Editorial: Volume 31 Issue 3

There has been increasing interest in mixed methods approaches to educational research generally, including educational technology. In recent years AJET has seen an increase in the submission of research using mixed methods approaches. Mixed methods are attractive to many researchers because they have the potential to provide both breadth and depth in the same study. However, combining qualitative and quantitative methods does pose some specific challenges to researchers that need to be considered, and should be reported.

A key issue is the differences in the founding philosophies of qualitative and quantitative methods. Mixed methods researchers argue that these ontological and epistemological differences can and need to be addressed through ongoing discussion and practice (see Creswell 2011 for a discussion of the key controversies). Some critics, however, raise doubt as to whether it is desirable or even possible to reconcile the foundations of qualitative and quantitative research (see for example Giddings, 2006). Clearly, there is a need for researchers adopting mixed methods to consciously consider these issues when conceptualising, justifying, conducting and reporting their studies.

Possible combinations of qualitative and quantitative methods offer a rich variety of designs. Key proponents of mixed methods have sought to bring clarity to approach and develop terminology. For example, Johnson and Onwuegbuzie (2004) distinguish between two types of mixed methods research (mixed-model and mixed-method) and offer an eight-step process. Creswell and Plano Clark (2007) propose four basic mixed methods designs and two further combinations which offer frameworks for describing the relations between qualitative and quantitative components, and rationales for these approaches. Both are useful starting points for those coming new to mixed methods and there is now a growing literature in this emerging area of methodology.

There are some key challenges for researchers, particularly when reporting their findings in journal articles. Clear explanation of the methodology is particularly critical, particularly in describing and justifying the sequence of methods and their relation to one another. One method may be secondary to the other, but it must still be clearly integrated and offer value to the overall study, rather than appearing 'tacked on'. A clear conceptual/theoretical framework can help to do this work. Integration of data must be explained and demonstrated. The challenge of integrating qualitative and quantitative data successfully and convincingly should be not underestimated. There are a number of approaches that can be considered and examples are available in the literature. Ultimately, a coherent 'story' must be fashioned from often disparate sources. A further challenge exists in how to report components of large mixed methods studies. Again, clarity about the overall study design and the reason for isolating a particular set of themes or data source is needed.

In sum, mixed methods approaches have much to offer educational technology research. There are many key research questions in which breadth and depth are needed and which pursuing both in the same study or research agenda would enable a coherence not always evident in our field. We encourage researchers to pursue and critique these approaches to advance understanding of educational technology.

In this issue

This issue includes a wide variety of topics including the role of gender in technology acceptance, cognitive presence and scaffolded reading. The articles draw on a range of research designs including qualitative, quantitative and mixed methods. Several of the papers engage with the ongoing concern around adoption of educational technologies in higher education. In Huang's study, a mixed method research design was used to consider the issue of technology acceptance in terms of learning styles. Here, it was found that student attitude towards using the digital technology was the most important determinant of students' intention to use a collaborative technology, followed by social influence and facilitating conditions. In a different approach, Teo, Fan and Du used a quantitative study to explore issues of acceptance in terms of gender. In their study they found male and female pre-service teachers have comparable perceptions about the usefulness of technology in education, and have similar intentions of using technology in education. However, a point of difference was that female pre-service teachers expected more difficulty, or challenges in using digital technologies. Gender is also the focus of the paper

by Tsai, Liang, Hou and Tsai's study of students in online and face-to-face classes. In this mixed method study it was found that female students adapted to asynchronous learning situations more successfully than male students. In another mixed method study, Deng and Tavares compare the online services of Google Sites and Facebook as learning platforms and conclude that the structure of the former and immediacy of the later are complementary. Taking a different approach to understanding the mediation of technologies in learner engagement, Gutiérrez-Santiuste, Rodríguez-Sabiote and Gallego-Arrufat's quantitative study found that cognitive presence was influenced by social presence more than by teaching presence. Newton and McCunn take a different focus on when digital technologies, in this case lecture capture, are appropriate. They conclude that lecture capture is likely to be beneficial when students perceive a topic to be difficult. This issue also includes Shang's interesting study utilising a quasi-experimental design with quantitative data analysis to investigate the relationship between scaffolded reading and EFL hypertext comprehension. Finally, Carvalho, Dong and Maton take an interesting broader perspective in which they argue that the nature of knowledge, and the various forms knowledge may take, is a neglected aspect of the development of e-learning environments.

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