

2021 HLPF Thematic Review Expert Group Meetings Submission from World Federation of Engineering Organisations Co-Chair Major Group of Stakeholder: Science and Technology

The role of science, technology and engineering to progress the UN SDGs for decent work (Goal 8), reduced poverty (Goal 1) reduced inequalities (Goal 10) and greater diversity and inclusion (Goal 5)

2020 has created greater inequalities in incomes and employment arising from lock downs and closures in some sectors, especially services, retail and tourism. In developing countries, informal markets were closed and thousands of workers lost their jobs as domestic workers and informal traders.

Education was also adversely impacted with the closure of schools and universities. Those worst affected were women, the rural poor especially in less developed countries, the LGBTIQ+ community, indigenous communities and informal workers. Students with disabilities and without computers and access to the internet were the most affected.

Workers who retained their jobs typically had a minimum level of digital skills and were able to access their employment via the internet. The pandemic accelerated the trends for remote and flexible working and virtual education.

The future of work will increasingly be digital. It is important the future of work is sustainable and inclusive and that governments invest to close the skills gap, especially the digital skills gap.

Before COVID-19, automation and new technologies were transforming economies and there was an urgent need to upskill and reskill the workforce, especially with Science Technology Engineering and Mathematics (STEM) and digital and technology skills.

The need for these skills is increasingly important as they are highly sought after around the world as countries pivot towards automation and new technologies in the post-COVID world of work. The high demand for workers with engineering, technology and digital skills has resulted in employers overlooking the usual biases against women, people of colour, LGBTIQ+ and those with physical disabilities. They have created flexible working environments, permitting working from home and additional training in the competition for people with these skills. **Diversity and inclusion** policies are now central to attracting and retaining workers with the skills that are in high demand.

For governments it is important their economies have a workforce with the necessary skills, to reduce unemployment and **reduce inequalities and promote economic growth**. It is important for government and industry to work together to improve access and delivery of upskilling the work force, especially for digital skills. The workforce needs to understand the market value and potential for higher wages and employment for people with the digital and technology skills.

There are several examples of successful collaborative efforts between government and policy makers, industry and academia in developing the necessary infrastructure for training and development of digital skills.

For example, the World Economic Forum [Reskilling Revolution](#) aims to provide better jobs through education and skills development to 1 billion people over the next 10 years to ensure that they can be employed in the Fourth Industrial Revolution. 50 million have been reskilled so far. The [Punjab Skills Development Fund](#) has established Parwaaz, a multi-stakeholder alliance to accelerate the necessary skills for the workforce of the future in Pakistan.

[The Forum estimates](#) that Greater private-public collaboration on large-scale upskilling and reskilling initiatives could boost global GDP by \$6.5 trillion and lead to the creation of 5.3 million net new jobs by 2030.

The UN Broadband Commission is a consortium of government, industry, funders such as the World Bank and policy makers that is delivering the necessary digital infrastructure in Africa via [the Digital Moonshot for Africa](#). However, according to the [World Bank, this has a \\$100 billion price tag](#). Achieving the “moonshot” will require collaboration between government and industry.

Addressing the digital skills gap is particularly important to increase the participation of women in the workforce. Ensuring access to the internet and mobile phones and the associated [digital fluency is an important means of narrowing the gender gap](#). There is ample evidence that digital skills accelerate every stage of a person’s career—in both education and employment, and increasingly important as women advance into the ranks of leadership. This gender digital skills gap is worse for women living in rural areas, women that are unemployed, and women with lower levels of literacy. By region, [this gender effect is particularly strong in Africa](#). Specific training programs are necessary to address the gendered digital skills gap for sustainable economic development.

The [World Federation of Engineering Organisations](#) is working with its international peers in engineering and its national and international members to build capacity for engineering education and on a wide range of projects including education capacity building in its commitment to advance the UN Sustainable Development Goals through science, technology and engineering including the digital skills gap so that no one is left behind.

About the Author

Dr Marlene Kanga AM was President of the World Federation of Engineering Organisations (WFEO) 2017-2019, the international peak body for engineering institutions with members from 100 nations, representing 30 million engineers. She was the 2013 National President of Engineers Australia. Dr Kanga successfully led the initiative for UNESCO to declare 4th March, as World Engineering Day for Sustainable Development and the message that engineers are essential to advance the 2030 Agenda. She is listed among Australia’s top 100 engineers, Top 10 women engineers and is a Member of the Order of Australia, in recognition of her leadership of the engineering profession.

