

Girls and STEM:

How can we support girls in ASEAN to enter STEM careers?

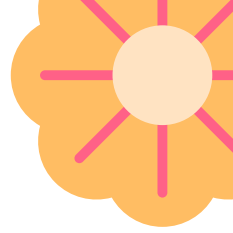
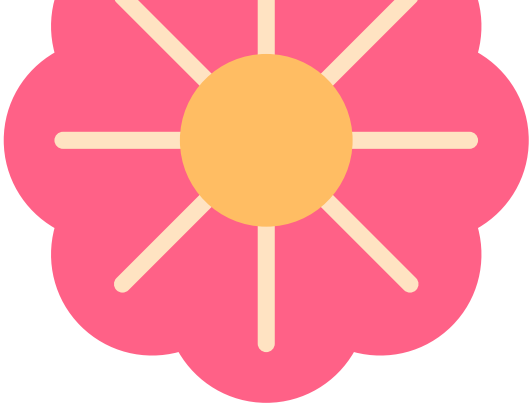


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ABOUT THE RESEARCH

UNICEF wants to find ways to better support adolescent girls to pursue STEM careers.

To do this, we spoke to girls aged 15 to 19-years-old, and also to experts, in Indonesia, Cambodia and Viet Nam



WHY IS IT IMPORTANT TO SUPPORT GIRLS TO PURSUE STEM CAREERS?

There are lots of changes happening in the world that mean STEM jobs are becoming increasingly important, including in the ASEAN region. STEM jobs are well-paid, and people who do these jobs play an important role in helping society become better and more advanced.

It is important that both girls and boys feel empowered to pursue these types of careers and have access to channels that prepare them to do so. Society at large needs to recognize that both girls and boys have important contributions to make to STEM in our world. Both girls and boys have the same capacity to succeed in STEM subjects, and should have the same opportunities to pursue a STEM career.

Unfortunately, women are underrepresented in STEM fields. For example, only 29.3 per cent of the world's researchers are women, and this drops to 23.9 per cent for East Asia and the Pacific.¹ Also, fewer girls than boys seem to be interested in doing STEM jobs - girls told us that this can be for a number of reasons:

- ✿ Sometimes girls feel that boys are naturally better at STEM subjects than girls. This can make girls lack confidence and the belief that they can succeed in STEM, and so they choose to study other subjects instead.
- ✿ Girls notice that there are more men than women doing STEM jobs, so they don't feel these types of careers are relevant to them. The lack of relevant role models and 'champions' for girls in STEM also creates strong subliminal messages for girls that STEM jobs are not for them.
- ✿ Girls, their families and the community often feel that girls are better suited to other kinds of jobs that are traditionally held by women, like being a teacher or tailor or working in the service industry. Social stereotypes can make girls feel like they don't have the right to 'dream big' (although sometimes being a doctor is considered suitable for girls).
- ✿ Girls are often expected to get married and focus on taking care of children and the home once they finish their education, so family members and the community often believe there is no reason to invest in advanced education or careers for girls.
- ✿ Girls are often not aware of the STEM career options, opportunities and pathways available because there is a lack of information within the school environment.

¹ UNESCO Institute of Statistics. (2019). *Women in Science*. Fact Sheet No. 55.

WHAT IS STEM ?

STEM stands for 'science', 'technology', 'engineering' and 'maths', and there are lots of different STEM careers. Some examples include becoming a doctor, a tech entrepreneur, a software developer, an engineer, or a scientist. There are also STEM careers in lots of different sectors, including healthcare, agriculture, energy production, and telecoms.

WHAT KIND OF SUPPORT DO GIRLS WANT?

We asked girls what help they needed to pursue STEM careers and they said that the following would be most useful:

"ROLE MODELS/MENTORS ARE MOST IMPORTANT BECAUSE THEY HAVE ADVANCED EXPERIENCE TO TEACH AND GUIDE ON HOW TO GET THE JOB AND ALSO TO INSPIRE."

(GIRL WORKSHOP PARTICIPANT, CAMBODIA, 17, RURAL)

Role models and mentors: Girls want to be connected with people, particularly women, who are already in these careers and who can share their experience and advice. 'Community' role models and mentors are especially desirable. These are women from girls' own communities, close to them in age, and in the early stages of their career or further along in their education.

"A LOT OF GIRLS IN CAMBODIA HAVE A DREAM, LIKE BEING AN ENGINEER, BUT THEY DON'T KNOW WHAT EXACTLY ENGINEERS DO, OR THE WORK, SO IF WE CAN GIVE THEM OPTIONS TO INTERN, THEY CAN LEARN. THEY CAN LEARN MORE ABOUT HOW IT WORKS IN REAL LIFE."

(GIRL WORKSHOP PARTICIPANT, CAMBODIA, 17, RURAL)

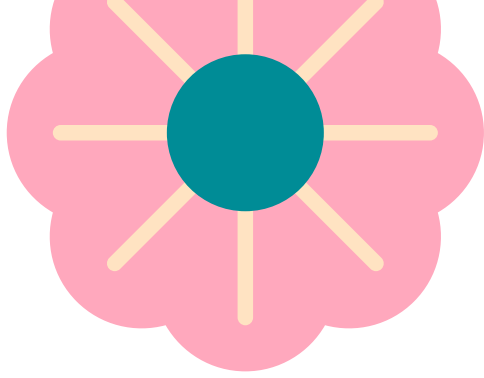
Industry experience: Girls want opportunities to get experience in businesses related to STEM (like technology or research companies) to learn what people do in these jobs. Industry experience includes study tours and career talks at companies, internships, or collaborative projects between schools and STEM businesses – the most useful experiences would be in STEM companies that girls are familiar with (e.g., Gojek in Indonesia).

"THERE'S A SCHOLARSHIP BUT YOU NEED SPECIFIC REQUIREMENTS ON YOUR GPA, AND I AM NOT CONFIDENT ENOUGH TO APPLY."

(GIRL WORKSHOP PARTICIPANT, INDONESIA, 19, RURAL)

Scholarships: Girls say that, while financial support can help them to progress with STEM education, they often don't know where to find scholarships or how to apply, or they don't feel confident applying. So the application process must be clear and simple, and girls may need support and encouragement to apply from people around them, such as their teachers or school academic counsellors.





WHAT DID WE LEARN?

Girls need more information about different STEM career options, the potential benefits of STEM jobs, and what they have to do to get these jobs. It will be useful to highlight local STEM job opportunities, and the fact that STEM jobs are not only valuable in today's world but they tend to also be well-paid. Linking STEM to entrepreneurship opportunities may also be valuable, especially in Indonesia.

Girls need support from their parents, families, teachers and communities to pursue STEM careers. They need encouragement, as well as financial support, to progress with STEM education. And they need their families and communities to proactively challenge the gender stereotypes that value boys' education and careers over girls', and that restrict girls to more traditional roles and jobs that limit their aspirations and potential.

To make this happen, UNICEF can work with governments, STEM businesses and communities across the region to ensure that more girls will be inspired and able to pursue STEM careers in the future!



BOX: Expanding Girls' Digital Literacy in ASEAN

Digital literacy – the ability to use digital technology safely and effectively – is increasingly important for participation in today's economies and societies. It is fast becoming a baseline skill required in many jobs, especially in STEM fields. In fact, by 2030, an estimated 80% of jobs in Southeast Asia will require basic digital literacy.

Yet globally, girls and women still cannot access and use digital technology as much as boys and men can. Because they already face disproportionate disadvantages in accessing education and economic opportunities, girls and women risk falling further behind in an ever-widening digital gender divide.

Boys are 1.8x more likely than girls to own a smartphone.

Women are 25 % less likely than men to know how to use technology for basic activities.

Digital literacy challenges across ASEAN:

- ✿ Mobile phones are the main source of digital access, and adolescents use these mainly for entertainment and communication.
- ✿ Adolescents generally have very basic digital literacy, especially girls, and lack the means to develop more advanced competencies.
- ✿ Poor infrastructure and availability of devices and data, and lack of teaching quality in schools are all barriers to technology access, especially in rural and marginalized communities.
- ✿ Stereotypical gender roles negatively affect girls' confidence and motivation to embrace digital literacy and pursue more advanced competencies.

To address the problem, we need to:

- ✿ Build an evidence-base to address all the data, access and learning gaps girls face.
- ✿ Increase girls' access to affordable internet and digital devices especially in rural areas.
- ✿ Develop quality digital instruction materials and content in local languages.
- ✿ Address stereotypical social norms that limit girls' technology-related aspirations and opportunities.

Extracted from

UNICEF East Asia and Pacific Regional Office (EAPRO). (2023). Girls' digital literacy in the East Asia and Pacific region: Spotlight on Cambodia, Indonesia, Lao PDR, Timor-Leste and Viet Nam.

To read more please access full study: <https://www.unicef.org/eap/reports/girls-digital-literacy-east-asia-and-pacific-region>