Exploring the Use of Mobile Devices to Support Teacher Education

Jocelyn Wishart
University of Bristol, UK

INTRODUCTION

Mobile learning has been clearly identified as an agenda in need of research (Rushby, 2012) however, it appears that there is some way to go yet before teachers will confidently open up their classrooms to students carrying personal, handheld devices, whether mobile phones, iPods or Personal Digital Assistants (PDAs). One of the reasons for this is that teachers themselves tend not to have been taught as mobile learners nor how to teach with mobile devices; others relate to the classroom context itself (Terras & Ramsay, 2012) and the disruptive nature of mobile technology (Sharples, 2002). As will be seen, this has consequences for those researching innovations in teaching and learning technology and this chapter provides evidence of the way the school based learning environment affects teachers' responses to initiatives set up to explore teaching and learning with mobile devices. It is set in the context of a series of teacher education research initiatives funded by the UK Training and Development Agency for Schools (TDA) that were intended to raise teacher trainees' awareness of and competence in managing effective learning opportunities with new technologies. It presents an overview of a series of small-scale investigations aimed at identifying the potential of handheld mobile devices, mostly PDAs (early Smartphones), in supporting pre-service teachers with both their teaching and learning whilst on placement in schools.

CURRENT SCIENTIFIC KNOWLEDGE IN USING MOBILE PHONES FOR TEACHER EDUCATION

Pre-service teachers (initial teacher trainees) in the UK are more than likely to be university or college students dividing their time between studying more theoretically in higher education institutions and more practically on work placement in schools. Thus a considerable part of their learning (current UK government regulations require at least two-thirds of the national one year postgraduate teacher training programme to be based in schools) takes place in the workplace context. Benefits to workplace learning from giving university and college students access to internet enabled PDAs or Smartphones had been identified in the early 2000s by both the EU funded, global Mobilearn project (see http://www.mobilearn.org/) and the UK's Joint Information Systems Committee (JISC). The JISC review of innovative practice with e-learning in further and higher education (JISC, 2005) suggested that the portability, any time, any place connectivity and immediacy of communication of mobile devices were key to their success. For example, having PDAs was seen to enable flexible and timely access to the university's e-learning resources and immediacy of communication through voice call, texting or email, all of which were reported to lead to empowerment of and more effective management of learning (especially in dispersed communities such as those found in initial teacher education).

A more theoretical approach arose out of the Mobilearn project which involved 24 partners from Europe, Israel, Switzerland, USA and Australia in exploring context-sensitive approaches to informal, problem-based and workplace learning. This was one of the earliest mobile learning projects to involve Professor Mike Sharples (Sharples, 2002) now with the Open University, UK. Other pioneers in the field include Professor Agnes Kukulska-Hulme, also of the Open University and Professor John Traxler of Wolverhampton University who together edited the first handbook of mobile learning (Kukulska-Hulme & Traxler, 2005). At the time Professor Sharples was with University of Birmingham and he and his colleagues: Laura Naismith, Peter Lonsdale and Giasemi Vavoula's contributions to this project led them being asked to produce a review of the then current state of mobile learning research for Futurelab (Naismith et al, 2004). Many of the above scholars are still leaders in the topic of mobile learning. In this early review, they classified effective mobile learning activities (including those conducted with children and the general public as well as university and college students) by their underpinning ethos. Four of the resulting categories are linked to aspects of learning theory:

- Behaviourist, as using PDAs and/or mobile phones is rewarding,
- Constructivist, as handheld devices allow students to build knowledge through bringing together information from different locations,
- Situated, as the built knowledge is authentically situated in a relevant context and
- Collaborative, as any time, any place communication enables increased collaborative learning opportunities.

Two further categories relate more to context of the learning activity and method of application:

- Informal and lifelong learning and
- Learning and teaching support.

It is this last area of learning and teaching support that is the subject of this chapter. It is particularly relevant to initial teacher education where students move between university and school based practice and are expected to acquire, decipher and understand a wealth of information, both pedagogical and practical, in the process. This information may come from dedicated software, electronic books, or the Web, especially via the course linked Virtual Learning Environment (VLE), or from previously recorded pupil data or via communications with peers and tutors. In particular, the students need access to the documentation of the various UK statutory requirements for schools including the National Curriculum and information to supplement their subject knowledge such as data, vocabulary and teaching resources. Additionally the national requirement that postgraduate trainee teachers spend 24 of the 36 weeks of their programme in a partner school rather than in the university makes access to conventional information sources for students such as the university library difficult. Then there is the documentation associated with being on a teacher education programme such as timetables, assessment guidance, pupil mark books, lesson observation records and lesson plan proformas.

Also, whilst the trainees are directly supported by a mentor from the school when on placement, their university tutor needs feedback on their progress and to assure themselves of their wellbeing. Access to email and the internet has become central to managing this however, whilst all community schools in England now have internet connected desktop computers or laptops, our experience is that the socio-cultural context within the schools means that trainee teachers are reluctant to use these. They tend to be perceived as belonging to the students or other members of staff. Providing trainee teachers with handheld mobile devices such as PDAs was seen by the project team as a way of resolving this issue. Lastly, the use of mobile, handheld technologies for teaching and learning support is particularly relevant to the trainee teacher, who is expected to teach as well

Related Content

A Netnographic Approach on Digital Emerging Literacies in the Digital Inclusion Program AcessaSP - Brazil
Rodrigo Eduardo Botelho-Francisco (2016). *Handbook of Research on Comparative Approaches to the Digital Age Revolution in Europe and the Americas (pp. 236-263).*
www.irma-international.org/chapter/a-netnographic-approach-on-digital-emerging-literacies-in-the-digital-inclusion-program-acessasp---brazil/138036

Building and Bridging Security and Privacy-Related Technical Knowledge Amongst HR Professionals: A Review in the Context of Industry 4.0
Anuragini Shirishand Priya Jyoti (2022). *International Journal of Technology and Human Interaction (pp. 1-15).*
www.irma-international.org/article/building-and-bridging-security-and-privacy-related-technical-knowledge-amongst-hr-professionals/306225

The Relevance of Teamwork in Software Startups
Fernando Almeida (2019). *International Journal of Systems and Society (pp. 29-46).*
www.irma-international.org/article/the-relevance-of-teamwork-in-software-startups/253823

A Research Framework for Investigating the Benefits of Technology in Treatment and Management of ADHD in Tertiary Students
Bader Binhadyanand Bill Davey (2017). *Gaming and Technology Addiction: Breakthroughs in Research and Practice (pp. 60-77).*
www.irma-international.org/chapter/a-research-framework-for-investigating-the-benefits-of-technology-in-treatment-and-management-of-adhd-in-tertiary-students/162512

Group Decision Making in Computer-Mediated Communication as Networked Communication: Understanding the Technology and Implications
Bolanle A. Olaniran (2009). *Human Computer Interaction: Concepts, Methodologies, Tools, and Applications (pp. 1849-1863).*
www.irma-international.org/chapter/group-decision-making-computer-mediated/22355