



WOMEN & GIRLS IN **STEM** FORUM 2022

Policy Brief

Executive Summary

On 26 October 2022, [EIT RawMaterials](#), in collaboration with the European Commission, Directorate-General for Education, Youth, Sport, and Culture (DG EAC), organised the second edition of the Women and Girls in STEM Forum – [Girls Go Circular](#) Programme's flagship event.

The second edition's theme was *"Empowering Girls in Science and Technology"*. Policymakers, researchers, entrepreneurs, influential stakeholders, and Girls Go Circular students from across Europe gathered to discuss key actions to empower girls and women to join STEM and ICT and close the gender gap in these sectors. This initiative took place as part of *Action 13 – Encourage women's participation in STEM* of the European Commission's [Digital Education Action Plan](#).

The [New European Innovation Agenda](#) defined deep tech innovation as crucial in reaching the climate neutrality goal by 2050. Thus, greater inclusion of girls and women in STEM and ICT is critical to meet this challenge and accomplish the green and digital transition. Diversity sparks innovation, boosts creativity, improves efficiency, and brings new and much-needed solutions to pressing socioeconomic challenges. Europe can thrive only with the full and equal participation of all innovators in science and technology.

This policy brief synthesises the main findings from the second edition of the [Women and Girls in STEM Forum](#). It highlights the main challenges and approaches to closing the gender gap in STEM and ICT, as well as several policies and initiatives paving the way towards a just and sustainable future in the European Union.

Main Challenges in Closing the Gender Gap in STEM and ICT



"If we help girls with positive role models, giving visibility to women's talents, we can build resilience for when they might be confronted with gender bias and stereotypes." – Opening words by Mariya Gabriel, European Commissioner for Innovation, Research, Culture, Education and Youth.

Gender stereotypes in primary and secondary education

Gender stereotypes lead to a self-efficacy gender gap – the difference between young girls' and boys' confidence and belief in their abilities ([European Parliament, 2022/C 67/18](#)). In primary and secondary education, the gender gap in digital competencies is non-existent or in favour of girls. Nevertheless, girls show lower levels of self-efficacy, even when they outperform or perform equally well to boys.

Gender-biased organisational cultures, structures, and processes in the labour market

There are several invisible barriers that women face in the workplace. For instance, working in gender-biased environments leads women to feel less valued. This particularly affects women in the ICT sector, who only represent a small share of professionals in the European Union. Additionally, women who find their way in ICT are less likely to reach managerial and decision-making positions. Furthermore, they leave technology-related fields in disproportionate numbers during the transition to higher education or the labour market.

Insufficient exposure to female role models

Many women contribute to the world through professional experience and inspiring other girls and women in STEM and ICT. However, their talent and achievements are not always made visible to a larger audience ([European Parliament, 2022/C 67/18](#); [Microsoft Report, 2017](#)). Thus, there might be a lack of a sense of belonging, preventing other girls and women from following a study or career path in STEM or ICT ([Buhnova, 2021](#)).

Lack of ample support for female entrepreneurs

There is large untapped entrepreneurial and leadership potential in Europe. As stressed by Antoaneta Angelova-Krasteva, DG EAC Director for Innovation, International Cooperation: *“For every woman that does not have the opportunity to launch and lead a tech company, Europe loses not only talent and diversity, but it misses an opportunity for economic growth.”* The number of self-employed women is still very low. Out of all self-employed people in the EU aged between 20-64 years, men still outnumber women – 67% versus 33% respectively ([Eurostat, 2021](#)).

Pathways to Closing the STEM and ICT Gender Gap



Deconstructing gender stereotypes from early childhood years

When it comes to STEM and ICT, there are barriers related to mentality and cultural stereotypes. Empowering girls and women in science and technology is a policy priority that should be tackled from early childhood to the first years of education. Deconstructing gender stereotypes through early exposure in education and training supports a more welcoming mindset for young girls wanting to join the STEM and ICT fields and creates an impactful systemic change right from the start.

Initiatives



Girls Go Circular: The programme equips schoolgirls aged 14-19 with digital and entrepreneurial skills through an online learning platform about the circular economy. Girls Go Circular has already trained 25.000 girls in 12 European countries and aims to reach 40.000 girls by 2024 across all 27 EU Member States.



Towards Gender-Sensitive Education: Co-funded by [Erasmus+](#), the handbook for teacher trainers describes more than 50 useful activities for enhancing teachers' gender sensitivity.

Connecting STEM and ICT to concrete societal challenges

"STEM is not just a puzzle to be solved, but it should be understood as a vehicle to tackle many real challenges." – highlighted Mariya Gabriel, European Commissioner for Innovation, Research, Culture, Education and Youth. Adding real-world context to STEM and ICT fields can broaden their appeal. This is the **STE(A)M approach** – adding Arts to STEM. With this, STEM subjects are linked to political, environmental, socioeconomic, and cultural contexts. This approach raises the visibility and social value of STEM professions, making these subjects more attractive to a wider audience.

Initiatives



ESTEAM Fests and Communities: The European Commission project will organise 11 ESTEAM Fests in 19 EU Member States by the end of 2024 to boost women and girls' competencies, inspire them, and offer them the chance to connect with like-minded peers.



STE(A)M Manifesto: The [European Strategy for Universities](#) sets the deliverable to address the underrepresentation of women in

STEM, through a roadmap of activities, which includes a manifesto for gender-inclusive STE(A)M education and careers. The principles and commitments of this manifesto will be co-created together with stakeholders.

The paramount importance of community should not be underestimated

The challenges faced by girls and women in STEM and ICT are easier to overcome if they have the support of a receptive community to inspire them and drive their curiosity further. Thus, peer-to-peer learning, inspiration, hands-on workshops, and in-person events for women are essential in creating a welcoming environment. A collaborative ecosystem approach can strongly impact how girls and women perceive the STEM and ICT fields.

Initiatives



EIT Women: The body promotes female leadership and empowers women to become the next generation of leaders in innovation, business, entrepreneurship, and technology.

Increased visibility for female role models and their success stories

If young girls and women are supported by inspiring female role models, more resilience is built for when they are confronted with systemic barriers. Inspirational models and stories pave the way for new players to follow.

Initiatives



EIT Women Leadership Award: The EIT (European Institute of Innovation and Technology) award recognises outstanding

achievements of female leaders and entrepreneurs from the EIT Innovation Community.



#EUwomen4future: The European Commission's social media campaign puts a spotlight on women's professional achievements in culture, education, sport, and science.



#SHEU LEADS: Another social media campaign was launched on 8 March 2022 by Mariya Gabriel, European Commissioner for Innovation, Research, Culture, Education and Youth. It spotlights girls and young women under 30 that are making a difference in their communities and doing an outstanding work in the fields of Innovation, Research, Education, Youth, Culture and Sport across the EU.

The innovation ecosystem and labour market must be targeted

Reducing the gender gap in STEM and ICT has a huge potential for boosting Europe's economic growth, promoting regional development, as well as socioeconomic cohesion. Initiatives to support female entrepreneurs and innovators, such as matchmaking activities between female founders and investors, should be complemented by systemic interventions that transform organisational processes, cultures, and structures.

Initiatives



Women TechEU: The scheme offers first-class coaching and mentoring to female-led deep tech start-ups.



Women2Invest (EIT): The initiative helps women take their first steps as entrepreneurs, training them in the fundamentals of venture investment and matching them with investors.

Closing remarks

Systemic barriers prevent talented girls and young women from pursuing STEM and ICT studies and careers. More than ever, we need to engage them in finding innovative solutions to tackle global challenges. All STEM and ICT actors should be aware of this and recognise the importance of closing the gender gap in these fields, as well as the crucial role of incorporating social inclusion and equity approaches in how the leaders of tomorrow are being trained.

This is what the Women and Girls in STEM Forum's key mission is – to support young girls in STEM and ICT and to create an open and inclusive environment for advancing the gender equality agenda in these fields. The policy debate on this topic will be developed further at the third edition of the Women and Girls in STEM Forum in 2023.

About Us

[EIT RawMaterials](#), supported by the Directorate-General for Education, Youth, Sport, and Culture (DG EAC), launched the [Girls Go Circular](#) Programme in 2020 to support *Action 13 – Encourage women's participation in STEM* of the European Commission's [Digital Education Action Plan](#) and contribute to reducing the gender gap in STEM and ICT. [Women and Girls in STEM Forum](#) celebrates each year the participation of thousands of European schoolgirls in the Girl Go Circular learning programme, and connects them with policymakers, industry leaders, and researchers to advance the European agenda on gender equality in STEM and ICT education and careers.

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