



United Nations
Educational, Scientific and
Cultural Organization



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Gender-responsive STEM education

Empowering girls and women for the jobs of today and tomorrow

More girls are in school today than ever before, but they do not always have the same opportunities as boys to complete and benefit from an education of their choice.

Too many girls and women are held back by biases, social norms and expectations influencing the quality of the education they receive and the subjects they study. They are particularly under-represented in science, technology, engineering and mathematics (STEM) education, and consequently in STEM careers.

UNESCO is giving special attention to this issue as part of its efforts to promote the empowerment of girls and women through education and as a response to its [Member States' decision](#) on UNESCO's role in encouraging girls and women to be leaders in STEM, including arts and design.

35% STEM students in higher education are women

Worldwide, women represent only 35% of students pursuing STEM fields in higher education.¹ It is in poor countries where such talent is most needed and yet where women are most underrepresented.

28% Researchers in science are women

Worldwide, women represent only 29% of scientific researchers.² Gender gaps reduce possibilities for innovation and fresh perspectives to present and emerging challenges.

What UNESCO does

UNESCO, as the United Nations' specialized agency for education, and the only United Nations' agency with specialization in science, culture, and communication and information, is well-placed to support Member States to establish holistic and integrated responses that close gender gaps in STEM education and careers. UNESCO's work on gender-responsive STEM education supports:



Data and evidence: UNESCO's [Cracking The Code: Girls' and women's education in STEM](#) report is the first-ever to document the drivers of gender disparity in STEM studies globally, and provide evidence-based policy and programme guidance. UNESCO has also generated strategic information at country-level through support to research in [Asia](#) and comparative assessments of learning in maths and science in [Latin America](#), and [East and Southern Africa](#).



Policy and legislation: UNESCO supports Member States to review, update and foster the implementation of their [education legal frameworks](#) to eliminate discrimination and ensure gender equality in education. UNESCO's Science Sector's STEM and Gender Advancement ([SAGA](#)) project has also supported the design and implementation of science, technology and innovation (STI) policy instruments that address gender equality in STEM.



Learning for empowerment: UNESCO supports education system changes that lead to empowering and gender-transformative learning structures and environments. UNESCO supports the development of tools to ensure STEM [curricula and textbooks](#) are free from stereotypes and bias, [teacher training](#) in gender-responsive STEM pedagogy, [youth consultations](#), [mentorship opportunities](#), and [access to female role models](#) to build girls' interest, skills and understanding of STEM careers.



Cooperation and coordination: As the co-lead for the [EQUALS Skills Coalition](#), UNESCO is supporting coordinated action to empower women and girls to acquire skills to become both ICT users and creators in the digital world as well as in broader STEM fields. UNESCO also facilitates policy dialogue, experience sharing, and cooperation through global and regional events such as its Cracking the Code [International Symposium and Policy Forum](#).

¹ Source: UNESCO, 2017. *Cracking the code: Girls' and women's education in science, technology, engineering and mathematics (STEM)*. <https://unesdoc.unesco.org/ark:/48223/pf0000253479>

² Source: UNESCO Institute for Statistics. Women in Science website. <http://uis.unesco.org/apps/visualisations/women-in-science/>



Catalysing gender-responsive STEM education in Africa and beyond

In 2018, UNESCO, with support from the Government of Japan and in partnership with the Institut de la Francophonie pour l'éducation et la formation (IFEFF), the African Union's International Centre for Girls' and Women's Education in Africa (AU/CIEFFA), Microsoft, the Centre for Mathematics, Science and Technology Education in Africa (CEMASTE), and the Forum for African Women Educationalists (FAWE), and with support from Senegal's Ministry of National Education and its Ministry of Higher Education, Research and Innovation, have strengthened the national capacities of francophone African countries to provide quality gender-responsive STEM education, and close gender gaps in STEM studies and careers.

Teacher educators, teachers, school administrators from 12 francophone African countries have received training, and a corps of Master Trainers has been established to support local capacity-development efforts.

Interventions at the African Union, on the side-lines of UNESCO's general conference, at a Pan-African conference on education, and other events engaged more than 750 policy-makers, practitioners, development partners, researchers, and civil society partners directly in the importance of this issue and called for national action on the African continent.

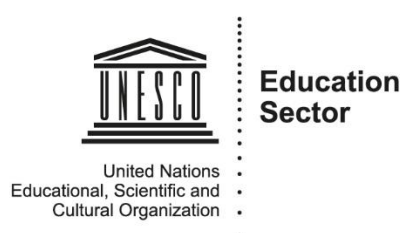
UNESCO's International Symposium and Policy Forum held in 2017 brought together more than 350 stakeholders from over 70 countries to share evidence and good practice to engage women and girls in STEM studies and careers. A strong online presence has reached over 12 million through social media engagement.

UNESCO will make the English and French training materials available online in 2019 as open resources, along with a toolkit to support advocacy efforts.



UNESCO Education Sector

Education is UNESCO's top priority because it is a basic human right and the foundation on which to build peace and drive sustainable development. UNESCO is the United Nations' specialized agency for education and the Education Sector provides global and regional leadership in education, strengthens national education systems and responds to contemporary global challenges through education with a special focus on gender equality and Africa.



The Global Education 2030 Agenda

UNESCO, as the United Nations' specialized agency for education, is entrusted to lead and coordinate the Education 2030 Agenda, which is part of a global movement to eradicate poverty through 17 Sustainable Development Goals by 2030. Education, essential to achieve all of these goals, has its own dedicated Goal 4, which aims to *"ensure inclusive and equitable quality education and promote lifelong learning opportunities for all."* The Education 2030 Framework for Action provides guidance for the implementation of this ambitious goal and commitments.



Stay in touch

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