

# Editorial

Dolina Dowling

The Fourth Industrial Revolution continues at pace with changes taking place in technology, economy, and societies. All aspects of our lives are affected albeit at different speeds and ways. However, the exponential innovations in technology in particular in Artificial Intelligence (AI) have yet to impact education, (although the advent of Microsoft-backed OpenAI ChatGTP is causing consternation about what this means for assessment and the curriculum in higher education).

The COVID-19 pandemic with its concomitant lockdowns necessitated the move to online learning. Virtual classrooms, Zoom lectures and seminars, and the importance of the full use of Learning Management Systems (LMS) by academics and students alike, assumed a priority. This move had varying degrees of success. The World Economic Forum (WEF) stated that while learning outcomes were compromised due to the move to online learning, it has provided the impetus for policymakers and institutions to undertake a 're-examination of the concepts of time and space in the education world'.<sup>1</sup> The mantra that online learning allows 'anywhere anytime' learning is often used to show that education is becoming more inclusive and accessible. However, there is still a disjuncture between access and success.

Another aspect of technological advances is that it allows access to knowledge on any subject. This has the potential to render lectures redundant as a method to transmit knowledge. In any case, it has long since been established that for learning to take place and for success in achieving learning outcomes, it needs to be active rather than passive. For deep learning to take place it needs to include the application of knowledge. While the implementation of Work Integrated Learning (WIL) in higher education programmes sought to address this, it does not go far enough. Students need to be prepared for the future workplace. As noted in previous editions of this journal, they need to be flexible and agile learners. They need to be taught 'skills that remain relevant in changing and unknown contexts'.<sup>2</sup> Hence the importance of ensuring students are critical and creative thinkers, problem solvers, can engage with AI, and use big data. Students need to be prepared for a future in which by 2030, 85% of jobs have not been invented yet.<sup>3</sup> 'The pace of change will be so rapid that people will learn "in the moment" using new technologies such as augmented reality and virtual reality. The ability to gain new knowledge will be more valuable than the knowledge itself' (ibid).

For a country to prosper in the global economy in this increasingly technological world, it needs a highly educated and ICT sophisticated citizenry. Given the inequalities that continue to exist between the Global North and the Global South, this is a challenge that will be difficult to meet. In all three education sectors in

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<sup>1</sup> [www.weforum.org/agenda/2022/02/four-trends-that-will-shape-the-future-of-higher-education/](http://www.weforum.org/agenda/2022/02/four-trends-that-will-shape-the-future-of-higher-education/)

<sup>2</sup> [www.werforum.org/events/the-growth-summit-jobs-and-opportunity-for-all-2023](http://www.werforum.org/events/the-growth-summit-jobs-and-opportunity-for-all-2023)

<sup>3</sup> [www.linkedin.com/pulse/85-jobs-exist-2030-havent-been-invented-yet-leo-salemi/](http://www.linkedin.com/pulse/85-jobs-exist-2030-havent-been-invented-yet-leo-salemi/)

South Africa, the gross inequalities between the populations of rural and urban areas; those with wealth and those living in poverty, became more apparent than ever during the pandemic. All the articles in this 18<sup>th</sup> edition of the journal, reflect the challenges that South Africa is facing.

This is evident in the first article in which experiences of students at a rural university during lockdown clearly exposed the lack of technology, infrastructure basics like electricity, Internet access, mobile devices, and quiet places to study at home. The authors recommend a number of actions to address this situation both at the level of rural infrastructure and institutional student support. In the second article, the response of a university at the start of the pandemic lockdowns was explored along with students' perceptions of their online learning experience. The unequal access to technology and associated resources was evident in student responses to their online learning experience and academic performance. The institution developed new policies to address these. Again, this problem highlighted the inequality of access with success to education.

Advances in AI and cloud-based learning platforms make it inevitable that higher education institutions (HEIs) will continue to increase their programme offer in hybrid and online learning. (In South Africa, most had already engaged in these prior to the pandemic.) This means that academic staff need to be highly technological literate. Continuing professional development is of importance as is ensuring academic staff retention. The authors, in the next article, report on a case study conducted at an open and distance learning HEI to identify risk factors which contribute to academics deciding whether or not to leave the institution. They developed a human resource risk management conceptual framework for use in encouraging academic staff retention.

The next four articles are concerned with teaching and learning and how to enhance student learning. The first of these is concerned with the challenges of teaching computer programming to postgraduate Computer Science students, which is a much-needed skill. The authors' study showed that the use of explicit instruction enhances the quality of programme delivery. In the following article, a case study was used to investigate the conceptual errors that students make in the learning of a linear function. This was followed by an article investigating the type of strategies used in teaching mathematics. The authors found that most lecturers used traditional non-interactive teaching approaches, which encourages surface learning at best. In the last article in this cluster, the author argues that using critical pedagogy in postgraduate psychological education enables students to understand how external influences impact selfhood, which is important for their clinical practice.

Employability of learners through Recognition of Prior Learning (RPL) is the topic of the next article. A study in Botswana found that RPL not only benefits the participants, but it also has the potential to develop a country's human resources.

In the following article, the author provides a much-needed bibliometric analysis of the first 15 years of the publication of *The Independent Journal of Teaching and Learning* (2008-2014), an open access journal in South Africa. He found that the journal has been impactful on South African education.

It is a *sine qua non* that learners need access to books and other reading material to develop literacy and to be able to fully participate in the school curriculum and beyond. In Practitioners' Corner, the authors using a qualitative approach investigated the extent to which classroom had libraries for English First Additional Language learners in the Intermediate Phase in a rural province in South Africa. Sadly, the findings showed that there was a lack of space, and insufficient teacher knowledge on developing and operating a classroom library. The authors make a number of recommendations to address these.