2015 Model UN Simulation

Gender and Science

A Model UN exercise for the global leaders of tomorrow, created by the United Nations Association of the USA's Global Classrooms project, and sponsored by the U.S. Department of State.

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UNA-USA Global Classrooms – Mini-Simulation

Topic: Gender and Science
Committee: UNESCO

Introduction

Gender inequality in the fields of science, technology, engineering,and mathematics (STEM) has been ingrained into many societies since human civilization first began. While more and more women have gained access to education and expanded their professional career options, there is still a stigma against women in STEM fields arising from traditional gender roles and persisting stereotypes about women's competence. It is the responsibility of UNESCO, in keeping with its stated priority of promoting gender equality, to reverse the exclusion of women from STEM fields in developed economies, while working to instill values of equality in developing markets.

Step 1 – Set the Scene

Access to technology and information is becoming increasingly widespread and the STEM fields are becoming more popular. With the attraction of billions of dollars'worth of startup money, students are flocking to these fields, and men make up a large proportion of these industries. No region of the world reaches 50% average representation of women in research.This reflects the prevailing belief that STEM fields are traditionally a man's profession, and consequently contributes to the existing gender gap in financial stability and access to education that exists in the world today. That being said, the international community is also more equipped to resolve this issue than ever before. With many less developed nations just beginning to come online, there exists a perfect opportunity to build gender equality into the foundation of these fields as they develop. Should UNESCO act swiftly and effectively, gender equality can become a central tenant of STEM research in some of the most important developing markets in the world.

Should the UN:

A. Encourage all countries to create domestic policies reversing gender equality in STEM fields?
B. Create an international agreement or convention highlighting the issues of gender inequality in science, and take direct action to counteract it?
C. Allow countries to create their own policy to address this issue, and be measured by setting standard international quotas of women professionals in STEM fields?

Step 2 – Introduction of Countries and Topics

There is no topic-specific text content for this step. There are just the resources listed below, to be attached or linked.

Resources:

1. UNESCO Facts (separate document: Background Information)

2. Background on Gender and Science (separate document: Background Information)

3. Priorities to be Discussed (separate document: Background Information)

Step 3 – Country Presentations

There is no topic-specific text content for this step. Only the topic name in the instructions needs to be corrected.

e.g. **If breaking up the lesson plan in two sessions, end the first session after country presentations. This will give the students time to think over the information presented on **Gender and Science** and their country's stance on the issue.*

Step 4 – 1st Coalition Session

Examples to help guide the discussion:

- What anti-discrimination laws and programs exist in your country?
- How does your country partner with the private sector to promote gender equality inemployment?
- Does your nation have any reservations about women coming into the workplace,particularly with them working side by side with men? How does your nation proposethat these be reconciled?
- How can the UN combat social and cultural factors that deter young women from seekingeducation in the sciences?
- How does your nation ensure that women take an active role in shaping the field throughleadership and high-level research positions?

Step 5 – Group Discussion

Examples to help guide the discussion:

- What can the UN do to increase the proportion of female scientists?
- How can the policies your nation is using be adapted for less developed nations?
- What actors other than member states can be called upon and engaged with to reach women in science and make a worldwide impact?
- How can UNESCO prevent women in science from being pipelined into teaching careers or careers in life sciences and medicine?

Step 6 – 2nd Coalition Session

Examples of resolutions include:

- Recognize and publicize the accomplishments of women in science to create role models for female students.
- Utilize opportunities for women to enter scientific industries in nations with especially low representation of female scientists.
- Train teachers to actively combat negative stereotypes against women's capability and encourage female students to seek out careers in science.
- Actively engage women at the university level by providing support and creating positions that are accountable for the representation of female faculty and students.
- Use research grants and achievement awards reserved for women to foster increased representation in the upper echelons of the scientific community.

Step 7 – Introduce Resolutions

There is no topic-specific text content for this step.

Step 8 – Voting

There is no topic-specific text content for this step.

Other Resources:

Country Backgrounds (*separate document: Country Backgrounds)*
Placards (*separate document: Placards*)

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Gender and Science Mini-Simulation: Background Information

UN Body In Focus: *United Nations Educational, Scientific, and Cultural Organization*

Facts:

- The UNESCO committee has existed under slightly varying names and mandates since 1922 during the founding of the League of Nations, although the UNESCO Constitution of the modern committee was not ratified until 1946.
- UNESCO encompasses 195 member states plus nine associate members, the latter being composed of important or semiautonomous subregions of existing states.The only UN member state not represented is Liechtenstein, while 3 non-member states(Niue, Cook Islands, and Palestine) do have voting membership. Observer status has been granted to the Holy See and several multinational organizations and regional blocs.
- UNESCO's mandate revolves around “the building of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, the sciences, culture, communication and information". It cites two Actions global priorities at the present: Africa and Gender Equality.
- UNESCO has undertaken many proactive human rights policies. Some examples of its programs include funding uncensored newspapers in Serbia, giving awards to imprisoned journalists, and building free-speech infrastructure and policies in less developed nations.
- One of UNESCO’s most high profile projects is the WorldHeritage program, which takes effect in nations that cannot afford to protect their cultural history. It both publicizes these sites to tourists and the private sector as something worth preserving and aids in the preservation process.

Background on Gender and Science:

- According to the UNESCO fact sheet, no region of the world has been able to maintainan average representation of women in research of 50% or above.
- Developed nations have the issue of reversing existing patterns of exclusion in the workplace and school. While women have the right to enter the scientific field, many feel that there are cultures of objectification or inequality that make them feel unwelcome.
- It is important to recognize that this issue, while its effects are seen most prominently in the workplace, begins with primary education and gender-biased upbringings.
- Technology plays an enormous role in integrating women into scientific fields, as nations that are just beginning to come online have the opportunity to involve men and women equally in the foundations of their computer science programs.

- Even in regions where women are highly involved in science, such as Myanmar, where the majority of STEM degrees go to women, women's role in the industry is often limitedto teaching positions.
- It is also important to recognize that involvement in STEM fields is not a level playing field, but a hierarchy. In nations with relatively equal representation, the majority of highly funded startups are male-dominated, as are upper management positions.
- UNESCO currently partners with L'Oreal to initiate programs that support women in developing research careers, give publicity and recognition to accomplished women inSTEM fields, and offer regional fellowships targeted at regions like the Middle East andSub-Saharan Africa where women are especially underrepresented.
- It is important to place the issue of gender and science within the framework of larger issues of inequality in order to understand all the factors at play. Namely, 60% of countries do not have equal access to primary and secondary education for the genders.
- There are gender differences within STEM fields as well. Life and environmental sciences as well as medicine have generally strong representation of women across the international community, while engineering and computing are still largely dominated by men. This is an essential fact to recognize if UNESCO's efforts and resources are to be placed where they are most needed.
- Corporations have begun to tackle the issue of gender inequality in STEM fields independently of international and state actors. For example, Google initiated a campaign to get young girls interested in coding by offering free 3D printing for bracelets that girls designed using simple coding techniques.
- Women who receive education and training in STEM fields are often cited as having lower confidence than their male counterparts, which may contribute to the wide gender gap in upper management positions.
- One set of reasons that women find it difficult to seek out careers in science and to attain the high level of education required to seek out research careers pertains to the broader inequalities that exist throughout the world. For example, girls face the risk of early marriage or teen pregnancy.
- Women are also excluded from STEM fields because of negative stereotypes surrounding their intellects and abilities. When the prevailing assumption is that a male-dominated industry is natural, women are deterred from considering these careers.
- UNESCO has begun combating the effects of negative stereotypes by creating a classroom training module for schools in Africa. The content is designed to motivate women to seek out scientific careers and trains teachers to actively recognize and reverse the negative stereotypes surrounding women in science.
- Women who do enter the field face issues of unequal pay and gender discrimination when seeking promotions.
- Stereotypes surrounding the woman's role as a housekeeper and child-bearer make it less socially acceptable to focus on one's career.

- Dutch researchers published a study showing that often grant applications from women are judged more harshly than those of men, which may partially explain the lack of women in research as opposed to salaried positions.
- Many nations see issues with motivating young girls to initiate changes in their scientificcultures because of a lack of existing role models in the field.
- Many nations recognize that women are an untapped resource for human capital and economic growth but must work around existing religious and social standards that are dangerous to break and are often counterproductive to women taking an active role in the workforce. Such nations must consider how religion and the need for female involvement in the workplace can be reconciled.
- Many nations lack supportive communities in which female scientists can take part. InLatin America in particular, many nations lack a women's scientific society that could be integral in creating role model relationships and mentoring other women to enter the field, as well as advancing the careers of existing female scientists.

Priorities to be Discussed:

- Encouraging and supporting women to seek employment in research and development instead of teaching.
- Finding policies that reconcile strict religious and cultural practices with the need to involve women in science.
- Facilitate the creation of professional groups for women in science to support one another and create a culture of cooperation.
- Reverse the effects of classroom priming that teaches young girls that they cannot or should not seek careers in science.
- Combat cultural stereotypes against women that create unwelcoming workplace atmospheres and prevent women from reaching leadership positions.

Gender and Science Mini-Simulation: Country Backgrounds

Brazil

- In Brazil, less than 40% of people in careers in science and technology are women, even in entry-level roles.
- Strict procedures for research and development makes it difficult for women to find a necessary work-life balance and so many who do enter the field favor teaching positions over research.
- Women report that even though access to education is high, there are still many workplace mentalities that make them feel unwelcome in the field.
- Brazil is unique in that it has a high number of women seeking out degrees in mathematics and engineering, but of these women, very few end up actually practicing their profession.
- The Brazilian government is currently reviewing these facts and seeking out ways to improve its national strategies for gender equality in science and technology.

China

- The Chinese government has been actively attempting to increase the number of women represented in science.
- The government recently passed the Outline for the Development of Chinese Women, a ten year plan with an end goal of increasing representation to 35%.
- Women are still bound by family duties and social expectations which makes it difficult for them to pursue research positions.
- China has hosted the International Workshop on Women in Science which aims to examine the cultural reasons that women are often barred from scientific fields despite progressive legislation.
- Women in China still face difficulties seeking education in rural communities, meaning that most of the women represented are from the upper class, and from urban areas.

Costa Rica

- Studies have shown that women in science in Latin America show little solidarity and do not identify as a group or union.
- Women in Costa Rica often discriminate against other women seeking jobs even moreharshly than men do.
- There is a sharp contrast between women in rural versus urban areas as well, with urban women often having access to better education and a greater likelihood of seeking a career in science.
- Women who move from rural to urban areas often begin seeking out equal access to education on their own.
- In Costa Rica, women have been adapting to and seeking out increased gender freedoms and are now getting married at later ages, favoring education over childbearing, and considering living alone a socially acceptable lifestyle.
- The previous facts suggest that underrepresentation is due largely to a lack of support, rather than a lack of interest or motivation.

- Costa Rica has recently undertaken initiatives to ensure that its proactive policies are coming into full effect, rather than existing as empty laws.

Egypt

- Women comprise almost half of the university students in Egypt, and on average,approximately 30% of the STEM faculty.
- These faculty numbers rise considerably for medicine and life sciences, with over 55% representation in pharmacy and 100% representation in nursing.
- That being said, women hold only 2% of higher level positions, including tenured positions.
- The Minister of Higher Education has recently passed reforms that discriminate against women, including actively reallocating resources to male faculty.
- Universities hold only a handful of female deans, and although women have almost equal representation in non-educational scientific fields, very few hold decision-making roles.
- Although Egypt has generally good representation, it has begun to implement policies that actually reverse past progress and continues to exclude women from positions of power in the field.

Germany

- Germany has seen a rise in the number of women working in STEM careers recently but still faces issues with women being grouped into teaching roles or entry-level positions rather than upper level management or research positions.
- The German government has responded to this issue by initiating seminars that encourage and empower women already in the field to advance their careers.
- The program gave them specialized training in interviews, job applications, and grant writing. It also encouraged the women to network with one another and become actors in a more supportive community of female scientists.
- The government has begun researching ways to amend the program and expand its influence to the rest of the nation.

Greece

- Greece suffers from an enormous gender gap in science. In the field of astronomy, for example, only 16% of professionals are female.
- In Greece, working schedules are largely inflexible, with little option for part time work or work with non-traditional hours. It does, however, have a high incidence of guaranteed leave for maternity, time to visit children at school, and time to care for disabled children.
- Childcare in Greece is expensive, and largely unsubsidized. Workplace childcare remains unpopular.
- The generally accepted time schedules for school and workplaces are often offset and incompatible, making it difficult to hold a full time job and have free time during the start and end of school hours.
- Greece is a strong example of how social factors and established status-quo dynamics can keep the gender gap high despite proactive policies to support working women and parents.

India

- The Indian Space Research Organization has recently received large amounts of publicity for its Mars mission that was led and carried out by women. This project is not an exception in the organization, and numerous other projects have been led by women.
- Despite women being involved in science, the media rarely recognizes them for their accomplishments.
- Women in India seeking to pursue higher education in the sciences face challenges with societal expectations and are often looked down upon for rejecting their duties to their homes and husbands.
- Despite having access to education and entry into STEM fields, women are still highly underrepresented.
- What makes India unique is that even in workplaces where women are underrepresented(ISRO has only 20% representation of women, 10% for engineers) they still become projects leads and get to independently oversee important projects.

Italy

- Italy has no national policies or strategies in place to involve women in science andscientific research, for which it has come under scrutiny.
- Italy also rarely gives even small amounts of direct support to independent initiatives to support women in science.
- University enrollment is growing in scientific fields, but is doing so far more quickly for men than women, with less than one third of new enrollments in scientific programs being women.
- Women in Italy continue to favor medical and life science fields over engineering and technology when they do participate in scientific fields.
- Italy has been experiencing gradual growth in the representation of women in STEM fields.

Japan

- The number of female researchers in Japan has been increasing, although very slowly.
- Women still make up only 11.6% of researchers in Japan, which is low by international standards.
- This statistic is especially shocking given Japan's overall national focus on research and development, making up about 3% of its GDP.
- In Japan, the issue is not that the work force does not reflect the volume of educated women, but rather a lack of women majoring in STEM fields.
- The Japanese government has not undertaken any serious policies to encourage women to participate in scientific fields, nor has it taken measures to support those already involved.
- The underrepresentation is something of a cycle, as the lack of professional role models serves to convince young girls that they should not seek out a career in science.

- Japan also has an enormous amount of private-sector involvement in research and development. The amount of power wielded by the private sector in gender issues is a strong indicator of the government's need to engage large corporations in changing therole of women in science.

Luxembourg

- Luxembourg suffers from gender inequality in the sciences. As a means of investigating and combating the problem, it created a special post at the University ofLuxembourg to act as a gender and science representative.
- This representative guided the University in implementing policies that would proactively support women in science by changing the culture of stereotyping in academia.
- Research proposals and designs were made sensitive to the challenges faced by women and young parents of any gender, including deadline extension provisions and special considerations for those raising children.
- Luxembourg began favoring research over teaching for those who must work part time due to household responsibilities, which allowed young mothers, as well as fathers, to engage in research rather than being forced into teaching roles.
- The representation of women in science in Luxembourg, particularly in its research divisions, has increased since these measures were brought into effect.

Myanmar

- In Myanmar, over half of University STEM degrees are being awarded to women.
- 95% of post-secondary teachers of STEM subjects in Myanmar are women.
- While the above statistics seem to reflect a high involvement of women in science, it actually reflects a disparity between access to education and access to careers in research.
- The vast majority of tech startups in Myanmar are run by men, with only a handful of woman entrepreneurs.
- Myanmar is a good example of a nation that is coming online all at once and has managed to involve women in the basic framework of the technology industry, but has simultaneously failed to do so outside of existing gender constraints on career options.
- Myanmar's government has done little to stop gender-based violence against women, let alone promote their involvement in science. Initiatives to change this laissez-faire policy have not garnered a critical mass of support.

Netherlands

- The Dutch government has investigated the situation of women in science within its own nation and found that the bulk of grant applications are submitted by men.
- Similar studies also found that the number of applications from women was far lower than was expected based on the gender proportions of university faculty, meaning that a woman's propensity to put her degree toward research was lower.

- In order to combat this, the Netherlands instituted policy changes that would reverse the effects of some issues uniquely faced by women. It abolished age limits for grants and instituted deadline extensions for pregnancy or parental duties.
- In order to continue the process of enacting proactive policies, legislation was passed that required that the Dutch Research Council have at least one woman on every leadership board.
- The Netherlands continues to amend its current legislation to match new developments and findings on the issue, taking a proactive stance on the issue.

Nigeria

- Women continue to be underrepresented in the sciences in Nigeria, with only half of university students being women.
- Withdrawal from school for early marriage is often cited as the reason that girls do not continue their education.
- While the Nigerian government does have legislation banning discrimination on the basis of gender, tribal and religious customs often counteract these policies.
- Parts of the nation continue to follow Shari'a law, which puts the government in a difficult position. Unlike Saudi Arabia, the head of state does not carry religious authority and the country is not an officially Muslim country, so it is difficult to cater to this group without undermining the legislation it passes for the rest of the nation.
- The competing legal systems in Nigeria make it difficult to make legislation stick, and so grassroots initiatives are often needed.

Saudi Arabia

- Saudi Arabia has gender-segregated education that, while once had unequal quality ofeducation in the sciences, is being improved by new legislation.
- Newuniversity campuses for women are being added and female students may now haveaccess to top researchers, even male ones, through closed circuit television.
- Still, the intersection of professional advancement and religious practices is a complicated one. Women may only work in places deemed legitimate by the government and must have a male guardian to accompany them.
- The government is currently attempting to engage women in the workforce and science by creating government-funded research and industrial projects staffed entirely by women, which removes the need for oversight from male guardians.
- Saudi Arabia has also partnered with the private sector to initiate postdoctoral fellowships for women in science, particularly for petroleum engineers.
- Women working independently are additionally limited by lacking the right to drive and the right to move through the streets unescorted. They have difficulty collaborating with other top researchers because of cultural sensitivities surrounding women conversing with men who are not of their family.
- One area that has allowed women to become actively involved in medicine and technology is the necessity for breast cancer clinics in which female doctors might examine other females.

- Saudi Arabia is an example of a nation working around important religious practices to advance women in science. The government is interested in actively encouraging women to contribute to the nation's human capital, provided that these contributions abide by existing social and religious laws.

United States of America

- The United States is working proactively to increase the volume of women entering scientific fields by engaging and mobilizing universities, employers, and non-government organizations.
- Social stereotypes that contribute to women being granted lower pay, less work space, and less access to research grants are still prevalent in the US.
- The government has actively donated money to organizations such as the InstitutionalTransformation Award that recognizes women in science and distributes grant money to underappreciated scientific contributions from women.
- The United States also has a high degree of community association among female scientists. A key example is an organizations such as the American Association of University Women.
- The government also has a National Science Foundation that has been granted both permission and funding to promote gender equality in the sciences with initiatives like the ADVANCE (Increasing the Participation and Advancement of Women in AcademicScience and Careers) Program to support women entering the STEM fields and to recognize the contributions they make.
- The USA also passed the Science and Technology Equal Opportunities Act of 1980 that empowered government organizations like the National Science Foundation to create programs that actively engaged women and were reserved for groups traditionally underrepresented in the field.

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