Chapter 10
The Genesis and Development of Mobile Learning in Europe

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ABSTRACT

In the past two decades, European researchers have conducted many significant mobile learning projects. The chapter explores how these projects have arisen and what each one has contributed, so as to show the driving forces and outcomes of European innovation in mobile learning. The authors identify context as a central construct in European researchers' conceptualizations of mobile learning and examine theories of learning for the mobile world, based on physical, technological, conceptual, social and temporal mobility. The authors also examine the impacts of mobile learning research on educational practices and the implications for policy. Finally, they suggest future challenges for researchers, developers and policy makers in shaping the future of mobile learning.

INTRODUCTION

Mobile learning has evolved from a researcher-led, specialist endeavour, to an everyday activity where mobile devices are personal tools helping people learn wherever they are, through formal training or informal support and conversation (Kukulska-Hulme et al., 2007). Even so, the effective design and development of mobile learning applications and experiences, and their evaluation, are still core activities where specialist expertise, and the initiatives and insights of teachers and

learners, have important roles to play. From our perspective as researchers based in Europe, we consider it valuable to highlight and synthesize the innovative design, development and evaluation practices that have characterised European projects over the past two decades. We see this as a step towards building up a more detailed picture of how the field of mobile learning is developing in various parts of the world, given that motivations and conditions are often very different (Rao & Mendoza, 2005; Abdel-Wahab & El-Masry, 2010).

Our expertise in mobile learning includes the founding and current Presidency of the International Association for Mobile Learning and leadership of, or substantial involvement with, major projects and studies including HandLeR (Sharples, 2000; Sharples, Corlett & Westmancott, 2002), MOBILearn (Lonsdale et al., 2004), Mobile Learning Organiser (Corlett et al., 2005), Caerus (Naismith, Sharples & Ting, 2005), Case Studies in Innovative e-Learning Practice (Kukulska-Hulme, 2005), Mobile Learning Landscape Study (Kukulska-Hulme et al., 2005), Myartspace (Sharples et al., 2007a; Vavoula et al., 2007; Vavoula et al., 2009), Personal Inquiry (Anastopoulou et al., 2008; Scanlon et al., in press), MUSIS (Milrad & Jackson, 2008), the Treasure Hunt (Spikol & Milrad, 2008), AMULETS (Kurti et al., 2008), The mobileDNA (Arnedillo-Sánchez, 2008; Byrne, Arnedillo-Sánchez, & Tangney, 2008), LET´S GO (Spikol et al., 2009; Vogel et al., 2010) and MOTILL (Arrigo et al., 2010).

As mobile learning continues to challenge the boundaries imposed by traditional classroom learning, it raises questions about its significance in relation to wider ambitions to improve education and exploit technology in furthering that aim. What shifts in pedagogical and theoretical perspectives have been observed? To what extent are e-learning policy and initiatives taking account of research project results and the potential of mobile learning? We examine the evidence, and highlight issues and barriers to more widespread uptake, such

as provision of teacher training. Throughout the chapter, we identify more general lessons learnt from European mobile learning R&D to date. Although rooted in European research, the particular ways of thinking about technology, design or evaluation, may be transferable elsewhere – we leave it to other researchers and practitioners to make those judgments.

The chapter starts with a review of five projects that have shaped research and development of mobile learning in Europe: HandLeR, MOBILearn, M-Learning; and two projects funded under the Leonardo da Vinci Programme. These projects were not only influential in demonstrating the value of mobile technology for learning, they also provided an opportunity to devise and debate theoretical foundations for a new pedagogy and practice of mobile learning, outlined in the next section. A change in emphasis, away from design of educational software for portable devices and towards socio-technical support for the mobility of learners, led to a more expansive framework for mobile learning and a set of innovative projects across a wide range of physical, institutional and social settings. The section entitled 'Recent Mobile Learning Projects' presents a representative selection of these projects, organised by the setting of the learning. Having indicated the scope of current European research into mobile learning, the Discussion section reviews findings from the projects in relation to designs for learning with personal technologies across contexts. With regard to mobile learning in school settings, future success will depend on the preparedness of teachers to adopt mobile technologies in and beyond the classroom, thereby enabling the expansion of school learning. In the section on 'Teacher Development' we discuss the relations between research, practice and policy, including the implications for teacher training and development. Taking a broader perspective, the impact of mobile learning in Europe has both shaped and been formed by national and European policy and this is discussed in a section on Education

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