Women STEM-UP gender equality policy for higher education

Background

Equality between women and men constitutes a fundamental principle of the European Union, enshrined in Articles 2 and 3(3) of the Treaty on European Union (TEU), and further reinforced as a cross-cutting objective in all EU policies under Article 8 of the Treaty on the Functioning of the European Union (TFEU). The UNESCO´s Strategy constitutes: A world where gender equality in and through education is achieved, assuring girls and boys, women and men, equal rights and opportunities for education and empowerment, and the power and agency to shape their lives and future. (Reference. unesco_strategy_for_gender_equality_in_and_through_education_2019-2025.pdf).

The Erasmus + project "Women STEM UP" aims at tackling a key challenge related to the persistent gender gap in STEM higher education i.e., Science, Technology, Engineering and Mathematics; and consequently, in the labour market. STEM graduates are in high demand in the labour market and STEM jobs are among the most highly paid.

The under-representation of women in STEM educational programmes is a significant problem that has long term effects. Educational institutions are generally interested in attracting women but there are few concrete examples of successful programmes and policies that can be generalized and used to support the participation of females in STEM.

Therefore, it is crucial not only to increase the number of women in STEM but also to prevent them from dropping out from their STEM studies and support them to continue with STEM careers. The "Women STEM UP" project focus on eliminating the factors and circumstances such as gender stereotypes and prejudices that impede women to successfully complete their STEM studies and develop academic or business careers.

This policy document represents one of the key outcomes of the *Women STEM UP* initiative. It is directed towards leadership and decision-makers within higher education institutions operating in STEM fields.

Policy

This policy identifies women as the primary group affected by sex-based discrimination, while employing gender-neutral language throughout its formulation. Although all forms of discrimination are explicitly prohibited, the policy permits higher education institutions to implement positive action measures in support of women. Such measures must be rigorously regulated to ensure they remain exceptional, limited, and nondiscriminatory against persons identifying themselves as other sex than women.

1. **List of basic terms –** have a list of basic terms in the area of gender equality to provide a common platform for the understanding of the importance of considering gender equality and inclusiveness in daily work and as well as in strategic questions contributing to diminishing gender inequality issues in higher education and specifically in the STEM areas

2. **Gender balance through language –** Teachers are aware that there are several genders and that for this reason the terms and language used are important. Use gender – neutral language such as non-restrictive gender pronouns, as well as other non-binary vocabulary. Identify and do not tolerate sexist language. Avoid using language that suggests a specific sex are expected to naturally have certain qualities or behaviour such as 'sensible, helpful women' versus 'strong, technical men´.
3. **Gender-aware teaching** - Conducting gender-aware teaching involve becoming aware that students are received differently depending on, for example, gender identity, and that there are different conceptions of gender identities, the expectations placed on them, and expected characteristics.
4. **Self-reflecting teachers** - Teachers self-reflect on one's own biases, privileges, power dynamics, identity and in general your own situatedness. In many cases, it is therefore an inner journey for teachers to become aware of norms, power structures and ideas about gender. Teachers are aware, due to personal experiences and values, unconsciously convey notions of gender that lead to some students being partially excluded.
5. **Gender-inclusive teaching methods** - **–** Teachers are aware of the fact that gender is significant in learning, knowledge and teaching. When interacting with students or student to student, in various academic settings, the discourse is shaped by the norms and expectations of the academic community. The room, examination and feedback, course information, course literature, and group work are examples of critical discourses for gender inclusive teaching.
6. **Teaching methods and examinations** - Use of alternative teaching methods and examinations to suit different needs are used (seminars, lessons, teamwork, respective, traditional exams, anonymous exams, oral examinations, group exams etc).
7. **Teachers as role models** – Teachers and other staff that students meet in higher education are all socializing agents and sources of learning about expectations, attitudes and behaviors typically associated with sex. Students have the opportunity to meet both male and female teachers, lecturers, course assistants and guest lecturers.
8. **Students´ perceptions of gender** – Stimulate organization of student clubs or groups, raise gender-inclusion awareness. Also have a structured recurring process to capture students' perspectives on gender equality in general and at the course level for all courses.
9. **Gender equitable inclusive teaching material -** Teachers reflect on the concept of gender, critically examine the significance of gender in the teacher's subject area, and question any preconceived notions they may have regarding gender and its consequences in teaching.
10. **Avoiding stereotypes**. - Stereotypes and biases are important cultural factors that may influence women's representation in the STEM areas. A stereotype is an association of specific characteristics with a group. Many examples and teaching materials contain gender bias in activities, photos, words, images, reading materials, written assignments, or even test materials. (i) Review teaching material and renew examples. For instance: searching for course literature (books, etc) in which authors- gender are equally represented. (ii) Developing complementary examples that visualize gender in STEM areas or that are gender neutral.
11. **Avoiding master suppression techniques** - Strategies and policies to avoid situations in which master suppression techniques are used both in the classroom and in the organization. For instance (i) working groups in which the distribution of work is non-balanced regarding gender, for instance female students act as secretaries, male students take the lead, (ii) information asymmetry (information is not shared between all members of a working group),

(iii) inform about levels of expectations, goals, and aims to achieve to avoid to reinforce gender segregation.

12. **Role models** - Provide role models, mentorship and **Yearly plan and checklist -** Develop a yearly gender policy and plan to promote women in STEM higher education, prevent gender-based vulnerability, including sexual harassment. Apply a check list to follow- up the work performed and to identify the level of achievement from year to year. Policies cannot include everything, and a perfect policy does not exist; similarly, it is okay to make mistakes but it is important to learn from them.
13. **Skills STEM professionals** - Engineers must possess strong communication skills, demonstrate effective management capabilities, maintain organizational proficiency, and exhibit a nuanced understanding of the complex interplay between the technical aspects of their work and broader social processes. A narrow math and science emphasis disproportionately disadvantage women because it emphasizes male stereotyped skills while devaluing skills that are gender neutral or female-stereotyped, such as writing, communication, and managerial skills.
14. **Responsibility and resources** - An individual/a group is responsible for driving the work at management level and participates in strategic decisions. The higher education institutions allocate resources and develop short projects to test and evaluate the effectiveness of the policies and working plans.
15. **STEM as viable career option –** Provided gender-responsive career counselling to enhance women to work in the STEM area. Inform the students about professional associations and stimulate students to become members so that they can start building and belonging to networks. Develop career-based scenarios and description of the utility of the educational programs to enhance students' interest in science and their understanding of STEM careers by presenting them with authentic and engaging problems that are related to real-world STEM professions.
16. **Mentorship** - Mentorship helps women learn and grow from the experience of other women who have faced similar challenges and opportunities in their careers. Women benefit from resources that boost their confidence in STEM fields by helping them to overcome social stereotypes linked to their gender and these fields. Develop networks and stimulate teachers, industry representatives and administrative staff to become mentors for the students.