



# Virtual conference on understanding the causes of gender disparities in STEM-related TVET

Virtual conference report

UNESCO-UNEVOC TVeT Forum, 23-27 November 2020  
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*Organized at the occasion of the launching of the  
UNESCO-UNEVOC report on **Boosting gender equality in science  
and technology. A challenge for TVET programmes and careers***

# AT A GLANCE



STEM skills and knowledge can be required for both 'traditional' and 'emerging' occupations; STEM-related careers are often referred to as the 'jobs of the future', driving innovation, inclusive growth and sustainable development. Moreover, for individuals, these careers offer good job opportunities with increasing labour demand and relatively high wage levels.

Even as STEM subjects and skills are becoming more essential in today's world, gender disparities are prevalent in these fields. In recent years, much has been done to help inspire girls and women to study and work in technical fields. Yet long-standing biases and gender stereotypes are steering girls and women away from STEM-related fields, which means that a large pool of potential skills that could contribute to economic development remains untapped. It can put major constraints on the individual lives of women and contribute to transmitting gender inequalities across generations.

Recognizing the gap in TVET-specific data and literature, UNESCO-UNEVOC conducted a study on [Boosting gender equality in science and technology: A challenge for TVET programmes and careers](#) throughout 2019 and 2020. The virtual conference was organized at the occasion of the launching of this newly completed study report that reviews available evidence of the situation faced by girls and women in STEM-related TVET.

## Summary of key reflections

### **Definitions of STEM-related TVET vary according to national and regional contexts**

The understanding of STEM-related TVET differs slightly between participants, but there is agreement on the current under-representation of girls and women in STEM-related TVET, as well as the importance of striving towards gender equality in these fields.

### **Multiple barriers exist for girls and women in pursuing studies and careers in STEM-related TVET**

The many different barriers girls and women experience throughout their education and careers influence their choice in STEM. TVET institutions in various countries aim to minimize these barriers, by using female role models and mentors, creating gender-friendly internships, improving the quality of career orientation and guidance, and addressing the low image of STEM-related TVET.

### **The 'leaky-pipeline' phenomenon persists between STEM-related TVET and employment**

Girls and women who choose to study in STEM-related TVET often do not transit to a STEM career. This leaky pipeline between education and the labour market needs attention in order to strive towards gender equality in STEM. Initiatives often focus on measures in the labour market (employers' approaches) or on measures that combine interventions of TVET institutes and labour market organizations (mixed approaches).

### **Societal factors strongly affect female participation in STEM education and occupations**

Wider societal and cultural norms influence the individual choices of girls and women in education and it rarely pushes them in the direction of STEM. Often mentioned is the influence of the image of TVET in society; the idea that STEM-related TVET careers are harsh and female unfriendly, which affects the personal choices of girls and women.

### **Government policies play an important role in promoting gender equality in STEM-related TVET**

In many countries, there are various policies in place that (partially) aim to stimulate gender equality in STEM-related TVET and careers. Participants mention the importance of making funds available to properly implement policies and put gender equality in STEM higher on the agenda. The monitoring and evaluation of the impact of government strategies deserves extra attention, allowing for adaptations and improved planning of actions.

## Background

Science, technology, engineering and mathematics (STEM)-related technical and vocational education and training (TVET) has a potentially significant role to play in providing the skills and competencies required to support innovation, productivity and international competitiveness as well as areas of social development including health and education. It is thus an important driver for achieving a range of the United Nations Sustainable Development Goals (SDGs) and contributing to inclusive and sustainable societies. STEM skills and knowledge can be required for both ‘traditional’ and ‘emerging’ occupations and are considered as transversal skills; STEM-related careers are often referred to as the ‘jobs of the future’, driving innovation, inclusive growth and sustainable development. Moreover, for individuals, these careers offer good job opportunities with increasing labour demand and relatively high wage levels.

Even as STEM subjects and skills are becoming more essential in today’s world of work, gender disparities are prevalent in these fields. In recent years, much has been done to help inspire girls and women to study and work in technical fields. Yet long-standing biases and gender stereotypes are steering them away from STEM-related fields, which means that a large pool of potential skills that could contribute to economic development remains untapped. It can put major constraints on the individual lives of women and contribute to transmitting gender inequalities across generations.

UNESCO is giving particular attention to this issue as part of its efforts to promote women and girls’ empowerment through education in line with SDG 4. Recent reports, such as [Cracking the Code: Girls’ and Women’s Education in Science, Technology, Engineering and Mathematics](#) (UNESCO, 2017) and [A Complex Formula: Girls and Women in Science, Technology, Engineering and Mathematics in Asia](#) (UNESCO, 2015) are examples of UNESCO’s commitment. While much of the focus to date has been on the participation of girls and women in

general education and university STEM education, there has been relatively little documentation on the participation of girls and women in STEM-related TVET, despite the significance of this sector.

Recognizing this gap in TVET-specific data and literature, UNESCO-UNEVOC conducted a study on [‘Boosting gender equality in science and technology. A challenge for TVET programmes and careers’](#) from 2019–2020. In collaboration with members of UNESCO’s global network of TVET institutions, the UNEVOC Network, ten case countries are highlighted in the study.<sup>1</sup> This virtual conference was organized at the occasion of the launching of the newly complete study report that reviews available evidence of the situation faced by girls and women in STEM-related TVET.

Against this background, the virtual conference aimed to:

- Share findings from the UNESCO-UNEVOC study on ‘Boosting gender equality in science and technology. A challenge for TVET programmes and careers’
- Explore the individual, parental/peer, school-level and societal influences on girls’ and women’s enrolment, learning achievement and progression to STEM-related occupations
- Collect insights from TVET stakeholders and policymakers on the barriers for girls and women within STEM-related TVET and the change-maker role that TVET institutions and teachers can play
- Identify areas of successful practice in increasing the participation and performance of girls and women in STEM-related TVET, and initiatives to improve the participation of women in STEM-related occupations

We express our appreciation to the TVeT Forum participants for the valuable information and personal experiences they shared with us. In this synthesis report, we aim to capture the common thread through the various discussions and provide a summary of the information, experiences, ideas and practices introduced by the participants.

<sup>1</sup> Australia, Chile, Costa Rica, Germany, Ghana, Jamaica, Lebanon, the Netherlands, The Philippines, South Africa

## Overview

The following topics were opened for discussion during the virtual conference:

### Thread 1: Current state of gender equality in STEM-related TVET

Taking the significant role of STEM into account as 'jobs of the future', it is essential to promote gender equality in these fields. However, in all countries that were analysed in the UNESCO-UNEVOC report, an under-representation of girls and women in STEM-related TVET can be witnessed with only a very modest increase in participation rates over the last few years. This overall conclusion can be drawn, despite the difficulty in comparing country-level data related to the differences in STEM and TVET definitions. In Germany, for example, only pure technology-related STEM subjects are considered as STEM areas, whereas in Lebanon also health- and commercial-related subjects are added to STEM. On the other hand, an important trend is the increasing participation of women and girls in TVET programmes that are not considered as pure STEM fields such as the Natural, Health and Physical Sciences.

Participants were asked the following questions:

- How is STEM-related TVET defined or understood in your country?
- Why is it important to promote the participation of girls and women in STEM-related TVET?
- What are the current trends in girls' and women's participation in STEM-related TVET?

### Thread 2: TVET institutional-level factors affecting gender equality in STEM-related TVET

At the TVET institutional level, factors that regularly influence girls' participation and achievement include teaching quality addressing specific needs, the presence of female teachers acting as role models, teachers' perceptions, the nature of curricula and learning materials, and the nature of assessment practices and their strong effect on the perceptions about ability. The country case study of the Netherlands, for example, shows that teachers and career advisors have the tendency to advise

boys to choose STEM careers more often than girls. (Educational) career advice provided to girls and women by educational staff – such as teachers and career advisers- has a strong influence on the choices of girls and women. In the case of STEM subjects, this influence is negative in the sense that advice for girls and women does not often include STEM subjects or goes even against the choice for STEM.

Participants were asked the following questions:

- What do you see as barriers girls and women experience in participating and performing in STEM-related TVET?
- What kind of policies, practices or initiatives does your institute have in place to stimulate participation and/or performance of girls and women in STEM-related TVET?
- Does your institution structurally monitor the participation rates of girls and women in STEM-related programmes at your TVET institution? If so, how is the monitoring data used?

### Thread 3: Women in STEM-related labour market sectors – the leaky-pipeline phenomenon

Evidence shows that, in addition to low STEM participation rates of female students, there is a 'leaky pipeline' between STEM-related TVET and STEM-related occupations. For example, from the Australian STEM graduates in TVET, 40% of male graduates remain in a STEM career, while for female graduates, only 20% remain in a STEM career at age 25. The latest data for 2020 shows that only 8% of the TVET-level STEM-qualified Australian labour force is female.<sup>2</sup> There is the widely held belief that girls and women are unsuitable for some STEM-related occupations, especially those linked to TVET programmes because of the physical demands involved. It is not clear, however, whether girls and women really do struggle to cope with the physical demands of some STEM-related occupations or whether this is an example of a gender stereotype that is used to prevent them from entering male-dominated professions. In general, focusing on gender equality in STEM-related TVET should go hand in hand with striving for equal opportunities in accessing the STEM-related labour market.

<sup>2</sup> Australian Government. 2020. Australia's STEM Workforce report. Access via: [https://www.chiefscientist.gov.au/sites/default/files/2020-07/stem\\_workforce\\_report\\_2020\\_-\\_vet\\_infographic.pdf](https://www.chiefscientist.gov.au/sites/default/files/2020-07/stem_workforce_report_2020_-_vet_infographic.pdf)

Participants were asked the following questions:

- What are examples of successful policies or practices in the world of work to attract and retain female employees?
- How could labour market organizations work together with TVET institutes to promote the transfer of girls and women to STEM-related jobs?
- Do you see evidence of a 'leaky pipeline' between female participation in TVET and their transfer to the labour market in your own environment? If so, which stakeholders need to work together to diminish this 'leaky pipeline'?

#### Thread 4: Societal and personal factors (including families and peers) affecting gender equality in STEM-related TVET

Societal factors have a strong influence on female participation in STEM education programmes and occupations. A few societal-level factors that are flagged repeatedly in the country case studies of the UNESCO-UNEVOC study are the relationship between gender equality and wider societal and cultural norms, the effects of mass and social media, and the presence of policies and legislation.

Even though research shows that biological differences on the brain-level between boys and girls have no effect on ability or performance in STEM subjects, psychological factors do affect the behaviour of the individual learner. These factors are likely to reinforce gendered identities and have an effect on the interest and abilities in STEM subjects. This seems to be more evident in TVET, where in technology-related programmes there are fewer female role models than in other types of education. In addition, there is a general idea that the working conditions in STEM-related TVET careers are harsher and more female unfriendly. Added to this, the lack of gender sensitive information about the value of STEM and the opportunities that it presents, as well as the general negative attitude towards TVET occupations, seem to drive them towards gender stereotypical specialties.

Participants were asked the following questions:

- What are societal and/or personal factors that can pose barriers for girls and women in your country to pursue a STEM-related TVET study or STEM career?

- How could TVET stakeholders (teachers, career guides, mentors) deal with societal and/or personal barriers and support young women to participate in STEM-related TVET?
- What other stakeholders are needed to support young women in dealing with societal and/or personal barriers, so they are able to participate in STEM-related education and transfer to STEM-related jobs?

#### Thread 5: Government strategies for promoting gender equality in STEM-related TVET

Worldwide, many countries have developed national policies promoting education and training in STEM-related fields. Some specifically address female participation, but very few pay attention to the TVET sector and careers. The few specific STEM-related TVET policies that focus on coping with gender challenges can be categorized into two main types, namely: (i) strategies aimed specifically at the education and training sector to address gender disparities in STEM subjects; and (ii) strategies aimed at redressing gender disparities in STEM-related occupations that have implications for the education and training system. A challenge in most cases is the level of implementation of the strategies as well as the evaluation of their impact. In addition, in several middle- and low-income countries these strategies are donor driven and lack contextualization and ownership.

Participants were asked the following questions:

- What strategies and structures have been implemented at the national level to successfully promote gender equality in STEM-related TVET?
- How can the 'learnings' or 'best practices' be communicated among all relevant stakeholders?
- Is data on the participation and performance of girls and women in STEM-related TVET and their transition to the labour market collected in your country/context? Is data collection linked to a policy with specific gender participation in STEM related TVET indicators?

## Key reflections

### Definitions of STEM-related TVET vary according to national and regional contexts

Taking into account the significant role of STEM as 'jobs of the future', it is essential to promote gender equality in these fields. However, girls and women are often underrepresented in STEM-related TVET. This overall conclusion can be drawn, despite the difficulty in comparing country-level data related to the differences in STEM and TVET definitions. Participants of the virtual conference represented various countries from different continents and recognized the difficulty of making an international comparison in this field, due to the lack of standard and internationally available definitions for STEM and TVET. By the definitions offered by the participants, we could see that the understanding of STEM-related TVET differs slightly, but there is a general tendency by participants to understand and refer to STEM in terms of 'technology', 'industrial', 'manufacturing sector', 'hard' and 'technical' programmes. In some countries, the concept is still new or other terms are more common. Even though STEM-related TVET can

**On average, female enrolment in STEM-related TVET varies between 15% and 30%.**

be understood in slightly different ways, there is a general agreement that there is a growing interest in STEM in TVET.

Despite the lack of comparable data, participants of the virtual conference acknowledged a strong under-representation of girls and women in STEM-related TVET also within their respective countries. At the same time, issues of gender disparities in these fields are often not well documented and analysed. On average, female enrolment in STEM-related TVET varies between 15% and 30%. Participants agreed on the importance of striving towards more gender equality in these fields. Reasons mentioned for enhancing female participation in STEM fields were the pursuit of equal rights and opportunities, the high social

status and wage levels connected to STEM careers, increasing and steady growth of job openings, and the increasing variety of jobs in the STEM sector.

### Multiple barriers exist for girls and women when it comes to pursuing studies and careers in STEM-related TVET

Within TVET institutes, girls and women can experience multiple barriers that influence their choice to pursue STEM studies. One example is gender stereotyping in STEM fields. Many TVET institutes aim to minimize the barriers faced by girls and women in this regard. They strive towards more equal representation of men and women in the STEM-related studies they offer at their TVET institute. Participants of the virtual conference shared the main barriers girls and women experience in their country, and the policies, practices and initiatives that exist at the level of TVET institutes.

### Female role models are key

Even though the discussion among participants makes it clear that there is no universally approved methodology to stimulate the participation of girls and women in STEM-related TVET, some initiatives are widespread and deployed in different contexts and countries. The use of female role models, aiming to show that girls and women can also thrive in STEM careers, is the initiative that is mentioned most often. Role models can break with the existing stereotypes that steer girls and women away from choosing STEM-related studies, as it provides individuals and society with a different image of the professionals behind a STEM profession.



Female carpentry workshop

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The virtual conference participants presented various role model methods:

- Making use of female guest speakers at the TVET institution
- Making sure educational material (such as videos, books) are inclusive and show images of female STEM professionals in their job environment
- Linking female students to female buddies in STEM programmes (teachers or older students)
- Developing mentoring schemes in which (prospective) female STEM students are linked to female STEM professionals

One important link that is often mentioned by participants is the connection between TVET institutes and employers in the STEM sector. In these connections, awareness of gender barriers needs to have a place. A more diversified STEM labour market will automatically lead to more female role models, thereby countering stereotypes and attracting more female students to STEM-related TVET programmes. In practice, this means employers in the STEM sector need to be conscious of the importance of targeted internships for girls and inclusive hiring processes and gender equality in the workplace. There is a role for TVET institutes to cooperate with employers in order to achieve this goal and to make it easier for girls and women to progress from a STEM education to the labour market.

### **Career orientation and guidance are of major importance**

Career guidance can be organized within TVET institutes or career centres. Through quality career guidance, inclusive, attractive and diversified information needs to be distributed among students, preferably from an early age. In Australia, a dedicated [National Careers Institute](#) has even been established to support students 'early on and all the way' in their career choices. The initiative showed that teachers were truly crying out for decent career resources and dedicated time in timetables for career advice. It is important that teachers and career orientation and guidance

professionals are aware of existing gender stereotypes and disparities in STEM and are sensitive in dealing with existing issues.

*A participant from Costa Rica mentioned that "awareness raising should move beyond teachers and professionals and equally address male STEM students that dominate the STEM-related classes in TVET programmes. The development of fairer and more supportive relationships among STEM students will result in a safer, more welcoming environment for girls and women."*

The role that career guidance can take up in striving towards gender equality cannot exist on its own and should go hand-in-hand with awareness raising in the labour market.

*A participant from Madagascar described that "some employers practice hiring discrimination, which is tolerated in our country despite existing laws. This fact is influencing career counsellors to advise girls against choosing STEM".*

Career guidance should also aim to protect girls and women against such unfair procedures. Focusing on career guidance as a stand-alone method for gender equality in STEM is therefore insufficient and counterproductive. Addressing the low image of STEM-related TVET

### **Addressing the low image of STEM-related TVET**

Various participants from different countries indicated that TVET, and STEM-related TVET in particular, is currently affected by a low image as well as the negative perception of being 'harsh', 'dirty', or 'female unfriendly' environments. The idea that physical strength is a prerequisite in TVET labour-intensive environments is still prevalent.

*One participant from Nigeria explained that low participation in TVET in his country arises from the fact that "society refers to STEM/TVET programmes as male-dominated requiring one to be very strong in order to handle tools, operate heavy machines, as well as involving extensive, tedious, and difficult tasks".*



Skills in Liberia

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For women in Nigeria, it 'does not look good' to engage in menial jobs. He then added that this mindset spreads among girls and discourages them from enrolling in TVET programmes, even though attitudes have drastically changed in modern times. Gender equality can only be reached if the social image of TVET is linked to a high level of professionalism and to the status of being an important contributor to socio-economic development, instead of the current link with low skills and dirty jobs.

In order for TVET institutions to attract more female students to their STEM programmes, common efforts are required to change the image that society has about STEM-related TVET. In the Philippines, [TESDA Women's Centre \(TWC\)](#) was established to encourage the participation of women in STEM-related fields in TVET through quality empowerment training programmes related to STEM and non-traditional trade programmes.

### The 'leaky-pipeline' phenomenon persists between STEM-related TVET and STEM-related occupations

Participants noticed that the leaky pipeline in the transition from education to jobs can be reduced if curricula are brought in line with fast changing skills needs in the STEM sector. Next to this, information about career opportunities in STEM should be made gender-sensitive and

tailored specifically to female students. It needs to provide female students with a variety of realistic job opportunities. A gender biased 'pre-selection' of options should not be a possibility in career information at the TVET institutional level.

### Employers' approaches

Contributions to the virtual conference described various labour market measures that aim to promote participation of women in STEM careers. Topics generally covered in such strategy range from improved working conditions, flexible working hours, childcare facilities, and safe transport. Especially in male-dominated sectors, these conditions should properly be implemented and monitored. Gender-balanced recruitment commissions can help employers to organize inclusive hiring processes.

In order to get employers 'on board' for gender equality in STEM, forum participants mention that employers in STEM sectors should first and foremost be made aware of the importance of a more diversified STEM labour market.

### Mixed approaches

Participants also mentioned approaches that combine TVET institutes and labour market organizations. It is important to submerge female STEM students in the practical job and workforce context during their studies, and not wait until they finish or are about to finish their studies.

The following examples were shared of how to connect TVET and employers in a communal strive for gender equality:

- Internship and apprenticeship programmes
- Industry visits for female students or job seekers
- Mentoring and role modelling programmes
- Girls days in STEM sectors
- Professional women fora

Identifying and removing barriers both at the TVET institutional level as well as in job sectors is important but not enough. Identifying and strengthening 'enablers' can also bring about change. Clear messages and genuine efforts from the STEM-related labour market to attract and retain skilled female employees can serve as

enablers. More research into these kinds of enablers could improve the quality of initiatives and practices for gender equality.

### Societal factors have a strong influence on female participation in STEM education programmes and occupations

A few societal-level factors that are flagged repeatedly in the country case studies of the UNESCO-UNEVOC study report are the relationship between gender equality and wider societal and cultural norms, the effects of mass and social media, and the presence of policies and legislation. Even though research shows that biological differences on the brain-level between boys and girls have no effect on ability or performance in STEM subjects, psychological factors do affect the behaviour of the individual learner. These factors are likely to reinforce gendered identities and have an effect on the differences between girls and boys in their interest and abilities in STEM subjects.

This seems to be more evident in TVET, where in technology-related programmes there are fewer female role models than in other types of education. In addition, there is a general and traditional idea that the working conditions in STEM-related TVET careers are harsher and more female unfriendly, influencing the interest of girls in pursuing STEM-related TVET. Added to this, the lack of gender-sensitive information about the value of STEM and the opportunities that it presents, as well as the general negative attitude towards TVET occupations, seem to impact the choices of students and drive them towards gender stereotypical specialties.

#### The image of TVET in society

As explained earlier, participants in the virtual conference acknowledged the existing societal views on TVET and especially STEM-related TVET as being tougher environments. Participants mentioned the media as one of the main channels through which this image is spread and reinforced. The media but also advertisements and vacancies, tend to frame STEM professions as male-dominated and thereby contribute to gender stereotypes. Therefore, a different framing of STEM professions needs to happen from an early age and the media should play a role in this regard.

*One participant shared initiatives related to media coverage in Kyrgyzstan, where videos were developed and broadcast about different occupations and possible wages so that young people could see the benefits. Also, a video with the purpose of overcoming cultural barriers was developed and broadcast about a girl in a “male” occupation, showing the wage benefit for the family.*

#### Personal factors

Participants mentioned several initiatives that affect personal-level barriers:

TVET institutes and employers should provide a safe space for girls and women, combatting stereotypes, bullying, harassment and expectations they encounter in wider society and family life. TVET institutes need to consciously provide an open-minded, enabling and safe learning environment in which women can thrive.

- More robust orientation days, specifically for female students, can assist them in feeling less anxious and ‘foreign’ to new fields (in this case STEM fields)
- Job advertisements for STEM careers tend to show male-preference or are written in an unattractive way for women and showcase images of men only. Women can feel personally less drawn to STEM if they do not recognize themselves in job advertisements.
- TVET institutes and employers should provide a safe space for girls and women, combatting stereotypes, bullying, harassment and expectations they encounter in wider society and family life. TVET institutes need to consciously provide an open-minded, enabling and safe learning environment in which women can thrive.

Overall, a holistic approach is needed to ensure gender equality in STEM, which means that TVET institutes, labour market organizations, governments, teachers, parents, students, activists and media all have a role to play in overcoming barriers and societal pressure that girls and women experience in STEM-related TVET or STEM careers.

## Government strategies and policies have an important role to play in promoting gender equality in STEM-related TVET

In many countries, there are various policies or initiatives in place to stimulate gender equality in STEM-related TVET and careers. The aim of such policies and initiatives is to increase female enrolment, making STEM-related TVET and its respective careers more attractive to girls and women and ensuring that barriers can be overcome. Most policies specifically address female participation, but very few pay attention to the TVET sector and its respective careers. The few STEM-related TVET policies that do focus on coping with gender challenges can be categorized into two main types, namely: (i) strategies aimed at the education and training sector to address gender disparities in STEM subjects; and (ii) strategies aimed at redressing gender disparities in STEM-related occupations that have implications for the education and training system. A challenge in most cases is the level of implementation of the strategies as well as the monitoring and evaluation of their impact.

### Making funds available puts the topic higher on the agenda

Participants of the virtual conference mentioned that policies to promote education and training in STEM-related fields are often in place. However, what is often lacking is a focus on female participation at TVET levels. Policies that do focus on gender equality often propose measures such as the dissemination of success stories, open school days, mentoring, industry visits and addressing and engaging parents in career orientation. Such practices require adequate funding for sustainable results. Rotation of governments with different interests can jeopardize sustainable funding. Costa Rica and Morocco are countries that have made the commitment at the national level to implement gender-based budgeting, demanding all state agents to make a report on the progress in public policies that have an effect on the fulfilment of SDG 5 (gender equality). This indirectly obliges responsible authorities to implement gender equality policies and actions to report on the allocation of resources for the promotion of gender equality.

*One participant from Nigeria suggested that government intervention is necessary in order to provide adequate facilities for training and funds for start-up after graduation. A more secure future for girls and women can influence their attraction to STEM-related TVET.*

### Efforts need to be monitored, evaluated, and shared

The monitoring and evaluation of the impact of government strategies to promote gender equality in STEM-related TVET and careers deserves extra attention. Policies need to be evidence-based and address real constraints and challenges at the different regional, national and root-cause levels. Only by monitoring policies and checking for longer-term effects on equal access, best practices and enablers, can these be formulated and shared. Therefore, data gathering becomes the basis of monitoring and evaluation.

*A participant from Kyrgyzstan rightfully stated that even though tracer studies at institutional level bring forth TVET data that is gender segregated, the question remains whether this data is truly used in practice and for policy-making purposes.*

The virtual conference participants frequently expressed the need for sharing policies that show significant impact. It was deemed essential that policies promoting gender equality in STEM and industry are multi-disciplinary, address barriers at different levels and involve various stakeholders. One example of a national strategy in which multiple stakeholders are involved comes from Bangladesh. The national strategy for the promotion of gender equality in TVET transfers the recommendations of the National Skills Development Policy into a realistic framework of clear priorities and targets. It was developed in 2012 by a working group, in which representatives from government departments, employers, workers and civil society organizations took part. This strategy specifically addresses the transformation of mindsets and attitudes to eliminate negative perceptions of women in training and employment towards “non-traditional skills”. Another strategic objective is the establishment of adequate data management systems to capture sex disaggregated data on TVET.

## Shared resources and learning materials

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## Videos filmed for the virtual conference

### Thread 2:

- Sanji Fraser, Student at the University of Technology, Jamaica and a high school teacher of technical drawing <https://youtu.be/LEeoiFld5U0>

### Thread 3:

- Interview with Caroline Bekkering, Manager, Labour Conditions and Development, Bovag (Dutch employers' organization for the mobility sector) <https://youtu.be/ihqt7DI1Ayc>
- Interview with Marieke van der Post, Policy Advisor Education, Bouwend Nederland (Dutch employers' organization for the construction and infrastructure sector) <https://youtu.be/CmRVhD5orJQ>

### Thread 4:

- Vanessa Sáez, Teacher at the School of Informatics and Telecommunications, Duoc UC, Chile [https://youtu.be/AeBPS\\_ojwWA](https://youtu.be/AeBPS_ojwWA)



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## About the moderators

**Epke Vogel** is a Dutch TVET expert with over 25 years of experience in international socio-economic cooperation. She holds a Master's degree in European Studies at the University of Amsterdam and has worked for various national and international institutions that play a role in strengthening TVET systems, such as a Dutch sector skills institute and the European Training Foundation. As Senior Consultant for CINOP, Ms Vogel manages various international projects aiming to support training institutions and national authorities in improving the relevance and quality of education and training.

**Carmen Kurvers** is a TVET consultant, working worldwide on strengthening inclusive and quality vocational education and training. She has an academic background in Cultural Anthropology and Development Sociology and obtained an Advanced Master's degree in International Development at the Radboud University. Working as a consultant at CINOP, Carmen coordinates various projects that aim to connect vocational education to labour market needs as to increase the (self-) employment opportunities for more and more youth, with a focus on equal opportunities for girls and women.