

How future-focused digital solutions can transform global education

By [Angela Schaerer](#)

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From South Africa to South America, education is in a critical state of flux. Young learners are failing to emerge from their traditional schooling with the skills needed for a digitally driven world of work, and tertiary institutions are battling to stay relevant amidst ongoing technology-fuelled disruption. The result, which is already playing out in companies across the world, is that employers are struggling to find people with the digital and 21st century skillsets needed to succeed today.



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In 2016, a *Digital Skills for the UK Economy* report released by the Department for Business, Innovation and Skills found that across the board of businesses in all sectors, 72% of large companies and 49% of SMEs are suffering from an IT skills gap. In South Africa, the situation is arguably even more challenging.

Adrian Schofield, Wits University's Joburg Centre for Software Engineering (JCSE) manager of Applied Research and author of the *JCSE Skills Survey 2016* report, has stated: "There is an immediate unsatisfied need for skills in the ICT sector that is only going to get worse in the medium and long term. Significant and sustained investment in education and training is required to have any hope of alleviating the skills gap."

Encouragingly, however, a new wave of digital learning solutions is beginning to emerge, with technology companies and educators pioneering different ways of engaging learners at all levels. From coding initiatives to compelling online games, there are undoubtedly pockets of innovation within the global education landscape.

Introducing creative learning solutions

In South Africa, for example, technology provider Microsoft is placing a strong emphasis on learning to code – and supports multiple programmes that foster computer science and digital literacy skills. One such initiative is Computer Science Education Week, which includes participating in an Hour of Code.

Minecraft is a fun and highly compelling game used in classrooms both locally and around the world - and gives teachers a unique opportunity to learn the basics of coding. Children learn naturally through a combination of observation, trial and error, and play-based practice. An open-learning environment like Minecraft allows students the freedom to experiment and challenge themselves. Much like real life, there are no step-by-step instructions — students must try, fail, and try again to achieve the result they want.

The impact of this game has been significant: in just one year since launching, [Minecraft: Education Edition](#) has more than two million licensed users in 115 countries around the world who are able to use the Code Builder extension to teach the basics of coding to their students. Remarkably, to date, nearly 70 million people have used this programme's tutorials to learn the basics of coding.

Boosting diversity within STEM-subjects

In addition to teaching learners of all ages how to code, it is becoming imperative to find ways to attract more females to STEM-related subjects, and in turn, workplaces. This will be fundamental to addressing the local IT skills gap.

Traditionally, young girls have steered away from these subjects in school, resulting in a lack of female professionals in the fields of mathematics, computer science, engineering, and IT, among others.

Interestingly, however, an in-depth study of 11,500 young women found that creativity and hands-on practical experience plays a key role in encouraging more young women to pursue STEM subjects and careers. More specifically, the findings revealed that STEM subjects, STEM careers and self-reported creativity are 'closely linked'.

With this in mind, creativity should be fostered at a young age - by using tools that teach the application of creativity to real-world problems and support computational thinking. Encouragingly, STEM subjects are starting to be taught with more creativity and are becoming more interactive and accessible. Platforms such as Minecraft Education Edition allow students to create and explore STEM lessons in a compelling way, applying their natural creativity to problem solving.

Addressing three major education gaps

While interactive and virtual learning solutions platforms are beginning to have a positive impact, wider systemic change is still necessary. According to recent research by Boston Consulting Group (BCG), there are three critical education gaps that need to be addressed in order to position global education for a bright future.

Firstly, there is the perspective gap. Today, education systems are primarily focused on learning in schools (nursery school through to university) instead of placing emphasis on learning as a continuous process from birth to the end of life. Next, there is the capabilities gap. This refers to lecture-based learning as the primary mode of instruction, despite the availability of new and sophisticated technology. Today, there are limited places of innovation that teach the skills needed to succeed in a digital-first era. Finally, there is the agility gap. Despite many efforts at reform, the global education sector remains one of the most difficult in which to make sustainable local and systemic change.

Harnessing technology in formal learning environments

Although there are multiple challenges and obstacles to re-imagining and re-designing education, the opportunities are enormous. Increasingly, those opportunities can be found in savvy technology solutions that reflect an emerging philosophy around learning.

For example, BCG has found that the focus needs to shift to promoting life-long learning opportunities and to developing career connections very early on. Also, it is necessary to examine how and what we learn. Increasingly, research suggests we must integrate brain science, and place emphasis on higher order skills. This will require the introducing innovative pedagogical methods, embedding social and emotional learning and expanding student assessments.

Looking ahead, it is imperative that educators, leaders and policymakers begin to implement key changes and harness technology that will pave the way for future-focused, high quality education that is accessible to learners everywhere.

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