Welcome!

NGCP National Webinar:

Girls in STEM: A (Data-based) Tale of Confidence & Satisfaction

NGCP

20 YEARS TRANSFORMING STEM

Girls in STEM: A (Data-based) Tale of Confidence & Satisfaction

February 21st, 2023

NGCP Vision

The vision of the National Girls Collaborative Project is to **support and create STEM experiences that are as diverse as the world we live in**.

Our Goals

Connect + Create + Collaborate

1

Build and sustain a network of advocates to provide equitable and inclusive STEM opportunities.

2

Catalyze equity in STEM from research to practice by providing actionable knowledge that transforms the STEM experience.

3

Increase our collective impact by strengthening organizational effectiveness and enhancing our fiscal sustainability.

NGCP Activities

- Network Partnerships
- IF/THEN Collection
- FabFems
- Youth Advisory Board
- State Leadership Teams

National Webinars

- Offered monthly on topics to help our networks grow and thrive
- Speakers include educators, researchers, authors, and diverse STEM professionals
- Sign up: https://www.ngcproject.org/events-announcements

"I have gotten more out of this than the dozens of other presentations I have attended this summer."

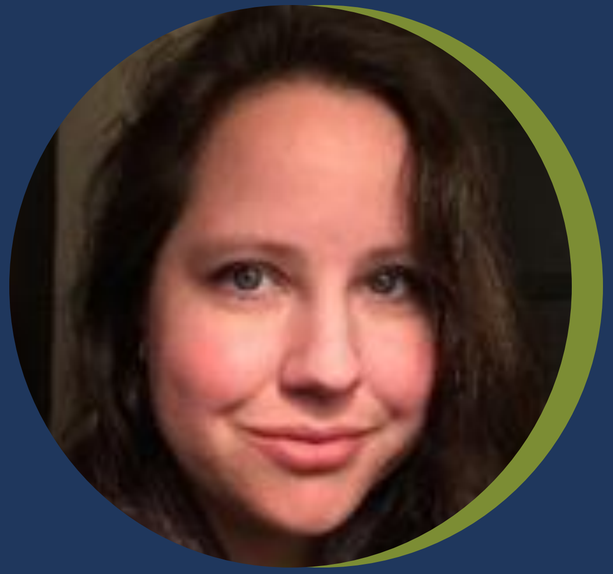
"I found this useful and enjoyable."

"I really like all the resources placed in the chat that I can go and flip through to find what is most helpful to my organization"

NGCP Newsletter

- National in-person and online events
- STEM resources for engaging girls and youth, professional development opportunities for educators, and opportunities for youth
- Research and reports related to STEM and equity, informal STEM education and learning
- NGCP updates and events, including webinars, knowledge products, and tools

Speakers



Jennifer Breslin

Executive Director and Founder, Futuristas

Claudine Schmuck

CEO, Gender Scan

Vitória Acerbi

Consultant, Gender Scan

GENDER AND STEM

GLOBAL CONTEXT SNAPSHOT

Jennifer Breslin, Executive Director, Futuristas

NGCP Webinar

February 2023

FUTURISTAS

Gender and STEM: Persistent Trends

- Gender Disparities in:
  - **Access** to and **use** of digital technologies
  - **Relevance** of technologies
  - Meaningful access to quality STEM **education** in many parts of the world
  - **Representation** in studies and careers, particularly in decision-making positions
  - **Funding** for entrepreneurs in tech and innovation
- **Harassment** in the workplace
- **Stereotypes** on gender and technology
- Online **violence** against women
- **Backlash** when gains are made
- And continuing **Opportunities**

FUTURISTAS

Gender and STEM: Reframing

What is our goal?

ADDRESS ASYMMETRIES IN FOCUS	
Private / Corporate Interest	**Public Good**
Economic Development / Growth	**Human Rights Based**
Sector / Stakeholder	**Whole of Society**
Girls/Women as Individuals / Group	**Institutional Barriers**
Digital Literacy	**Digital Citizenship**
Women in Tech	**Tech for Women**
Reacting/Catching Up	**Anticipation**
Breaking things	**Knowledge & Innovation**

FUTURISTAS

Gender and STEM: Actions

ADDRESS ASYMMETRIES IN FOCUS		APPROACHES & LEVERS (Feminist perspectives, women/girls rights, empowerment and participation)
Private / Corporate Interest	**Public Good**	**Governance and Digital Commons**
Economic Development / Growth	**Human Rights Based**	**Economic, social, cultural, civil, political, environmental rights; Violence Against Women**
Sector / Stakeholder	**Whole of Society**	**Systemic and Inter-disciplinary**
Girls/Women as Individuals / Group	**Institutional Barriers**	**Policy, Law, Investments, Services, Industry responsibility, Accountability, Norms, Access, Education**
Digital Literacy	**Digital Citizenship**	**Whole of Life; What, Why, How; Agency**
Women in Tech	**Tech for Women**	**Gendered Innovations and Gender Analysis**
Reacting/Catching Up	**Anticipation**	**Futures Thinking: Plausible and Desired Futures**
Breaking Things	**Knowledge & Innovation**	**Learning, Care, Innovation, Research & Data**

FUTURISTAS

Get in Touch

jennifer.breslin@futuristas.org

ADDITIONAL UN RESOURCES

UN Commission on the Status of Women 67th Session on Innovation and Technical Change
https://www.unwomen.org/en/csw/csw67-2023

UNESCO Artificial Intelligence and Gender Equality
https://unesdoc.unesco.org/ark:/48223/pf0000374174

UNESCO Report on Girls and Women in STEM Education
https://unesdoc.unesco.org/ark:/48223/pf0000253479

UNESCO Women in Science
https://uis.unesco.org/en/topic/women-science

UN Global Digital Compact
https://www.un.org/techenvoy/global-digital-compact

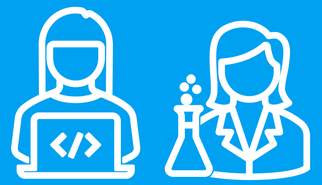
Equals in Tech Global Partnership
https://www.equalsintech.org

Generation Equality Technology and Innovation Action Coalition
https://techforgenerationequality.org

Girls in STEM: a (data-based) tale of confidence and satisfaction

GLOBALCONTACT
Études&Conseil

Girls in STEM: a (data-based) tale of confidence and satisfaction



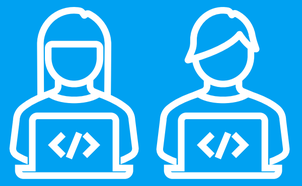
What do teenage boys & girls think of STEM professions?
How do teenage boys & girls project themselves into STEM professions?
What inhibits the interest of teenage girls in STEM fields?
What triggers the interest of teenage girls in STEM fields?
The satisfaction of young women studying in STEM fields at university
The challenges of young women studying in STEM fields at university

Methodology note

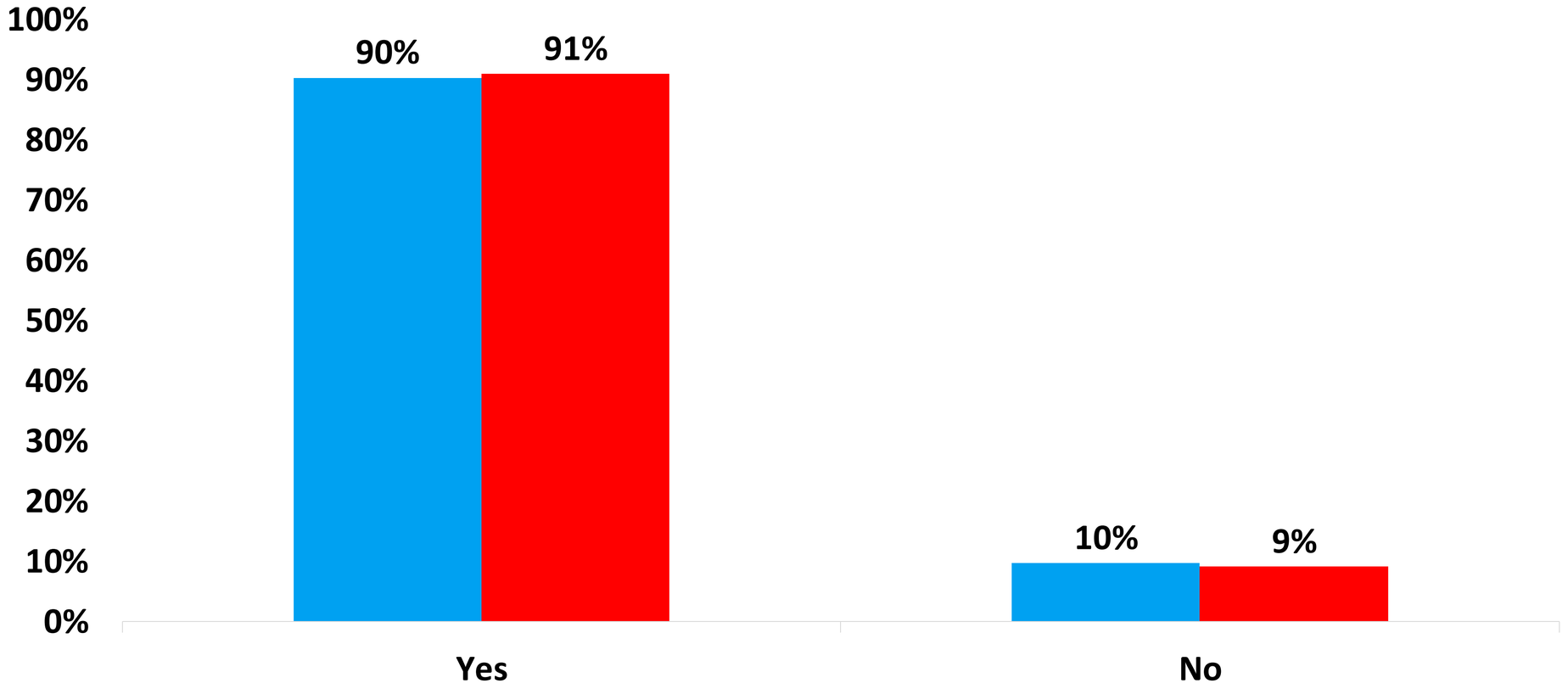
	Men	Women	Other	Total	From
Teenagers in developed countries	1200	1750	69	3019	AUS, CAN, CZE, FRA, IRE, LTU, ESP, POR, CHF, USA. (13 countries)
Students in developed countries	985	1904	36	2925	+BE, DKK, FIN, DE, GR, HUN, ISL, ITA, JPN, LUX, NDL, PL, SVK, SVN, UK. (28)
Chi Square and Z-test (statistical analysis)					

Perception of ICT professions

For 90% of teenagers, gender is not an issue



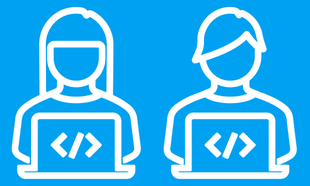
Do you think ICT jobs are as suited for women as for men?
Responses in % by gender



@GenderScan

The reasons why gender is not an issue

1stly, women & men are equal



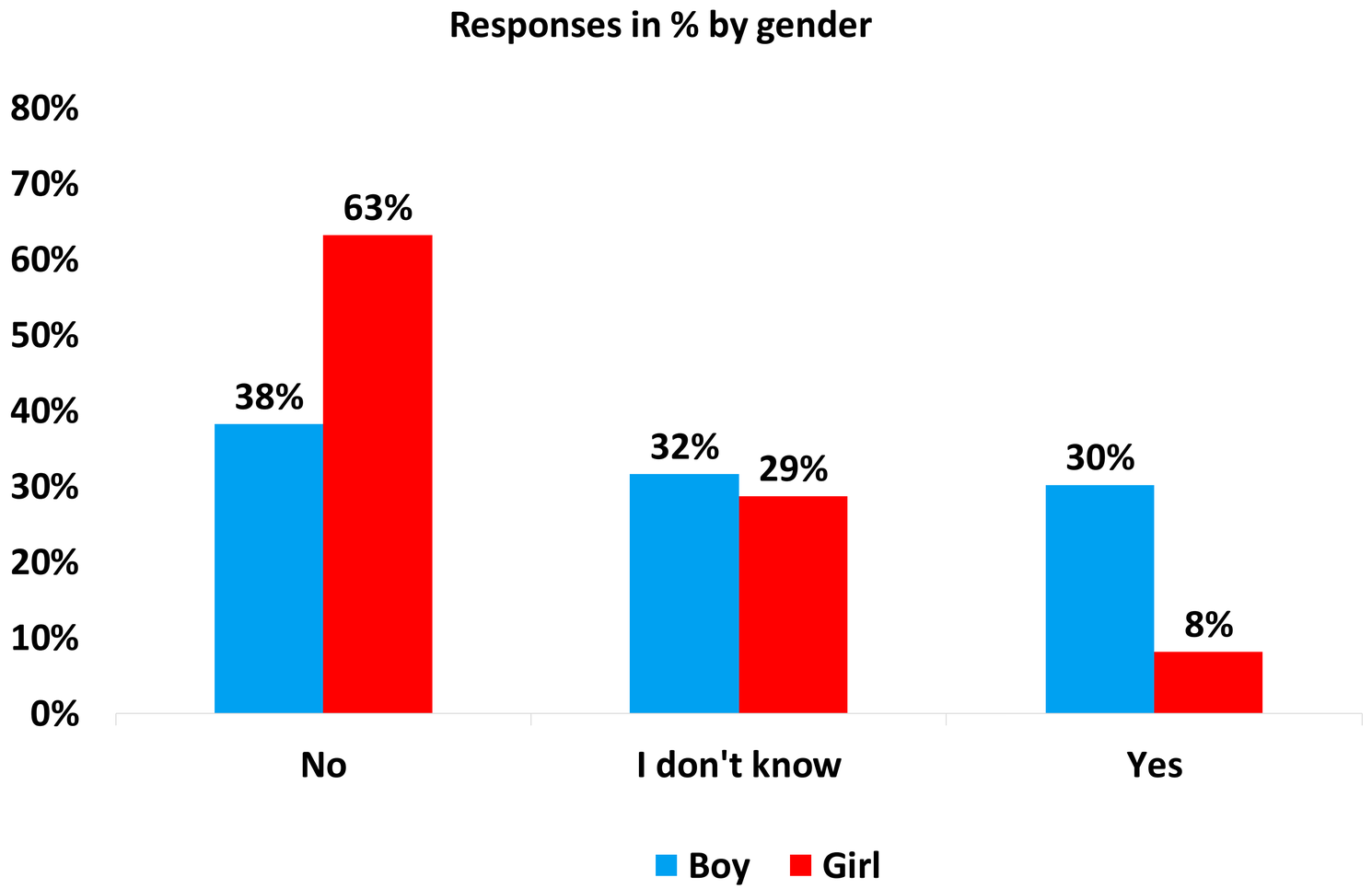
Women and men are equal Boys: 44% Girls: 48%	"Human beings are equal in reasoning, men and women can use their intellect equally." Boy, Portugal, 20 years old	“Women and Men are equal and should have equal job opportunities.“ Girl, Ireland, 15 years old
There are no gendered professions Boys: 17% Girls: 28%	"Because gender doesn't matter. Gender does not effect how well someone can work in any field." Boy, Czech Republic, 15 years old	“All genders are capable of the same thing. Some are better in coding; it depends on the person.“ Girl, USA, 14 years old
ICT do not require specific skills of men or women Boys: 27% Girls: 16%	“Gender does not matter for these jobs; you just have to develop the skills." Boy, Portugal, 17 years old	“These professions have requirements that both men and women can provide.“ Girl, Canada, 14 years old
I do not see why it would not be suitable for both Boys: 10% Girls: 7%	"My dad is in IT, my mom has a PhD in Science, so why not?" Boy, Ireland, 15 years old	“There's no reason why they can't be for both genders.“ Girl, Ireland, 14 years old
We have the same skills, it's society that creates differences Boys: 2% Girls: 1%	"The different attractions for ICT (depending on gender) are purely cultural and determined by the social environment.“ Boy, France, 19 years old	"Gender has nothing to do with skills. But there are environments where it is difficult to evolve not being a man: we are not taken seriously, we face harassment.“ Girl, France, 16 years old

@GenderScan

Their projection into the ICT sector

A considerably higher % of teenage boys express the wish to work in ICT, a significantly higher % of teenage girls say they do not wish to work in it

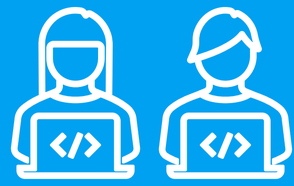
When you're older, would you like to work in the ICT sector?



@GenderScan

What inhibits teenagers' interest in ICT

Girls more than boys say they simply do not like digital technology



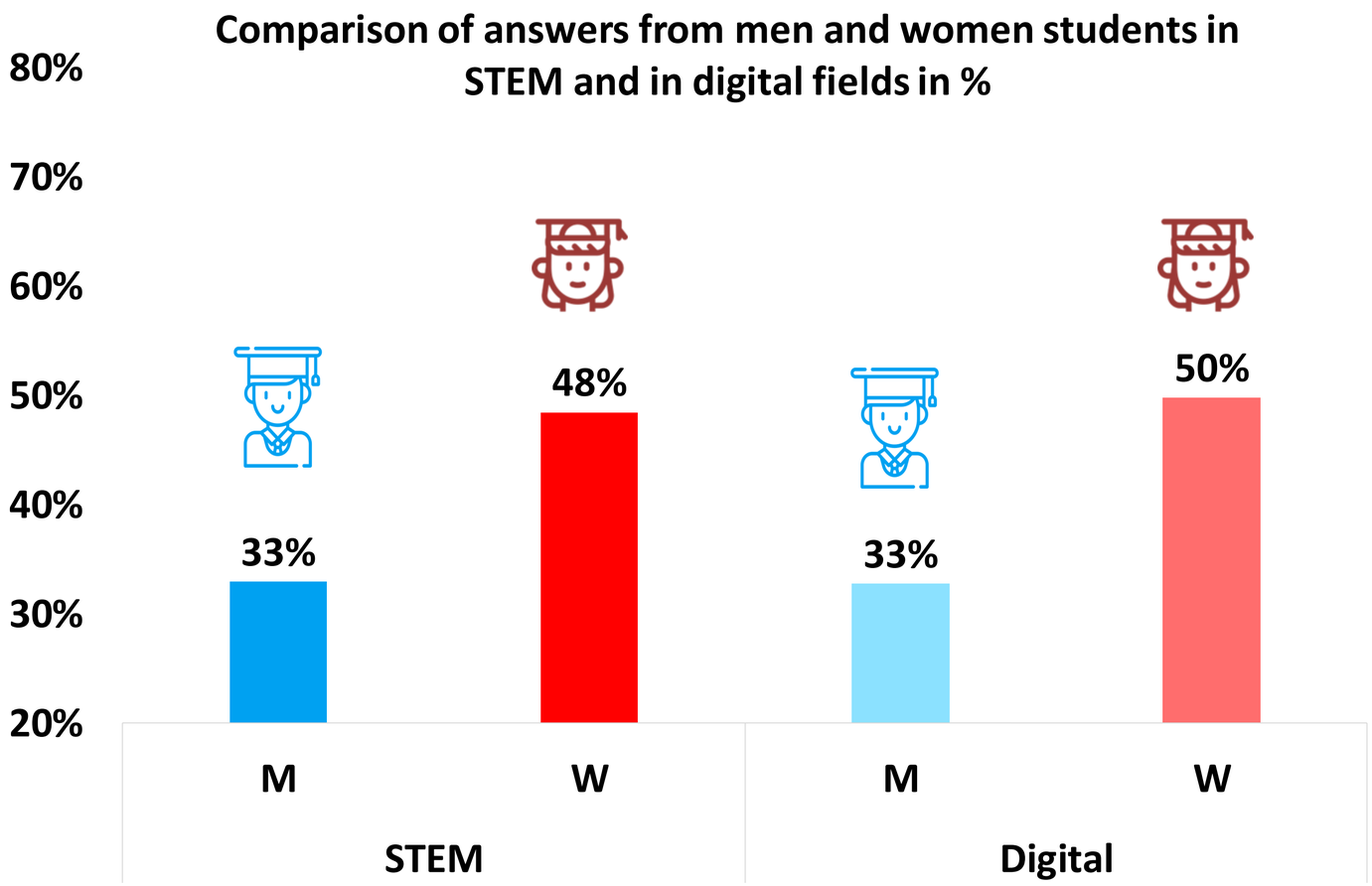
I'm not interested, I don't like ICT Boys: 49% Girls: 61%	"I have no interest in it, I do not like it." Boy, Portugal, 18 years old	"Very little interest, prefer to work with people than with machines." Girl, Canada, 16 years old
I want to pursue another field Boys: 27% Girls: 21%	“I like horses not computers. I am going for something else.” Boy, Ireland, 14 years old	"I want to go into the medical field, so I am not interested in coding and doing that kind of stuff.“ Girl, United States, 15 years old
That does not suit me Boys: 6% Girls: 8%	"I rather a more hands-on job and not an office job." Boy, Ireland, 14 years old	“I wouldn't like to sit in front of a computer all day.“ Girl, Portugal, 18 years old
I don't know enough about these professions Boys: 7% Girls: 8%	"Because I don't know really what that is." Boy, Czech Republic, 15 years old	“I am very little informed about ICT professions and their opportunities.“ Girl, France, 17 years old
It's very difficult, I'm not capable Boys: 4% Girls: 5%	"I've always been very bad at everything related to digital and coding." Boy, France, 14 years old	“Because this work is too hard for me.“ Girl, United States, 17 years old
I'm interested in it but I don't want to make it my job Boys: 1% Girls: 3%	"That's not what I want to do with my life. It's a profession in which you quickly become obsolete." Boy, France, 14 years old	“It is a very useful and interesting area, but I would not like to work in it.“ Girl, Portugal, 18 years old

@GenderScan

What ‘inhibits’ teenagers' interest in STEM

Half of female STEM students have been discouraged from choosing STEM

Have you ever been discouraged from choosing scientific and technical fields?



@GenderScan

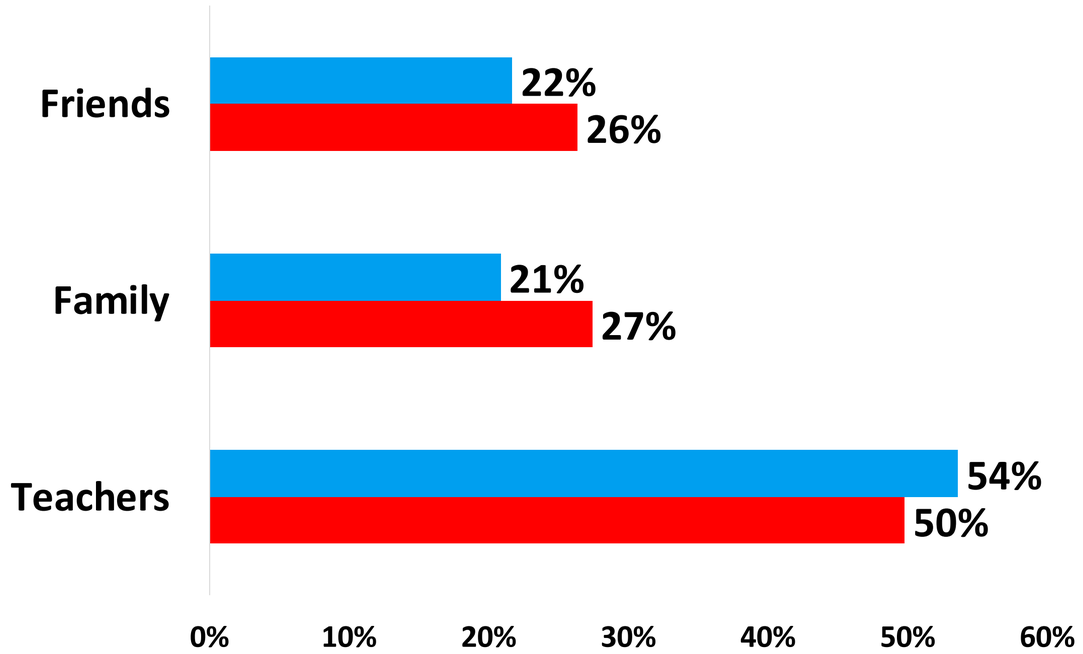
What ‘inhibits’ teenagers' interest in STEM

Friends and family discouraged a higher % of women than men

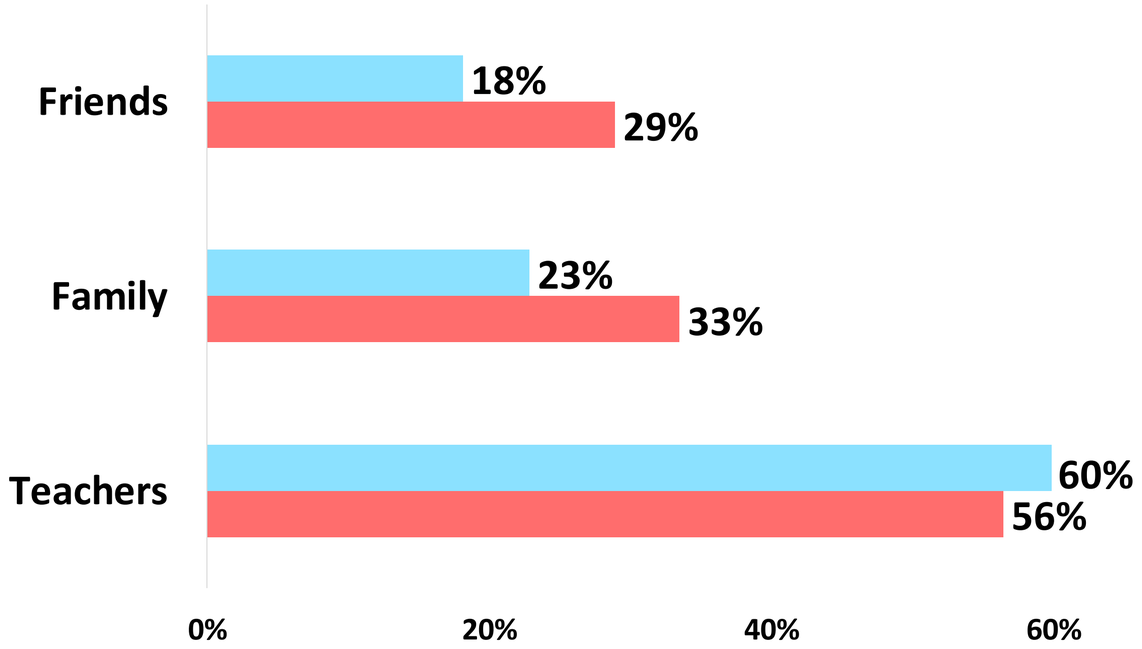
Teachers are the top discouragers for both genders.

Who discouraged you from pursuing scientific and technical fields?

Comparison of answers from female and male STEM students in %



Comparison of answers from male and female ICT students in %



@GenderScan

What ‘inhibits’ teenagers' interest in STEM

“Not a field for women” and “you’re not good enough” top arguments

It is not a field for women

Men in STEM: 0% Women in STEM: 25%

Men in ICT: 0% Women in ICT: 31%

"It is a men’s job. What an idea to choose a field where there are almost no women. Men’s brains are better at it."

Belgium, woman, 26, student in Computer Science

“Many people told me I should have gone to medical school as mechanical engineering is not for women. One of the guidance counsellors told me I didn't look like a future engineering student to her.”

Canada, woman, 23, student in Engineering

You’re not good enough, it’s too difficult for you

Men in STEM: 44% Women in STEM: 34%

Men in ICT: 47% Women in ICT: 27%

“Some family members and friends discouraged me from studying ICT because of the rumor that it is very difficult, only for geniuses, and I had only average grades at school.“

Portugal, man, 29 student in Computer Science

“Some people, especially male high school classmates and teachers, gave me the idea that if I got good grades, it was because I was responsible and put time into it, but I wasn't bright enough to do a pure science degree.”

Netherlands, woman, 23, Student in Physics

The atmosphere will be hostile – sexism, racism, disrespect

Men in STEM: 6% Women in STEM: 17%

Men in ICT: 3% Women in ICT: 13%

"The atmosphere, competition and general lack of mutual aid in the field. Not to mention discrimination against minorities"

France, man, 22 student in Computer Science

“Family members saying it was going to be hard and that the sexism would be difficult to deal with."

Ireland, woman, 24, student in Engineering

This is not useful, it doesn’t pay well, you won’t find a job

Men in STEM: 14% Women in STEM: 5%

Men in ICT: 14% Women in ICT: 10%

"People can’t imagine what the job would be like, so they say there are no jobs. And that the salary is too low for so many years of hard work."

Austria, man, 22 student in Physics

“It is not a real job." "You won’t find a position." There are not many employers or possibility to evolve.“

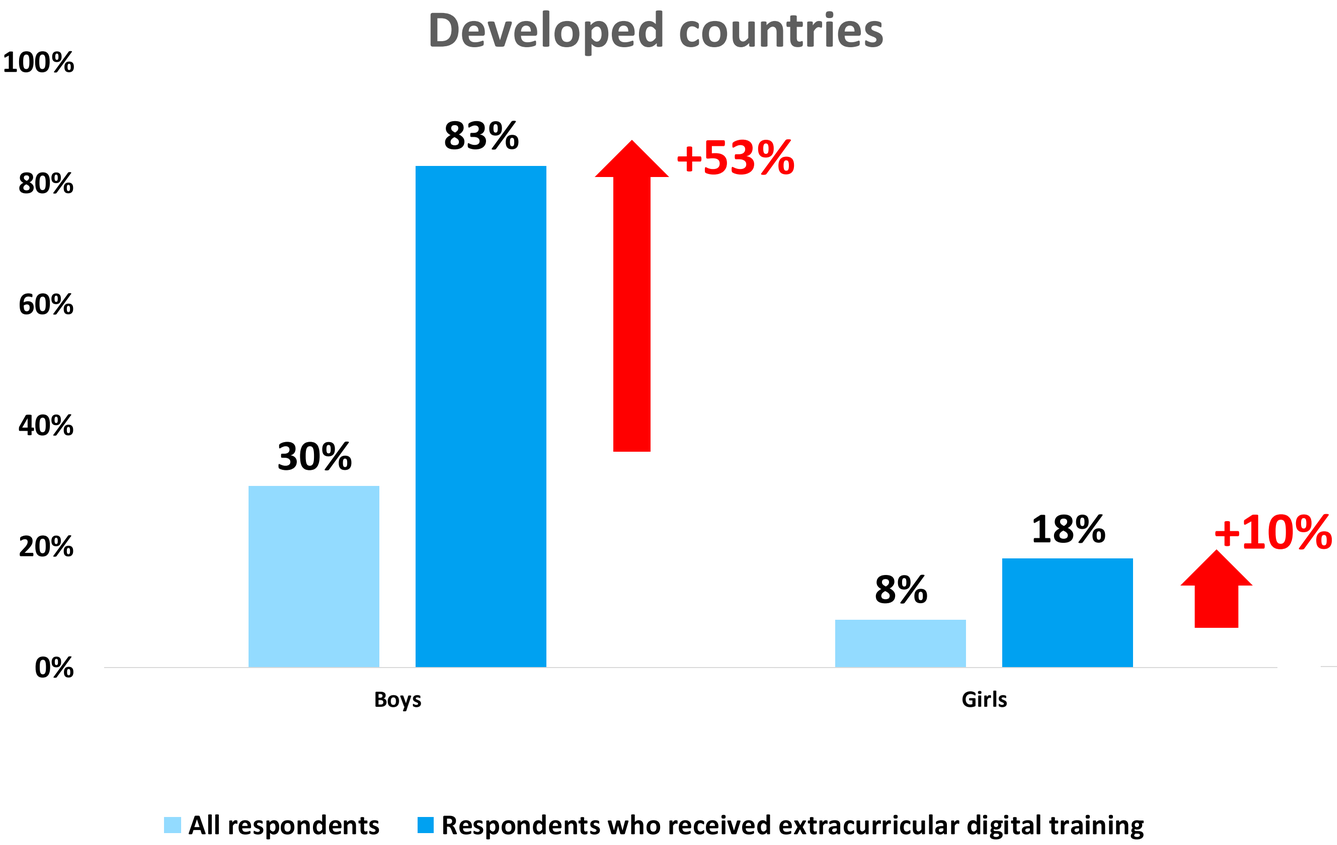
Belgium, woman, 25, student in Computer Science

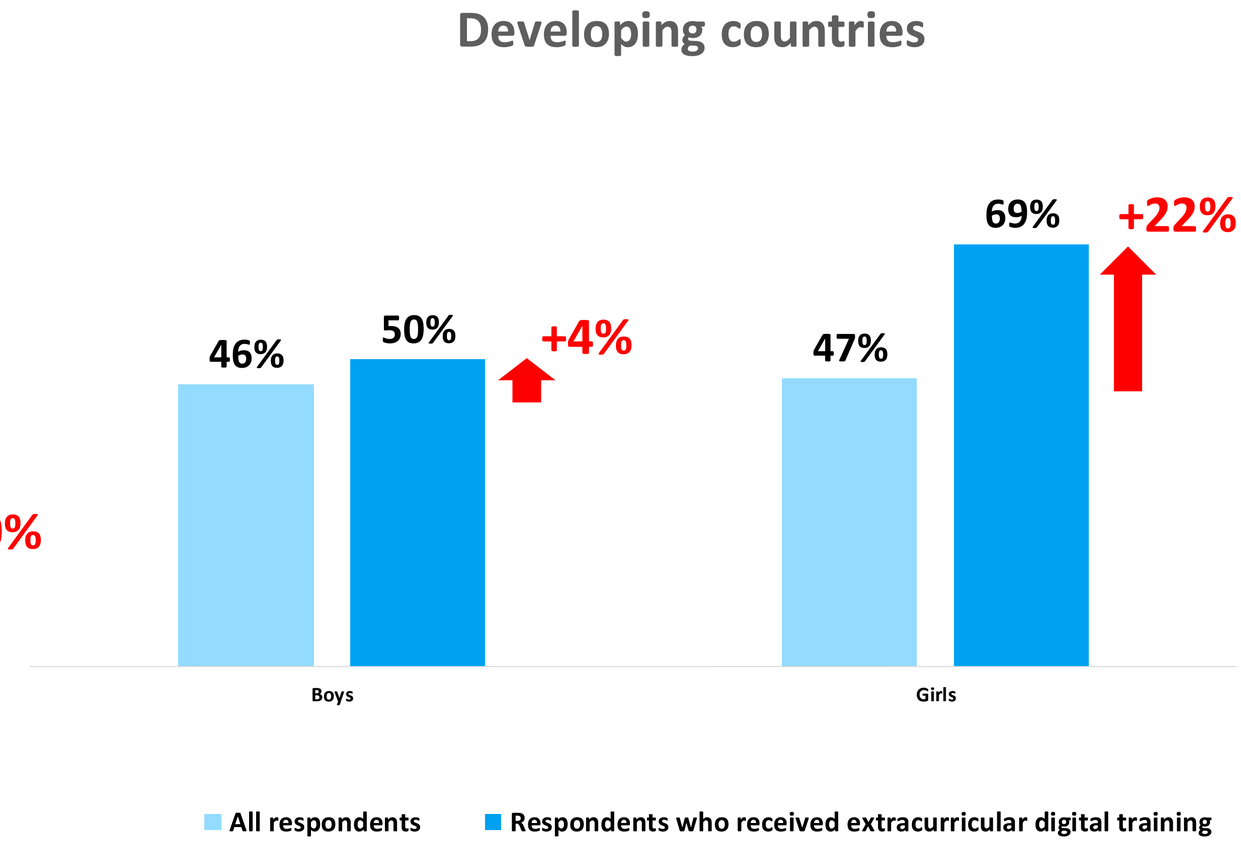
@GenderScan

What triggers the interest of teenagers in ICT?

The importance of summer camps and after-school activities
Esp. in project-based, problem-solving approaches

When you're older, would you like to work in the digital sector?

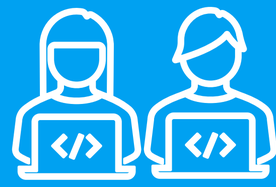




@GenderScan

What triggers teenagers' interest in STEM

“Means to an end”, creativity and employability

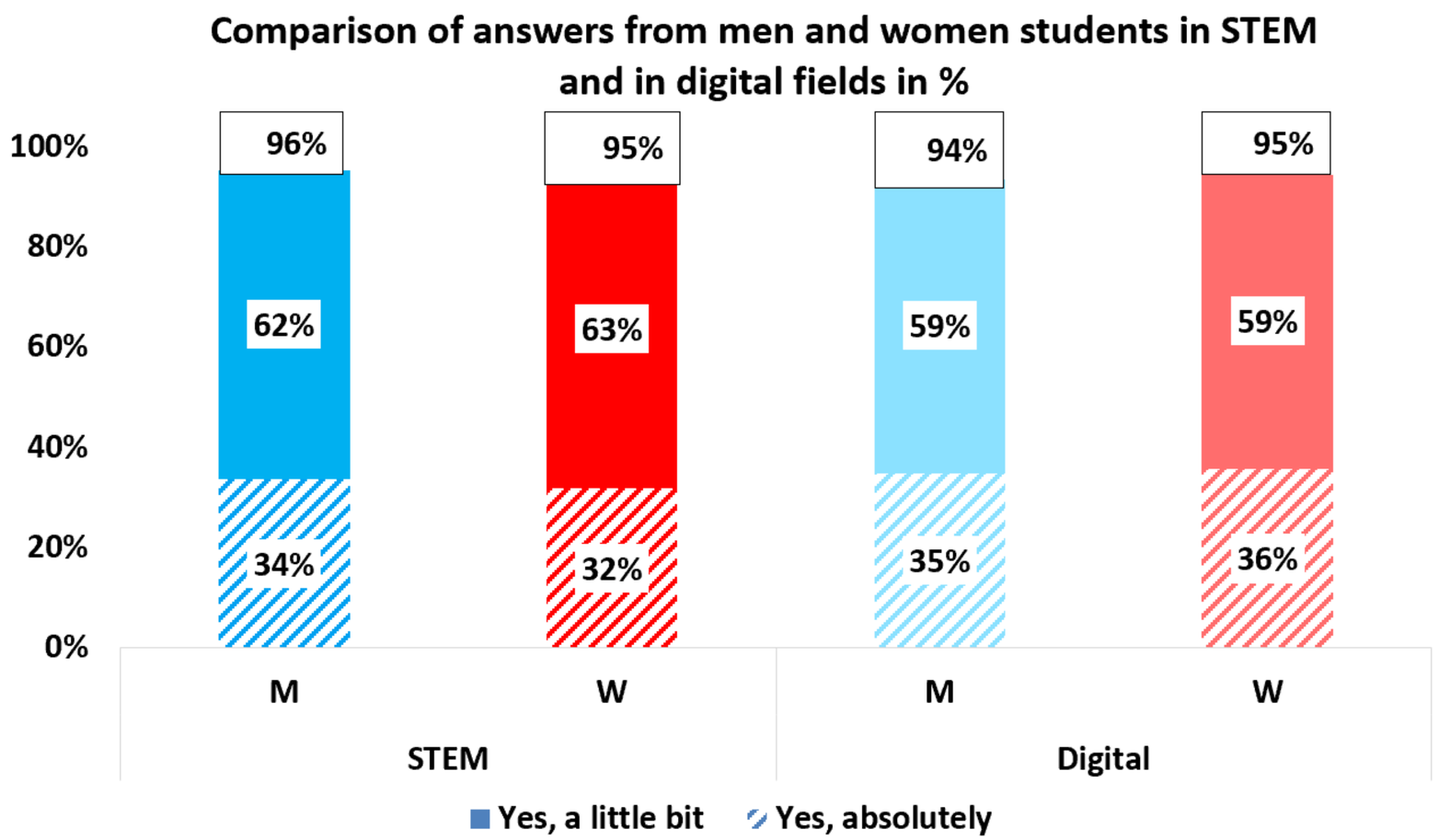


I like the field, it interests me Boys: 65% Girls: 43%	"I like digital and working on digital equipment.“ Boy, France, 13 years old	“I love it since it enables me to transmit ideas and be creative. “ Girl, Portugal, 18 years old
I will need it for my job Boys: 6% Girls: 28%	"I would like to learn how to use technology for work." Boy, Ireland, 15 years old	“My future job requires computer knowledge, and it will serve me in other fields too.“ Girl, France, 12 years old
It is the future, it recruits, it pays Boys: 19% Girls: 23%	"Because it is the future of work, and it pays a lot." Boy, Ireland, 14 years old	“Technology and engineering are the future. There are a lot of jobs too.“ Girl, United States, 17 years old
I grew up in it, my family is in the field Boys: 7% Girls: 2%	"To follow the same path as my father. I love computers." Boy, France, 14 years old	“I was born into technology, it always attracted me.“ Girl, France, 16 years old
Digital technology has a significant and positive social impact Boys: 3% Girls: 4%	"Because I love it and I think that digital has a role to play both for our future and for our equality." Boy, France, 16 years old	“Digital technology makes it possible to create new technologies that have a positive impact on ecology.“ Girl, France, 17 years old

@GenderScan

The satisfaction of women studying STEM at university

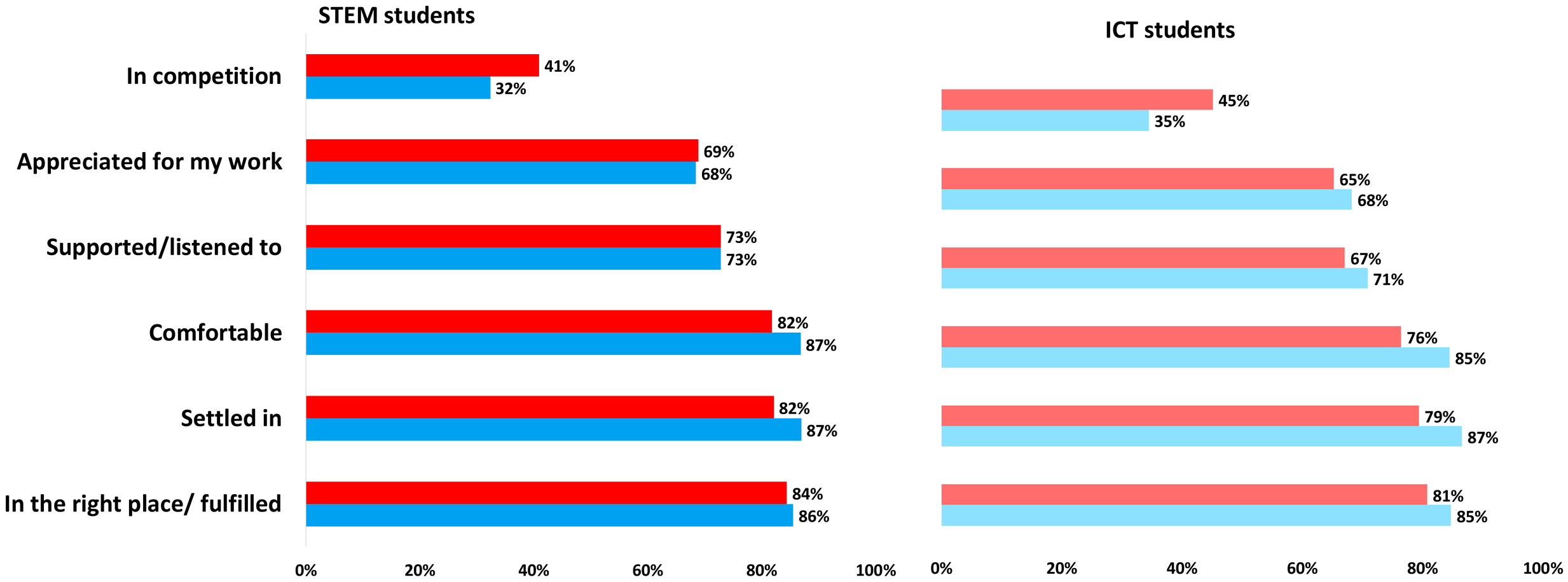
No significant gender differences in STEM and digital studies: around 6 in 10 students are highly satisfied, and 3 out of 10 are satisfied



The satisfaction of women studying STEM at university

Similarly high percentages of women and men feel generally well in their studies

In your training, you generally feel:

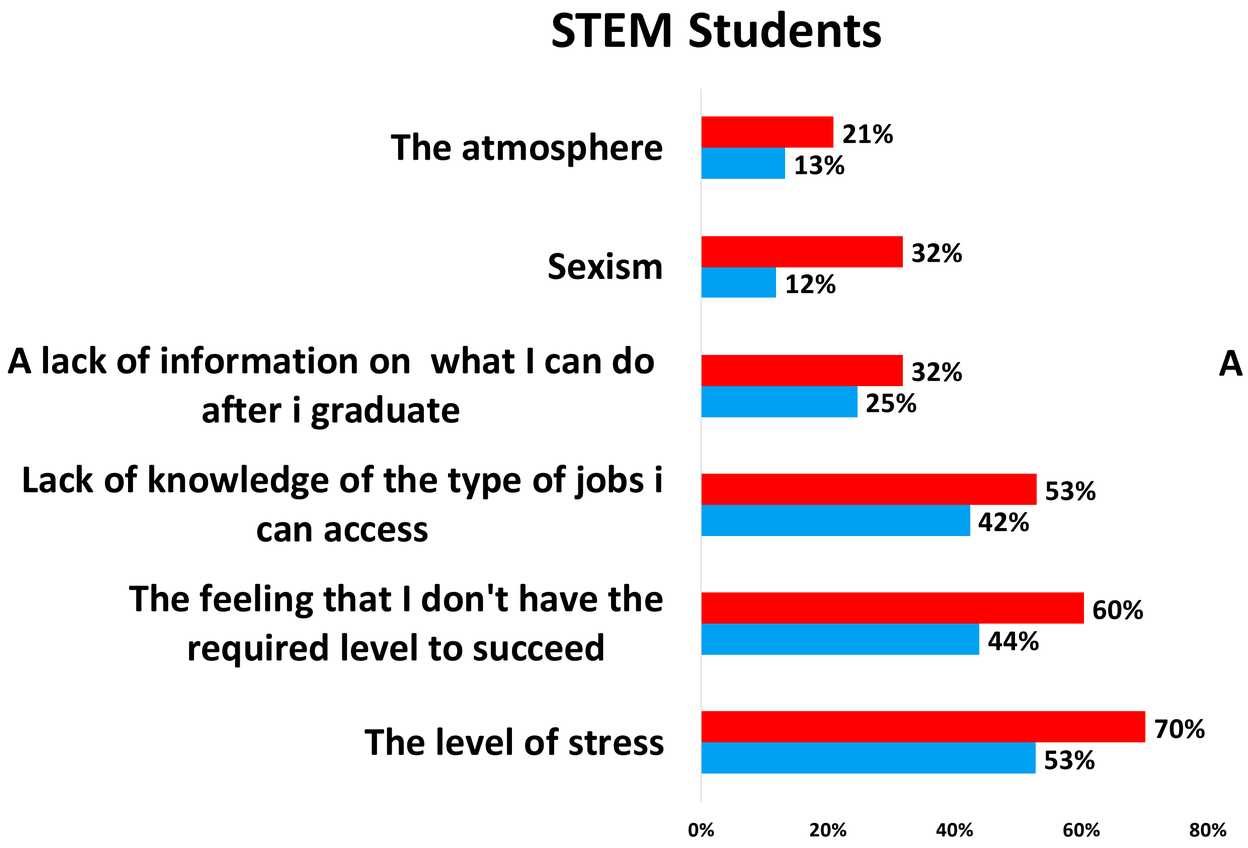


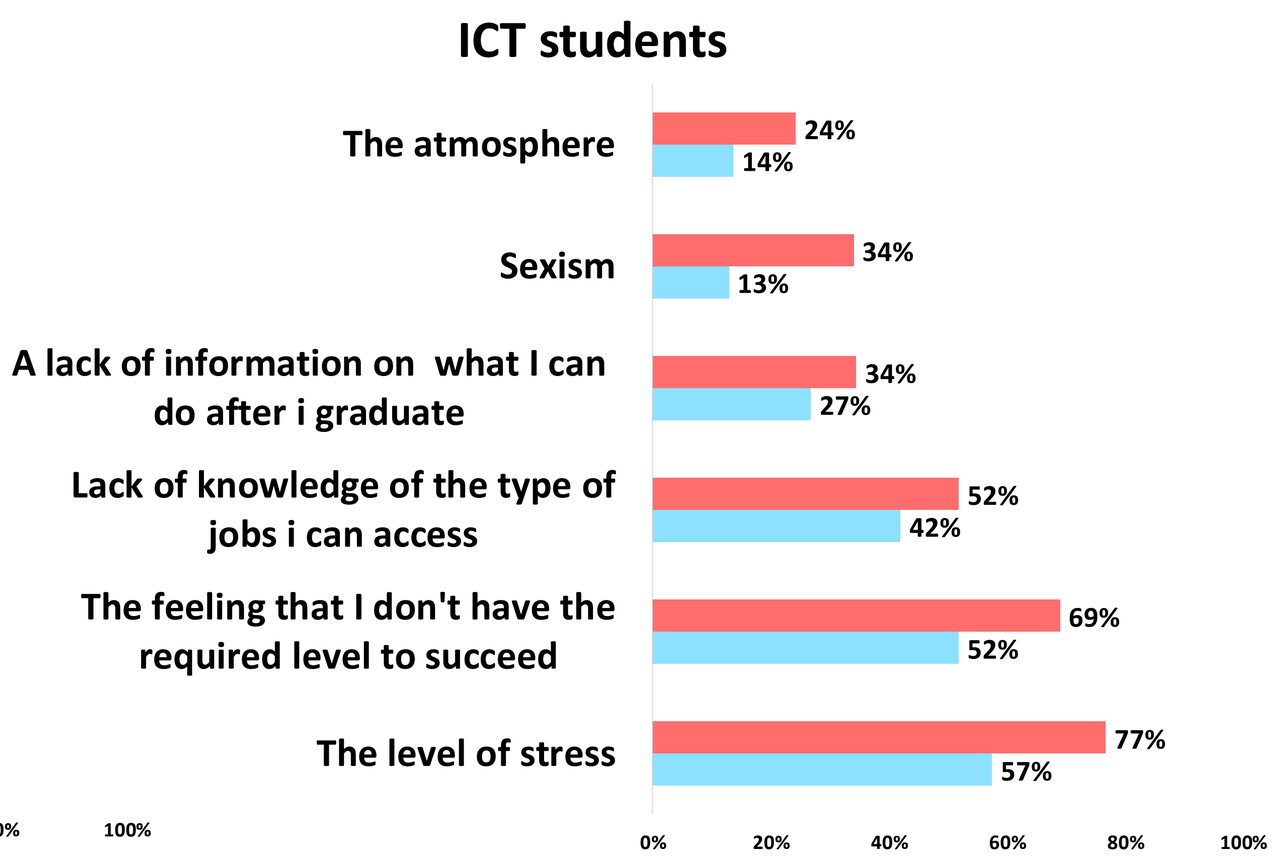
@GenderScan

The challenges of young women studying STEM at university

Lack of confidence in themselves and stress affect more women than men

What are the most important problems you face today in your studies?

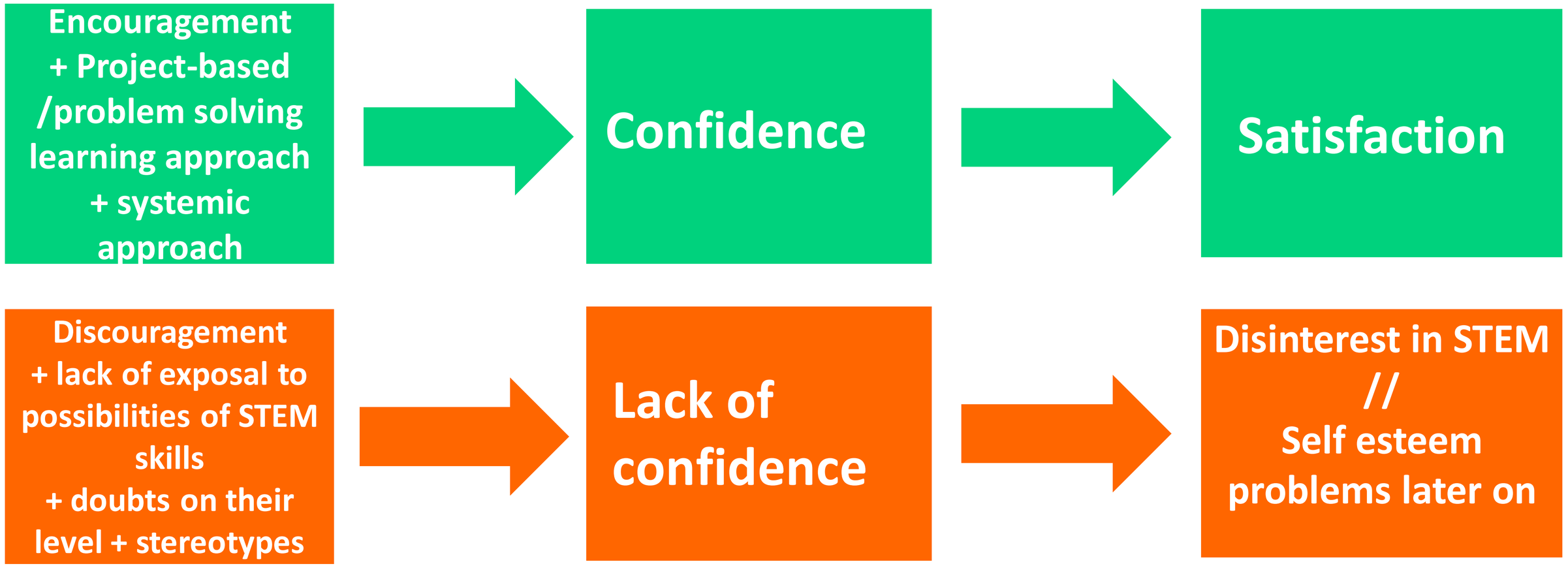




@GenderScan

Conclusion

Confidence is an issue to attract girls into STEM and to keep them in the fields



Q & A

We’ll take questions from the chat and from people using the ‘hand raise’ function.

Join us for our next webinar!

Register here: ngcproject.org/events-announcements

NGCP

Supporting Equitable Approaches to Early Science Education

MARCH 9, 2023
11 AM - 12 PM PT | 2 PM- 3 PM ET

@ngcproject
ngcproject.org

NGCP

20 YEARS OF TRANSFORMING STEM

Learn more at **ngcproject.org**