

## Chapter 54

# Evaluating a Mobile and Online System for Apprentices' Learning Documentation in Vocational Education: Usability, Effectiveness and Satisfaction

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### ABSTRACT

*In Switzerland, 99% of teenagers own a mobile phone and use it as their primary spare-time activity. Exploiting the affordances that mobile devices have for fostering learning across contexts is therefore imperative for the educational community. This is especially true in the case of dual vocational education and training (VET) – a field under-investigated with respect to mobile learning – where apprentices alternate between a company and vocational school. After introducing the major issues characterising mobile learning and their relevance to the VET context, the paper presents a project involving apprentice chefs and their teacher, with the aim of exemplifying and exploring VET learning between workplace and classroom, as a conversation between the learner, the teacher and the in-company trainer, and to evaluate the results of its implementation in terms of usability, effectiveness, and satisfaction.*

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## **INTRODUCTION**

The estimated number of cellular phone subscriptions worldwide is 6,915 million units. In Europe, this amounts to some 124.7% of people owning a mobile phone (International Communication Union, 2014). A Swiss sample (n=1177) showed that 99% of teenagers between 12 and 19 own a mobile phone (Willemse et al., 2012) and that “to use the cell phone” is their favourite spare-time activity. Given this premise, it is imperative for researchers in education to exploit the affordances (Kirschner, 2002) of mobile devices to foster learning, for example the possibility to learn across contexts. This is particularly important in Vocational Education and Training (VET), especially in those VET systems that require students to alternate between two or more learning locations. Mobile learning studies have most frequently concentrated on higher education, followed by elementary schools and high schools (see meta-analysis by Wu, Wu, Chen, Kao, & Lin, 2012). However, to the best of our knowledge, no studies in the field of initial VET have been reported, save for in the traditional framework of delivering content (Hwang & Tsai, 2011; Kukulska-Hulme, Sharples, Milrad, Arnedillo-Sánchez, & Vavoula, 2011). In what follows, we will introduce mobile learning through a short review of the recent literature and the specificities of VET as the context where the present study has been implemented. Finally, we will evaluate a mobile learning project implemented in Switzerland, using Sharples' (2009) mobile learning evaluation framework model as a reference (see also Sharples, Arnedillo-Sánchez, Milrad, & Vavoula, 2009).

## **DEFINING MOBILE LEARNING: MOBILE DEVICES, LEARNERS AND (SOCIO-CULTURAL) CONTEXTS**

A universally shared definition of “mobile learning” is not possible (Berking, Haag, Archibald, &

Birtwhistle, 2012; El-Hussein & Cronje, 2010). However, some attempts have been made to more sharply define what mobile learning actually is. These attempts move from the first definitions, focusing on technology, to the more up-to-date, where technology is more off-stage and the learner or learning itself is on the stage, to the now generally accepted definition by Crompton, Muilenburg, and Berge, who define m-learning as “learning across multiple contexts, through social and content interactions, using personal electronic devices” (Crompton, 2013, p.4).

We fully acknowledge this definition but, for the sake of the paper, we will briefly summarise the three major phases of mobile learning, passing from a focus on devices, to a focus on learning outside the classroom, to a focus on the mobility of the learner and on informal/lifelong learning.

## **Mobile Devices and Their Affordances**

From the earliest definitions (e.g. Quinn, 2000), a still existing trait of mobile learning included a focus on “the use of wireless-enabled mobile digital devices” (Cochrane, 2010, p.134; see also Orr, 2010). Along this path, many scholars started by identifying the main affordances of mobile devices (e.g. Sharples, 2000; Pea & Maldonado, 2006; Lai, Yang, Chen, Ho, & Chan, 2007; Klopfer & Squire, 2008; Pachler, Bachmair, & Cook, 2010; Wright & Parchoma, 2011; Song, 2011), citing characteristics such as portability, availability anytime and anywhere, individuality, ownership, computing power, small screen size, ease-of-use, adaptability, accessibility, multimedia convergence, connectivity, social interactivity, context sensitivity, location awareness, and others. Lai et al. (2007) offer a sort of synthesis of these affordances, suggesting the two major ones to be (1) the real-time information access (whenever and wherever needed) and (2) the rapid-access interface for note- and photo-taking and sound- and video-recording.

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