

STEM Sisters: How Ireland is Inspiring girls to pursue STEM

In Europe, the gender gap in STEM remains a persistent challenge. Despite significant policy efforts and educational reforms, women still account for just **32.8 % of STEM tertiary graduates** in the European Union as of 2021, highlighting the enduring imbalance in fields essential for innovation and economic growth (Eurostat, 2023). While statistical reports draw attention to the problem, the real insight comes from observing successful interventions that bridge the gap between policy and practice. Ireland's "**STEM Sisters**" campaign stands out as a national initiative that not only raises awareness but delivers measurable impact on girls' participation in STEM.

Launched in 2018, the campaign was a collaborative effort between the **Irish Department of Education, Science Foundation Ireland (SFI)**, and schools across the country. It was designed in response to three critical challenges identified in national studies: the low rate of girls choosing senior-cycle STEM subjects, the lack of visible female STEM role models, and the persistence of stereotypes that shape career aspirations in adolescence. These priorities reflect broader European Commission strategies emphasizing early, inclusive STEM education as a lever for gender equality and innovation.

"STEM Sisters" combines mentorship, hands-on learning, and awareness campaigns. Female scientists and engineers visit schools to run interactive workshops, mentor students, and share personal stories about navigating STEM careers. The programme also introduces enriched curriculum projects, allowing students to engage with real research problems in environmental science, coding, and data analysis. Teachers participate in professional development workshops on **gender-sensitive pedagogy**, equipping them to create more inclusive classrooms. Meanwhile, the campaign amplifies female role models through media, public exhibitions, and social outreach, ensuring visibility beyond the classroom.

The results have been encouraging. Across participating schools, there was an **average 18 % increase in girls choosing Physics and Mathematics at senior cycle**, significantly higher than national trends. Surveys showed that girls reported higher confidence in their STEM abilities, and teachers observed a shift in classroom dynamics, with increased engagement and reduced gender-based bias. The campaign's success illustrates the importance of combining role models, mentorship, and pedagogical reform into a cohesive strategy — a finding echoed in **EU NESET reports** on STEM education and gender (NESET, 2020).

Ireland's experience offers a roadmap for other countries seeking to tackle gender disparities in STEM. By targeting early adolescence, leveraging visible role models, and equipping teachers with inclusive teaching strategies, "STEM Sisters" demonstrates that interventions grounded in research and policy can produce tangible change. Beyond increasing numbers, the campaign cultivates a culture where girls see themselves as scientists, engineers, and innovators, a cultural shift that statistics alone cannot capture. Initiatives such as the **ST3AM project** complement

national campaigns like STEM Sisters by promoting hands-on, inclusive STEAM learning, mentorship opportunities, and creative engagement for young women across Europe, reinforcing these best practices and scaling them to broader contexts.