

STEM for women fosters heightened industrialisation for Africa

STEM study programmes, alongside the 4IR have been touted as the future by African leaders, however, structural barriers, for girls in particular, remain high. Zimbabwean-born chemical engineer Brenda Vimbai Munyukwi says we should attend to the basics, such as sanitary wear for girls, and eradicate gender-specific school subjects

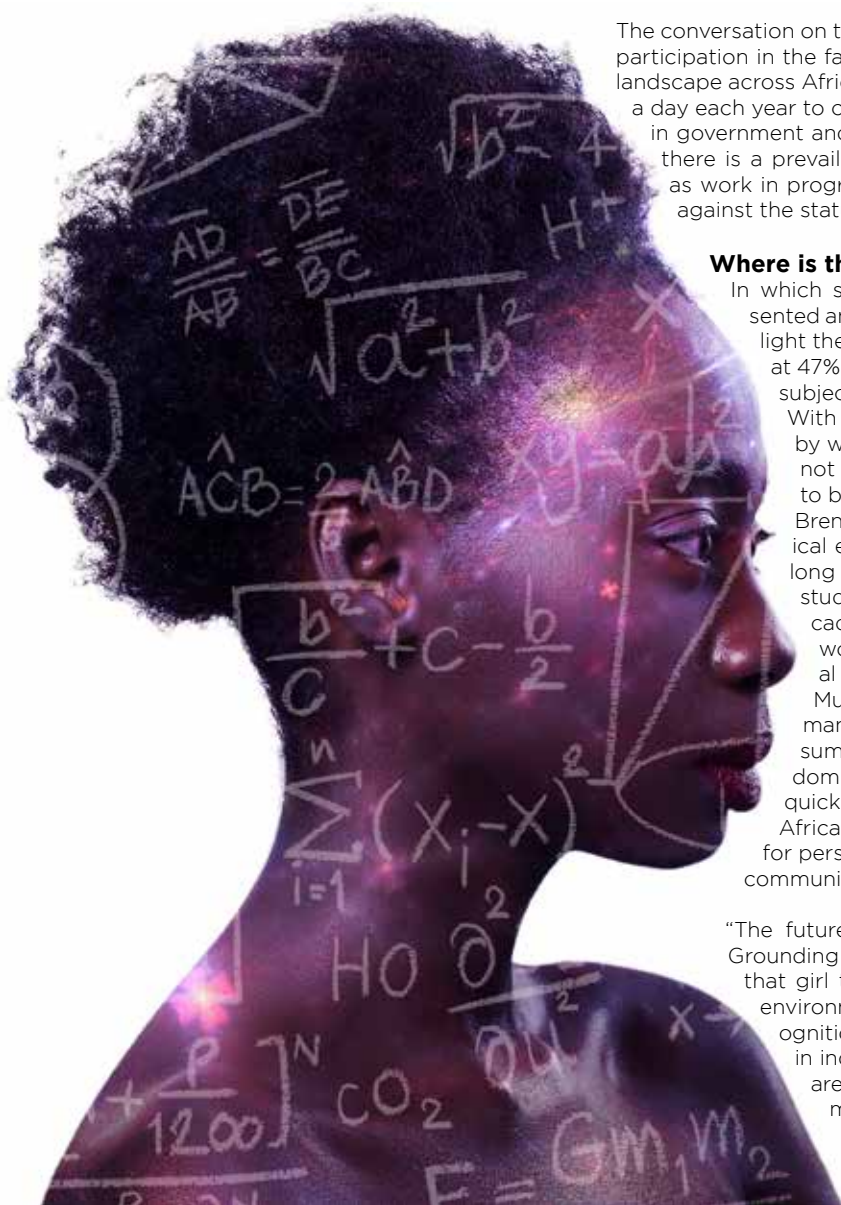
words yvonne c. mtengwa

The conversation on the need to empower the girl child for inclusion and participation in the fast-evolving innovation and institutional leadership landscape across Africa is longstanding, yet as the world over sets aside a day each year to commemorate the contributions of women socially, in government and in enterprise, the question still arises of whether there is a prevailing disconnect between what is being spoken of as work in progress, particularly for women in STEM, when pitted against the status quo.

Where is the gap?

In which stipulated that women were grossly under-represented among STEM graduates. The report went on to highlight the global gender gap at the time, citing that it stood at 47%, with 30% of male students graduating from STEM subjects, while only 16% of the students were female. With such indicators close to 5 years ago and not much by way of progress having been made since, should we not be asking ourselves whether enough is being done to bridge the gender equality gap in Africa? Brenda Vimbai Munyukwi is a Zimbabwean-born chemical engineer and a holder of an MBA degree, attained long after migrating from Zimbabwe to Canada as a student pursuing her undergraduate studies two decades ago. Now a celebrated professional who has worked in senior management roles for multinational manufacturing conglomerates in North America, Munyukwi carries extensive project management and manufacturing experience in the automotive and consumer packed goods industry. Her journey in this male dominated landscape has not been easy though. She is quick to highlight the need for more women, especially African women, to view STEM careers as opportunities for personal development, professional advancement, and community impact.

"The future is with those that can think outside the box. Grounding yourself in STEM allows you to be innovative. I was that girl told not to pursue Chemistry, and grew up in an environment where women seemingly receive more recognition for being a wife and mother than their exploits in industry or enterprise, yet there is so much more we are capable of accomplishing beyond being a homemaker and nurturing a family. I marvel at the fact that I have managed manufacturing plants and I am shaping organisations," she says.



Perhaps it's a case of misunderstanding what opportunities are available for women in this field, as some studies have shown that the gender inequality gap is commonly attributed to existing negative stereotypes and fewer roles models of African descent, who can positively weigh in on why African women should consider STEM over other faculties. Also, there is the question of affordability as many STEM related programmes of study come at a seemingly hefty price tag for most. Add to that the fact that women are generally at a disadvantage when they are pitted against their male counterparts who, for example, do not have to take time away from the workplace to raise families.

Debunking myths on women's contributions towards industrial growth

The truth of the matter is, ongoing shifts in global socio-economic and geo-political systems present a highly interconnected world, which warrants constant evaluation of what role science, technological development, engineering capacity and mathematics plays in the economic prosperity of communities and nations at large. Women are a strong proponent of this growth and so their contributions should not be undermined, given the forecasts that STEM careers will be most sought-after as we usher in the fourth global industrial revolution.

"My role has evolved over the last few years, and working in the consumer goods industry has allowed me to confidently say I can make most things in a grocery store," says Munyukwi, as she shares more details of what her profession entails.

"In saying I can make most things one would find on a grocery store shelf, I mean making a product from ideation, pushing through the process to enabling consumers to have it available for purchase. The competitive nature of business warrants that a manufacturer produces goods with the balance of quality, cost and timing in mind. For example, you simply cannot have a product that takes three years to launch because consumer trends change. And so, my expertise allows manufacturers to be competitive in their speed-to-market strategy within the consumer goods space," Munyukwi adds.

From her assertions alone, one can deduce that a background in STEM transcends the perceived notion of what it is like to work in scientific or technologically driven environments. It's not all about being locked up in a laboratory for hours with test tubes and Bunsen burners! Here, we see a trained chemical engineer playing a pivotal role in the production, delivery and movement of fast-moving consumable goods as much as someone working in supply chain or retail management would.

"My journey started in my undergrad class as the only girl in my programme of study – Chemical Engineering – for all of my four years! Sadly, this continues today in my career as I still work in a heavily male-dominated environment. But as challenging at times as it has been, I have found some sort of balance that makes me en-

joy my work while still enjoying a healthy family life and staying true to my personal values," Munyukwi says.

The need for more African women in STEM careers

If in fact Africa is to seriously compete as part of a global ecosystem in light of the looming wave of heightened industrialisation, equipping women with the knowledge they need to participate in frameworks for innovation is something leaders must take seriously. Africa's leaders must be willing to address the gender equality gap and negative stereotypes associated with the participation of women in the workforce and within communities they are a part of.

"There is still so much to be done on our continent if we are talking about education for the child alone, without even delving in the issue of STEM for all," Munyukwi says.

"Gender inequality is a real issue that plagues Africa and the world over, but for us, we cannot even begin to talk about opportunities for STEM when in our societies, girl children cannot attend school due to not having sanitary wear to accommodate a natural biological process. Look at the workforce in technical careers. The mentality that women only belong in domestic aspects or that some careers are gender-specific makes it difficult for women to get ahead. Why can't woodwork be available for girls too? Why can't certain communities value the importance of educating the girl child as much as they do the boy child, especially given that women make the best multitaskers."

Perhaps it remains to be seen what progress the African Union makes with the advent of the recently developed three clearly defined strategic frameworks for fostering education, scientific knowledge transfer, technology, and innovation. The Continental Education Strategy for Africa (CESA-16-250); the Continental Strategy for Technical and Vocational Education and Training; and the Science, Technology and Innovation Strategy for Africa (STISA-2024) are slated to be the blueprints for the continent's leaders in propagating opportunities for young women interested in taking STEM beyond the classroom, and only time will reveal the shift in numbers of women entering the STEM space.

"Africa's potential is amazing, especially with the numbers we have with women, and also with the fact that we have the largest youth population in the world. Women are every bit a part of the future. In Africa today, women and girls work tirelessly to raise families whilst simultaneously working a job or growing a business.

"That in itself is commitment towards a better life for themselves and their communities. Women can think outside the box already and that's what STEM brings out – innovation. Layering in the resources we have as a continent, the future is bright if we can harness the growth opportunities STEM offers," Munyukwi says. ▣