Designing an Educator Toolkit for the Mobile Learning Age

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ABSTRACT

Mobile technologies have been described as ‘boundary’ objects which enable teachers and learners to transcend many of the barriers such as rigid schedules and spaces which have hitherto characterised traditional forms of education. However, educators need to better understand how to design learning scenarios which genuinely exploit the unique pedagogical affordances of mobile technologies rather than replicating existing patterns and modes of behaviour. This article describes the design and development of a mobile learning toolkit for educators to realise this vision. It presents the theoretical underpinnings for the toolkit and describes the development of different tools, instruments and resources. The main aim of the toolkit is to help teacher educators and teachers build knowledge and understanding of more diverse mobile pedagogical approaches.

KEYWORDS

Education Technology, m-Learning, Pedagogy, Teacher Education, Toolkit

INTRODUCTION

Mobile learning (m-learning) is considered in this paper as learning mediated by handheld devices such as smartphones and tablet computers (Schuler, Winters & West, 2012). The wide range of capabilities of these technologies has created considerable interest amongst educators (Becker et al., 2016) who seek to explore their application for learning. However, recent research suggests teachers tend to default to traditional teaching practices when using mobile devices for pedagogical purposes, focusing on teacher-directed approaches and content delivery (Cochrane & Antontczak, 2014; Kearney, Burden & Rai, 2015). If transformative pedagogies are to be adopted, educators need to better understand how to design m-learning experiences which genuinely exploit the unique affordances of mobile technologies.

In teacher education, staff are engaging with mobile pedagogies, responding to the rapid adoption of m-learning in schools (Herrington, Ostashewski, Reid & Flitoff, 2014; Newhouse, Cooper & Pagram, 2015). The challenge for teacher educators is to model exemplary practices and facilitate pre-service teachers’ (PSTs’) ability to enhance their own mobile pedagogies. There is a need for teacher educators to support PSTs’ learning through a wider range of m-learning activities, such as more in-situ learning contexts, greater consideration of student agency and more use of networked and virtual conversations to share practices beyond the immediate vicinity and access of external expertise (Burden & Kearney, 2017). There is also a need for greater exemplification of how teacher educators use mobile devices to model and practise approaches relevant to K-12 teaching and learning (see for example, Naylor & Gibbs, 2015). There is a shortage of pedagogical and theoretical models that can guide teacher educators in designing m-learning experiences, and a need to develop a shared

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language for describing emerging pedagogies (Herrington et al., 2014). Indeed, practical strategies are required that will support teacher educators in fully exploiting mobile learning (Baran, 2014).

This paper discusses the design and development of a mobile learning toolkit (http://www.mobilelearningtoolkit.com/) that aims to translate these ideas into practice.

BACKGROUND

Pedagogic Toolkits

Pedagogic toolkits have been promoted as ideal resources for educators to become more engaged with new, challenging areas of teaching (Oliver & Conole, 2000) particularly in the area of digital pedagogies. They typically focus on teachers’ professional learning about designing pedagogy—in the case of our toolkit, designing and implementing effective mobile pedagogies—providing resources and strategies (‘tools’) to support teachers in addressing pedagogical problems in their own teaching contexts. In this way, toolkits can be viewed as bringing “best practice within the reach of all practitioners in a usable format” (p. 36), and a conduit for professional engagement in new pedagogical domains.

Toolkits assume a ‘just-in-time’ approach and generally promote flexible engagement by the user, in contrast to more traditional, linear-structured manuals or cookbooks, and also distinct from more prescriptive, scaffolded digital templates and wizards that incorporate a ‘just-in-case’ approach (Conole & Oliver, 2002). However, toolkits are more open-ended and adaptable than this type of template approach (Conole & Fill, 2005), providing support to teachers beyond surface-level guidance.

The core element of educator toolkits is the theoretical underpinning. Hence, use of a pedagogic toolkit aims to support educators making theoretically-informed decisions about appropriate pedagogies. Any ‘claims’ in a pedagogic toolkit for teachers, such as claims of ‘best practice’ or ‘good learning’, can therefore be interpreted through the lens of the toolkit’s underpinning theory. Apart from this foundational theoretical overview, other toolkit elements include strategies and mediating tools for the user to engage with the espoused theory.

Examples of Toolkits Supporting Digital Pedagogies

There has been a growing number of pedagogic toolkits designed and developed for supporting teachers’ effective use of new and emerging learning technologies. Bowe and Winter (2014) discuss the development of their ‘technology toolkit’ for PSTs for supporting development of digital pedagogies. Their toolkit had a major focus on a selected set of teaching strategies incorporating educational technologies. Botha and Herselman (2015) described the design and application of a ‘teacher tablet toolkit’ for the professional development of rural teachers, enabling them to use mobile devices to support teaching and learning in their classrooms. The resulting toolkit focused on pragmatic pedagogical and technology knowledge, skills and practice-based experience. Simulation and game design were key themes. While Lim and Pannen (2012) designed a ‘capacity building toolkit’ to be used by teacher education institutions to build their capacity for developing PSTs’ digital competencies. It provided a set of tools for institutions in the Asia Pacific region to conduct needs and situation analyses of the current state of ICT use in their teaching and administration; and aimed to support the development of institutions’ strategic plans to build this capacity in their programs.

Other toolkits for teachers in the area of educational technology integration include toolkits for media and resource selection, evaluation and information management (Conole & Oliver, 2002), and learning design (Conole & Fill, 2005). Learning analytics was the focus of a toolkit designed and tested by Dyckhoff et al. (2012). They introduced ‘eLAT’, an exploratory Learning Analytics Toolkit supporting teachers’ use of data to monitor and analyze their teaching activities.
How Students in a First-Year Composition Course Respond to the Flipped Classroom

An Integral Approach to Active Learning in Mathematics
Chris L. Yuen and Veronika Bohac Clarke (2016). Handbook of Research on Active Learning and the Flipped Classroom Model in the Digital Age (pp. 177-194). www.igi-global.com/chapter/an-integral-approach-to-active-learning-in-mathematics/141003?camid=4v1a