

Innovating education in the era of technology

The educational landscape is undergoing a significant change. The adoption of new technologies and innovative practices in education has become ever more prevalent across the globe, and it is bringing about a paradigm shift in contemporary education. For example, the greatly increased attention paid to learning analytics and augmented reality, and the widespread use of mobile devices for learning in recent years, show the evolving environment of education. Education providers are facing a pressing need to keep abreast of such developments and use them effectively to advance learning and teaching. These developments also require further research on how education can be even more innovative in the era of technology.

This special issue contributes to addressing such important needs for scholars and practitioners in education-related fields. Most of the articles included in this special issue are the extended versions of selected best papers presented in the 2017 International Conference on Open and Innovative Education. The conference aimed to provide a platform for sharing research, practices and views related to innovative education. It included papers which capitalised on the diverse strengths and common commitments of the participants to realise the potentials of technological advances in education and enhance educational access and quality.

The papers in this special issue cover innovative ideas or address important issues on innovating education through technology.

The paper “A hierarchical model for developing e-textbook to transform teaching and learning” outlines a hierarchical model for the design and development of e-textbooks. The model addresses the need for effective integration of e-textbooks in teaching, with five functional layers – core functions, internet connection, sharing and collaboration, personalised learning and intelligent tutors – to systematically categorise the features involved. The paper also illustrates a case study of applying the model for the development of an e-textbook app.

The article “Course design investigation and trial on the subject of self-regulated learning using video content and online report submission” proposes and evaluates a course design to promote the understanding and use of self-regulated learning by university students. The course design features the viewing of videos and online essay submissions to help students reflect and conceptualise their own learning experience.

The paper “Lessons from adopting a maker approach to teaching operating systems with Raspberry Pi” presents the transformation of a conventional engineering course through introducing the maker approach. Students had to make a toy robot through applying the knowledge learned in the course. The paper shows how students’ learning motivation was improved by being able to demonstrate what they had learned with the robots they made.

The article “Trends in learning analytics practices: a review of higher education institutions” reviews and identifies the major patterns and trends in learning analytics practices in higher education institutions. It provides a bird’s-eye view of the current status of learning analytics practices by identifying their characteristics and outcomes and revealing the potential areas for further exploration.

The paper “Students’ perceptions of changes to the learning environments of undergraduate physics laboratories: an empirical study” reports a study on undergraduate



students' views on, and perceptions of, reforms to the learning environments of physics laboratories. A guided inquiry approach is introduced to restructure students' scientific inquiry experiences during laboratory sessions.

The article "Analysis on the gamification and implementation of leap motion controller in the I.E.D. Técnico Industrial de Tocancipá" presents the use of augmented reality tools and gamification to improve children's learning outcomes in their English. It addresses particularly the education context of Colombia and discusses how the introduction of this emerging technology can advance education at students' different learning stages.

I would like to thank all the reviewers for their comments for improving the quality of the papers, and the authors for their revisions of the papers. Their commitment made this a high-quality special issue.

Kam-Cheong Li
Guest Editor