EDITORIAL
Teaching and Technology: Diverse Interactions for Diverse Contexts

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This is the second issue of the Scopus-indexed *JL4D Volume 11*, and the selected papers in this issue (seven research papers, five case studies, one field report, and two book reviews) represent researches and reflections on 'teaching and technology' applied in diversified contexts across the globe. Educational technology developments encompass their evolution from the early print, audio-visual aids and broadcasting technologies to the contemporary web-based learning, mobile learning/ubiquitous learning, learning in three-dimensional immersive environments, and AI-based learning. Alongside this, pedagogic theories evolved from the early behaviourism through cognitivist, constructivist, connectivist/connectionist strategies, and, of late, open pedagogies and open educational practices. It has been underlined that technology can facilitate/enhance student learning (Kirkwood & Price, 2013), and the latest technologies like augmented reality (AR) design, can improve students' higher order thinking skills (Bower et al, 2014). However, technology itself does not do much unless technology relates to appropriate pedagogy (i.e., techno-pedagogy) in appropriate learning contexts, and therefore the interaction of technology and pedagogy will differ across contexts and learning interactions. The papers included in the present issue of the *Journal* focus on this theme of 'teaching and technology'.

The first paper in the peer-reviewed *Research* section by Tomal Chadeea and Paul Prinsloo presents the findings of a five-stage framework-based scoping review on Augmented Reality in open and distance education and the conditions that enable its effective use, by employing the PRISMA technique. The analysed scoping themes include: the potential of AR, challenges faced in using AR, mobile learning, new technologies for integration of AR, and the broader context of AR pedagogy in higher education. The authors report that, surprisingly, there has been very little research on AR in the context of distance education, where it can provide for real-time learning as well as personalised learning, and that research in this area may be augmented in the future. In a similar scoping review, the positive impact of AR in supporting a more interactive learning environment, linking digital resources to real-world contexts, and promoting efficiency in learning was also reported by Fayda-Kinik (2023).

In the second paper, Ramashego Mphahlele reports the findings of a research review on the challenges and strategies of collaborative assessment in ODeL, which show that effective communication, appropriate technology and timely feedback can enhance effective motivation and effective learning. The researcher suggests that technology can facilitate integration of collaborative assessment in ODL, and that pedagogic support and professional development are critical to enhance teacher efficacy in the effective use of collaborative assessment in distance education.

In the third research paper, Wawan Krismanto and co-researchers, in a qualitative research study, underline the positive effect of online collaborative learning, with the use of multiple technologies (LMS, chat, video call, virtual class, WhatsApp) on teacher professional learning in designing, implementing, evaluating and reflecting on professional learning and

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development, thereby enhancing their digital competencies (for learning and collaboration), and competencies of teaching and problem solving. The researchers suggest effective design of OCL requires social interaction and building a learning community, resource sharing, effective feedback and support, and building on participants' performance toward task completion. Future researchers may look into the facilitating and inhibiting factors for effective online collaborative professional learning.

In the fourth paper, based on a longitudinal study on school-based and contextual resource-based teacher professional development in Zambia (Zambia Education School-based Training/Teacher Professional Development @Scale), Kris Stutchbury and co-researchers, present a conceptual model grounded in sociocultural theories of learning. The framework used technology, professional experimentation, collaboration, and expert support in teacher professional development in a low technology-intensive context (wifi-enabled personal computer and mobile phone) encompassing professional recognition, equity, authentic tasks, social learning, and longitudinal study. The four conceptual process tasks were: coherence, cognitive participation, collective action, and reflexive monitoring. This is a sustainable model of equal involvement of school-based, district and province-based, and government-based personnel in the continuing professional development of teachers. The founding principles in this project were: resource-access-support. This study presents an excellent sustainable TPD by effectively connecting theory-policy-practice, which can be scaled up as also attempted in other parts of the globe.

In the fifth paper, Read, Bruce and Olcott Jr report the findings of a study on online and digital micro-credentials for refugees toward 'development for empowerment', which is combined with open online education and digital micro-credentials to sustain refugee education and life style. Based on the provision of expediency and immediacy, education for refugees can build on digital skills, micro-credentials, and training to further leverage access, gender equity and success, and can ensure quick integration and assimilation, and training for certified learning outcomes. The conceptual framework involved: psychological contextualisation and scaffolding, open online education, and digital micro-certification. The authors recommend for any modality, or a mix of F2F, distance, online, and blended learning, the integration of expediency and micro-skilling toward both educational and social inclusion/integration within the framework of social justice.

In the sixth paper, Chayanika Senapati and Dipankar Malakar report the findings of a research study on the online teaching competency of higher education teachers and self-perception of their ability. The results indicated that while the four dimensions of teaching competency — course design, course communication, time management, and technical competencies — had no effect on perceived online teaching competency, there was a difference among teachers' efficacy in teaching online, with younger and male teachers having higher scores than their counterparts. The design aspects (course design and design of interactive activities) were valued more over course creation and student assessment. In a post-Covid scenario, the authors suggest consideration of the above four digital competencies of teachers to ensure effective teaching-learning in higher education.

In the final paper in this section, Charlaine Perez and co-researchers report a significant relationship between online game addiction and the mental wellbeing (in terms of depression, anxiety, stress) of high school students during Covid-19. The researchers suggest consideration of both the aspects of benefits and risks in digital competency and digital learning, and include

the dimensions of digital citizenship, safe gaming practices, and awareness of mental wellbeing in course activities.

In the *Case Study* section, we have included five peer-reviewed cases. In the first case study, Tony Mays and Ricky Cheng present offline strategies in low-cost technology contexts of remote areas for distribution of learning resources (digital open educational resources) for ODL in the school sector/open schooling by using the low-cost Aptus mobile device. The experiences gained from this application across Commonwealth developing countries could be useful to many who adopt the technology and/or devise such innovative technologies appropriate to their contexts, including the use of generative artificial intelligence in Aptus by the Commonwealth of Learning. In the second case study, Rocha, Bewersdorff and Nerdel report the results of an exploratory study on the effect of ICT on schoolteachers and students by using the Unified Theory of Acceptance and Use of Technology (UTAUT). The six ICT factors were used in juxtaposition with 15 indicators, which suggested confirmation of the structural equation model, and also that the teacher attitude and administrator support were crucial in effective use of ICT in the classroom. The researchers suggest ensuring teacher continuing professional development, adequate resources, and facilitative school environment for effective use of ICT in school education. In the next case, on a comprehensive national review of research on ODL, Christine Ofulue and co-researchers present the research areas and research gaps by surveying ODeL practitioners and interviewing ODeL experts. The research priorities suggest areas that are also found in many studies covering other countries, including learning resources, technology, instructional delivery, and learner support. The fourth case study, on review of publication trends on online assessment in physical education by Blegur, Mulyana and Saparia, suggests that there have been scanty studies in this area and that future researchers need to focus on this very important area to make online assessment in a skill-based area of physical education more effective and useful. In the last case study, Komur and Okur report that integration of MOOCs in an EFL course for school students had a positive impact on their motivation and learning engagement, and that when MOOCs were integrated with performance tasks of the EFL course, there was an increase in students' language learning and their research and analytical skills.

We have only one *Report from the Field,* by Sapuan and Chan, who report that simulation, when integrated in ODL programmes, significantly contributes to increasing students' immersive learning experiences and can facilitate experiential learning. This is an area which needs to be seriously looked into by other open universities and distance learning providers, who struggle in their effective implementation of skill-based courses and programmes.

The *Book Reviews* by Geesje van den Berg, on the teaching-learning futures of higher education, and by Jyotsna Jha, on gender, sex and technology, should be of high interest to our readers and should be useful to their conceptualisation and strategisation of 'teaching and technology' in their own educational contexts.

In an earlier note on technology-enabled learning (TEL) and learning for development (L4D), Mays (2023) had pointed out that we need to be concerned with 'why' for development and 'how' technology can leverage that, and that we must be constantly evaluating what we do so that we can keep tabs on effective learning outcomes. In this context, learners need to be always the focus of 'learning for development' (Panda, 2023b), and that both F2F education and ODL must facilitate the development self-directed learners (Daniel, 2014) and the competency of 'learning to learn' (Panda, 2023a). The papers included in this issue have been in line with this constant evaluation and improvement. The various papers included in this issue suggest that effectiveness in learning and professional development is possible if 'teaching and technology'

are designed appropriately with local resources with contextualised applications for generating new ideas, experimentation and innovation, and collaboration and resource sharing. Open distance learning and technology-enabled learning needs to combine empowerment with learning and skilling, and consider both the aspects of the hazards and benefits of digitisation in 'teaching with technology'.

To end this piece, I take this opportunity to sincerely thank Dr. Tony Mays, Dr. Jako Olivier, Dr Mairette Newman, Dr Betty Ogange, and Alan Doree for facilitating this issue being published on time. We hope our readers enjoy reading and benefitting from the papers and book reviews of this issue.

References

Bower, M., Howe, C., McCredie, N., Robinson, A., & Grover, D. (2014). Augmented Reality in education — Cases, places and potentials. *Educational Media International*, *51*(1), 1-15. https://doi.org/10.1080/09523987.2014.889400

Daniel, J. (2014). What learning for what development? *Journal of Learning for Development*, *1*(1). https://jl4d.org/index.php/ejl4d/article/view/7/3

Fayda-Kinik, F. Sekhar. (2013). Augmented reality in education: An overview of research trends. In *International Eurasian Educational Research Congress Conference Proceedings*. Ani Publishing.

Kirkwood, A., & Price, L. (2013). Examining some assumptions and limitations of research on the effects of emerging technologies for teaching and learning in higher education. *British Journal of Educational Technology*, *44*(4), 536-543. https://doi.org/10.1111/bjet.12049

Mays, T. (2023). *Celebrating ten years: Reflections on COL's* JL4D. https://www.col.org/news/celebrating-ten-years-reflections-on-cols-jl4d

Panda, S. (2023a). Changing perceptions of 'learning for development' in the new normal. *Journal of Learning for Development*, *10*(2), i-vii. https://jl4d.org/index.php/ejl4d/article/view/1092/926

Panda, S. (2023b). Learners as focus in 'Learning for Development'. *Journal of Learning for Development*, *10*(3), i-iv. https://jl4d.org/index.php/ejl4d/article/view/1259/977

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