Guest editorial: Catering for learner diversity with technological advances

Catering for learner diversity has been recognised as an important issue in contemporary education. Recent advances in smart and interactive technologies have given rise to innovative practices geared towards identifying and addressing learners' individual needs. For example, the growing adoption of learning analytics, artificial intelligence (AI) and mobile technology has highlighted their indispensable role in a broad spectrum of educational endeavours such as improvement of learning environments, transformation of pedagogical methods, refinement of curriculum design and enhancement of educational management. This special issue aims to address the pressing need for scholars and practitioners in education-related fields to keep abreast of relevant latest developments and their far-reaching implications for educational practices.

This special issue comprises a total of eight papers which deal with learner diversity through technological advances from various perspectives. The first paper by Zhan and Tong presents an evaluative model to predict MOOC learning performance using data related to learners' online learning behaviours. The authors examined various algorithms and identified those which make a better prediction of learners' learning performance. The findings are useful in assisting teachers in understanding learners' learning status, locating learners with learning difficulties and providing targeted instructional interventions at the right time.

The second paper by Goi *et al.* reports a study on students' motivation for social media use and its impacts on their learning outcomes. The authors observed the major factors which influence students' use of social media and learning outcomes, such as video clip watching, non-academic learning intentions and entertainment intentions. Drawing on their observations, the authors provide various stakeholders such as learners, education practitioners and policymakers with guidelines on effective use of social media networks to facilitate learning.

The paper by Hirata analyses the use of an online avatar-assisted virtual classroom for alleviating the anxiety of Japanese university students about giving oral presentations. The author found that students' levels of anxiety, fear and apprehension when delivering their oral presentations are related to the settings of presentation, such as using Zoom online and conventional face-to-face classroom. These findings reveal the effectiveness of technological use to create a playful language learning environment and maintain learning engagement.

The paper by Ifenthaler and Şahin investigates the use of a computerised classification testing system with a dashboard for students' self-assessment, covering the changes in students' intended use, perceived usefulness and confidence with the system. Comparing with another version of the system without the dashboard feature, the authors found that the students who used the system with the dashboard tended to show a higher confidence and interaction level. The findings highlight the importance of designing a learning environment that supports students' needs.

In their paper, Ching *et al.* studied elderly learners' perceptions of Zoom learning during the COVID-19 pandemic in Hong Kong based on the input–process–output model. The study results show the learners' attitude towards Zoom learning, the effect of interactions

Interactive Technology and Smart Education
Vol. 20 No. 3, 2023
pp. 289-290

1741-5659
DOI 10.1108/ITSE-09-2023-251

with their peers and the effect of teachers' instruction on learning outcomes. These findings offer insights into ways to improve the design of learning process among elderly learners on the Zoom environment.

The paper by Ali reports a case study on university students' motivation for using Facebook as an informal learning tool. The study identified a range of factors and challenges that may affect the use of Facebook among the students. Examples of the factors include information seeking, connectedness and reward seeking, and those of the challenges include time constraint, social anxiety and cultural issues. Drawing on these findings, the author provides practical insights into the design of a ubiquitous and personalised learning environment for students.

In their paper, Zhao *et al.* propose a virtual reality (VR) wisdom teaching model and testify its effectiveness in a pilot teaching reform project. They show that the model helped students enhance their learning interests and outcomes by immersing themselves in virtual language scenarios to complete learning tasks. This paper contributes to revealing the benefits of VR technologies for tackling the shortcomings of traditional English classes, arguing for a deeper integration of VR/AI into foreign language teaching and learning.

The last paper by Li and Wong presents an in-depth bibliometric analysis of the patterns and trends of publications on AI in personalised learning. Through reviewing more than a thousand relevant literature, the authors demonstrate that while a large body of relevant work has been published in various sources, the work tends to be focused mainly on topics such as AI technologies and techniques as well as the design and development of AI systems to support personalised learning. Their findings highlight the need for more future work on diverse ways to support personalised learning with AI, the pedagogical issues, as well as teachers' roles and teaching strategies.

The papers featured in this special issue present a varied and rigorous body of quality and impactful research that showcases the potential of technological advances to personalise and optimise education delivery. It is hoped that these papers will stimulate further insights and innovations in the field and provide a robust foundation for future research and development related to catering for learner diversity.

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