

Editorial: Volume 33 Issue 1

In this issue, eleven articles present diverse ideas within three main synergistic themes: teacher education, blended learning, and mobile technology.

Teacher education has been a key area of research in the past decades, and is the focus of the first four articles. Given the prominent role of teachers in shaping the nation's future, it seems imperative that considerable effort and attention is invested in teacher education and development, to cultivate adaptive, skilful, and knowledgeable teachers who are ready to take on the challenges of the classroom. With technology being an integral part of teaching and learning, researchers are investing in how technology shapes and benefits teaching. However, as rightfully pointed out in the first article by **Becuwe, Roblin, Tondeur, Thys, Castelein, and Voogt**, it is a daunting task for teacher educators to model effective integration of technology. To find ways for bringing together teaching and technology, these researchers adopted a Delphi study aimed at synthesising the knowledge and views of various stakeholders about the conditions for the successful implementation of teacher educator design teams (TeDTs) for ICT integration. Some important conditions were identified by the researchers, such as: (1) the creation of an atmosphere of trust, and (2) responsible participants with a shared TPACK goal over the long run - which is key to the collaboration process. These conditions are useful for institutions to consider when implementing TeDTs for ICT integration.

Echoing the need to model effective integration of technology, **Chai, Tan, Deng, and Koh** also argued that teachers should be competent at designing lessons that harness technologies. They further pointed out that teachers' beliefs about learning, combined with their design dispositions, design practices, and relevant factors of TPACK are essential drivers of teacher engagement in designing lessons. Using a survey method, these researchers found that teachers' beliefs about learning and their design capacities shifted along with their TPACK efficacy. They also identified factors that could possibly affect teachers' competencies in designing meaningful lessons. Such findings may help to explain the critical role of teachers' beliefs in lesson design.

In a more contextualised study, **Lin and Xie** investigated the effect of employing *tagclouds* as anchors to support pre-service teachers' knowledge construction in small groups. Not only did the researchers conclude that group discussions with learner-generated tagclouds could facilitate knowledge construction, they also found that tagclouds as anchors for group discussions successfully guided and mediated the interactions among participants, and supported meaningful and active participation. Along a similar vein, on the importance of interaction, **Smits and Voogt** conducted a study on the impacts of two groups of online teachers' asynchronous messages on students' learning. The researchers suggested the importance of addressing the group, neutral acknowledgement, specific praise, elaborate content, and online personality for student satisfaction. Both Lin and Xie's, and Smits and Joke's studies may generate interest among researchers regarding the possibility of combining the technology with the strategy of effective asynchronous messaging, and subsequently transferring the success of their findings to research situated in the student context.

The next three articles explore the second theme, blended learning. Performing social network analysis of the most cited blended learning articles around the world, the journals in which the articles were published, and the citation and publication patterns for each, **Spring and Graham** present a broad overview of the current impactful conversations about blended learning. These researchers found a huge disparity in citation patterns around the world. They also reported that while blended learning research from North America is predominately cited more frequently worldwide, there is a growing trend in blended learning research elsewhere. The researchers point out that it would be beneficial to have stronger communication and collaboration within the blended learning field, especially as more blended learning research is conducted on various continents and in differing learning contexts.

Along the same line, **Crawford and Jenkins** discussed 3 years of sequential findings about teacher-led research on the innovative pedagogical approach using a combination of blended learning and team teaching strategies. The researchers suggested that face-to-face and online components need to be complementary and interdependent to be successful, and that there are benefits from combining the blended learning and team approach. With the tendency of institutions to be quick to invest in blended learning

without understanding its complexities, Crawford and Jenkins's study offers valuable advice on effective implementation. They conclude that investigations into learner satisfaction and intention are necessary to sustain the use of blended learning.

Still casting a research lens over blended learning, **Al-Azawei, Parslow, and Lundqvist's** study - one of the few examining the technology acceptance model (TAM) in Arabic populations - extended TAM by incorporating e-learning self-efficacy, perceived satisfaction and learning styles into the model. Unlike prior TAM literature, this research highlights the integration of perceived satisfaction and technology acceptance in accordance with psychological traits and learner beliefs. Overall, the model achieved an acceptable fit and successfully integrated intention to use (ITU) and perceived satisfaction (PS). However, psychological differences did not indicate positive impacts on learner satisfaction and e-learning adoption. According to the authors the findings add to the body of literature regarding the soundness of TAM across cultural differences.

The final four articles investigate mobile learning, an area of research experiencing rapid growth. Both using the technique of structural equation modelling, Gan and Balakrishnan, as well as Huang, Tang, Lee, and Yang generate interesting findings about mobile learning. For instance, **Gan and Balakrishnan** argue that the reason for using mobile technology in classrooms with large numbers of students is to facilitate interactions among students and lecturers. Extending the TAM, these researchers found that students' perceptions of how comfortable they feel about the mobile tools, whether they enjoy using these tools in the classroom, and their perceptions of whether they provide useful information for learning, determines whether they accept or reject mobile technology. However, the researchers also found that the findings of previous research on perceptions of ease of use and usefulness were not significant predictors in this case. The findings could suggest a shift of TAM-related research findings when applied to mobile technology.

Congruent with Gan and Balakrishnan's study, **Huang, Tang, Lee, and Yang** were interested in investigating elements that could improve mobile learning outcomes. Their findings suggested that continuance intention has a positive influence on mobile learning performance, whereas perceived playfulness has a limited influence. However, the authors cautioned that the importance of perceived playfulness in learning outcomes should not be underestimated, because if learners enjoy mobile learning and would like to adopt it, it is possible that a positive learning performance will result.

Lai and Smith took a different approach to research related to mobile learning, examining students' understandings of informal learning in connection to formal learning. Using a mixed method approach, they conducted their study with postgraduate, undergraduate, and first-year students. Interestingly, the undergraduate and first-year interview participants reported that they engaged in informal learning to support their formal learning, while the postgraduate participants made arbitrary links between their informal learning and formal learning. While it was found that all three groups employed the same digital technologies, such as mobile phones, to engage in informal learning, differences between the groups were found. For example, first-year students make heavy use of social media while postgraduate students tend to draw on traditional forms like seminars.

Although there is increasing research in the area of mobile technology, studies on mobile technology enhanced with digital pens have only recently begun to appear. In the last article, **Maclaren, Wilson, and Klymchuk** used design-based research to conduct their research in the context of mathematically intensive engineering contexts. They highlighted the strong preference of students for the use of pen-enabled tablet PCs as a delivery technology. Researchers keen to further research pen-enabled mobile technology may be interested in exploring whether the same sentiment is found, and whether there are substantial benefits to students' learning, when digital pens alongside mobile technology are used in other learning contexts.

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