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Who builds the digital future matters

DIGITAL SKILLING
JOAN SALMON

As technology reshapes economies and societies, women remain largely absent from the spaces where digital systems are designed, built and governed.

Globally, women account for just 28.4 percent of professionals in science, technology, engineering and mathematics (STEM), according to UNESCO's Gender Gap in Science report. In Sub-Saharan Africa, the figure stands at about 30 percent, an imbalance with consequences that extend far beyond representation.

This disparity shapes how technology works and who it works for. UNESCO has shown that artificial intelligence systems, for example, are less effective at recognising women's voices, a flaw linked to biased data sets and development teams that lack diversity.

Without deliberate action to equip women and girls with information and communication technology (ICT) skills and access, the gender digital divide risks widening further, locking half the population out of the digital economy.

Mentorship as a bridge

For Mark Kwooya, Team Lead at the InterVarsity Mentorship Forum, this reality inspired the creation of mentorship programmes that support women transitioning from university into the workplace.

While women have contributed to landmark scientific breakthroughs, from DNA research to modern computing, Kwooya notes that their presence in STEM careers remains the exception rather than the norm.

He points to a persistent barrier: mathematics, from which many women, he says, disengage early after perceiving the subject as intimidating or uninteresting, cutting off pathways into STEM careers.

Yet, he argues, this is not a question of ability. "With the right teaching approaches and encouragement, women excel," he says, describing them as natural problem-solvers and designers whose creativity is critical to innovation.

Structural barriers persist

While attitudes and education matter, Michael Niyitegeka, Executive Director of Refactory, argues that structural barriers are equally limiting. Chief among them is access to devices. In Uganda, affordable financing options for laptops and computers remain scarce, placing digital participation out of reach for many women.

Internet connectivity poses another challenge. Fibre infrastructure is heavily concentrated in Kampala, leaving much of the country reliant on costly mobile broadband.

For developers and digital workers, whose work requires constant, high-volume data usage, this becomes a significant constraint.

Why practice matters

Even when women acquire technical skills, opportunities to apply them are limited. Niyitegeka emphasises that hands-on experience, regardless of project size, is essential for building confidence and competitive portfolios.

He calls on government and the private sector to create entry-level and support roles that allow women to practise and grow.

As Africa pushes toward digital transformation, closing the gender gap in ICT is no longer a social imperative alone; it is an economic one. PHOTO / FILE

Investing in local talent, he adds, delivers broader economic benefits than outsourcing work abroad. "Building local capacity creates jobs, retains revenue and strengthens long-term growth," he says.

The future of work

Looking ahead, Kwooya warns that coding is no longer optional. As artificial intelligence reshapes the labour market, workers without programming skills face a higher risk of displacement.

He urges education systems to update curricula and teaching methods to reflect technological realities, warning that failure to do so will entrench global inequalities in digital jobs.

Niyitegeka agrees, noting that digital roles, such as web development and design, remain among the most accessible entry points into the STEM ecosystem.

However, as automation accelerates, women must deepen their skills to remain competitive.

Increasingly, employers value professionals who can blend domain knowledge with digital competence, from finance specialists who build simple applications to HR managers who automate workflows.

Long-term growth
'Building local capacity creates jobs, retains revenue and strengthens long-term growth.'

A matter of inclusion

Ultimately, both experts emphasise mindset, opportunity and access. Women are not lacking in capability, they argue, but in exposure, support and infrastructure. Augmenting existing qualifications with digital skills significantly improves employability and resilience in a rapidly changing economy.

As Africa pushes toward digital transformation, closing the gender gap in ICT is no longer a social imperative alone, it is an economic one.

The continent's digital future will be shaped not just by technology, but by who gets to build it.

Key takeaways

- While women have contributed to landmark scientific breakthroughs, from DNA research to modern computing, Mark Kwooya notes that their presence in STEM careers remains the exception rather than the norm.

- Even when women acquire technical skills, opportunities to apply them are limited. Niyitegeka emphasises that hands-on experience, regardless of project size, is essential for building confidence and competitive portfolios.

