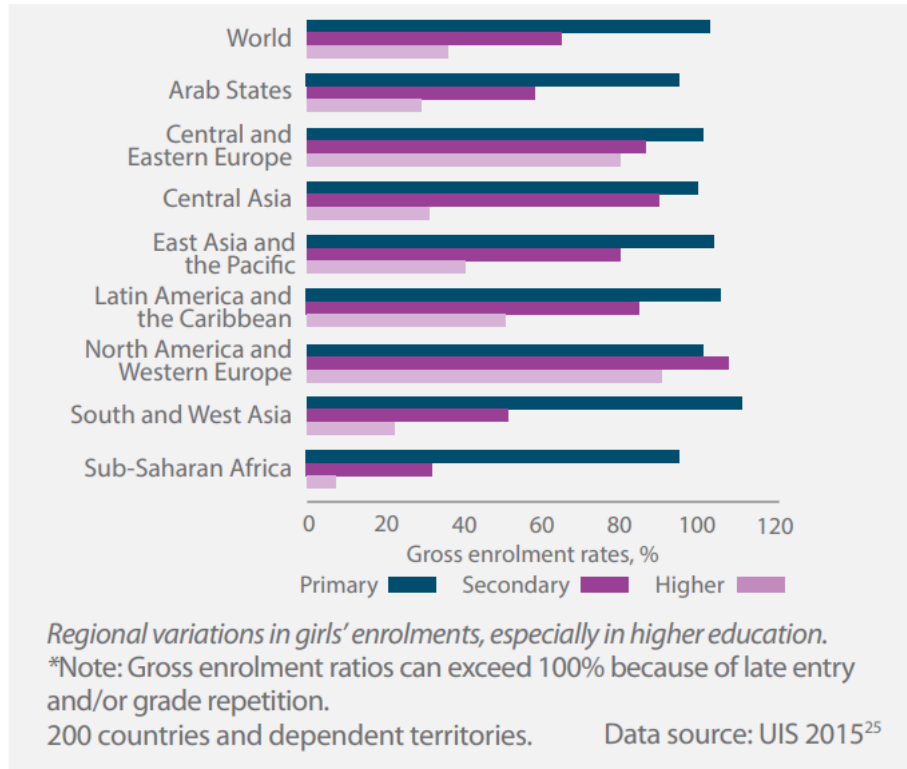


Figure 3: Girl's enrollment ratio from primary to higher education in 2014, world and regional averages

Patriarchal institutions and gender inequality

Most societies over history have had a patriarchal organization, meaning the father or the man was the head of the family. They were the ones making decisions, they were the sole breadwinners of the family and on occasion women needed to be accommodated by a man to appear in public. Over the years women have made substantial progress on accounts of equality between the genders.

It wasn't until the Industrial Revolution that women started getting paid worker positions in factories. Later on, during WW1 when most of the male population in western countries had to go fight in war, women had to take their positions in factories. That of course did not mean they were treated fairly; most employees were working under horrible conditions and were underpaid. Due to the unfair treatment of women and the thought that they were not equals, or not as worthy as men the Gender Pay Gap started broadening.

The Gender Pay Gap is essentially the difference of pay between men and women for the same job, with the same qualifications. While the Gender Pay Gap has been narrowing down over the past few years, it is still present.

First and Second Waves of Feminism

One of the most influential “moving forces” for women all over the globe was the political fight of women in western countries. From 1848 to 1920 Women all over MEDCs (most prominently in the U.S.A) were protesting, marching, and lecturing in order to achieve the right to vote. This period was called the First (out of four) waves of feminism. But that of course doesn’t mean that it was the first sign of doubt toward patriarchal institutions, or feminist ideology.

The most notable achievement of the Second wave of feminism(1960s and 1970s) was the Equal Pay Act (signed in 1963), the grant for women to use contraception, equal education and reproductive freedom.

Influential women in STEM

Marie Currie

Marie Curie is inevitably one of the most well known women in STEM for her work on radioactivity and other numerous inventions. She was also the first woman to ever win a Nobel Prize, as many influential women before her were overlooked, had their achievements stolen by male collaborators or didn't have the resources of their male counterparts, for her work on radioactivity, and the only woman to have won it twice.

Katherine Johnson

Katherine Johnson was a mathematician, pioneering physicist, and a space scientist. She was one of the women who did the calculations that guided NASA’s 1962 Friendship Mission. She was awarded the Presidential Medal of Freedom in 2015.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

Georgia

In 2021 the country of Georgia had the largest amount of women working in STEM fields (55.6%)⁹

⁹ 24, Feb. “Share of Women in STEM by Country 2021.” *Statista*, 24 Feb. 2022, www.statista.com/statistics/1116527/share-women-stem-country/.

UN Women

The UN Body who is mostly responsible for gender equality and the empowerment of women.

United Nations Educational, Scientific and Cultural Organization (UNESCO)

UNESCO has been one of the main organizations that has been most concerned with the involvement of women in STEM. They aim to reduce the gender gap in STEM-related work fields, by improving the participation of girls and women in education and careers. They also strive for the strengthening of gender responsive education, by specialized training to educators and raise awareness on the importance of female participation in STEM.

The Organization for Women in Science for the Developing world (OWSD)

The OWSD is a Unit Branch of UNESCO that aims to bring Women from LEDCs and MECDs together in order to strengthen their role in the developing progress of nations.

BLOCS EXPECTED

Alliance 1

All countries that have specific frameworks, organizations, inclusive and open educational programs and promote Women in education, STEM, entrepreneurship. Also, countries who have shown inclusivity in government and have gender equality in their constitutions, as a fundamental human right.

Alliance 2

Countries with no specific frameworks, or laws that promote the inclusion of women in STEM. Also, most theocracies, and countries with heavily patriarchal communities and beliefs.

TIMELINE OF EVENTS

Date	Description of Event
1903	Marie Curie Nobel, a milestone event. Marie Curie is the first woman to ever win a Nobel Prize and the first person to be awarded twice.

December 10th, 1948	The UN Universal Declaration of Human Rights is proclaimed by the General Assembly.
2010	The creation of UN Women
December 22nd, 2015	The General Assembly decides to establish an annual International Day to recognise the critical role women play in science and technology. The International Women’s Day is on February 11th.

RELEVANT RESOLUTIONS, TREATIES AND EVENTS

UN Universal Declaration of Human Rights¹⁰

The United Nations Declaration of Human Rights is a milestone document in which all fundamental human rights are listed. The whole of the document expresses the equality of all people. Namely, article 1 expresses the equality of rights, article 26.1,.2 the right to education for all and many more set the standard rules and expectations on all levels of equality between people.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

UN Sustainable Development Goal 5

Gender Equality and Women’s empowerment, this SDG expresses the need and the work of the UN, working toward gender equality.

POSSIBLE SOLUTIONS

Educational Programs in LEDCs

Run and organized by UN Women and local organizations, these programs will offer specialized training (focused on STEM-related subjects) that can also benefit the region (green technologies, energy management etc.). These workshops will also be open and safe spaces for minorities (trans women, racial minorities, migrants etc.).

Informative Campaigns

¹⁰ “Universal Declaration of Human Rights.” *UN | United Nations*, www.un.org/sites/un2.un.org/files/2021/03/udhr.pdf.

Campaigns and the promotion of influential women in STEM as well as the showcasing of women-led science and medical companies, labs, innovations, and corporations. This will ultimately lead to more female role models for young girls, which will lead to an influx of inspired and educated women in STEM and other fields.

Inclusivity and diversity in educational institutions

Informative programs on influential women in STEM in primary and secondary education, along with inclusivity and diversity for all students is vital. Specific UN sponsored presentations, infographics and materials can be distributed in schools all over the globe, with the greater result being the broadening of involvement and interest of young girls in STEM-related subjects.

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