Chapter 72
Ubiquitous Teachers' Training and Lessons Learned With the *uProf!* Model

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ABSTRACT

This chapter illustrates features and outcomes of the experiences with uProf!, a model for teachers' professional training in ubiquitous learning by tablets and quick response (QR) codes. The model was designed, implemented, and successfully validated in 2012 within a full-immersion, learner-centered, and metacognitive course for 80 Italian high school teachers who are part of a school network for the enhancement of curriculum continuity from middle into high school. Later on, uProf! was used to provide continuous professional training and tailored in-class tutoring during these teachers' first implementations of technology-enhanced learning experiences.

INTRODUCTION

The current landscape of open and smart learning challenges calls for disruptive educational policies and systems (Li, Chang, Kravcik, Popescu, Huang, Kinshuk & Chen, 2015; Middleton, 2015). All stakeholders (i.e., policy makers, educational institutions, teachers, learners, parents) have renewed roles and degrees of participation in the learning process. Undeniably, though, teachers are on the frontline. On the one hand they are required to absorb their shifting function into facilitators in technology-enhanced learning environments, and on the other hand they are pressured to become more aware lifelong learners.

This technological uptake and consistent change and innovation have been urged by the decisively faster pace that economic systems, social relations and individuals have had since the diffused embracing of Web 2.0, that is the web of social networking tools (Leone & Guazzaroni, 2010), towards Web 3.0, that is a more connected, open and intelligent network thanks to semantic applications (Spivack, 2013).

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Definitely, living, working and learning are smarter and smarter, that is they seamlessly accommodate next generation technology (i.e., smartphones, tablets, tablet PCs, sensor network nodes, contact-less smart cards, RFID and QR codes), socialised (Leone & Biancofiore, 2015), and ubiquitous, that is wireless and characterised by high mobility and embeddedness (El-Bishouty, Ogata, & Yano, 2007; Leone & Leo, 2011a). Most European countries have made significant investments over the last years with a view to ensuring universal access to information and communication technologies (ICT), with considerable success (Education, Audiovisual and Culture Executive Agency, 2011). Specifically, embedding ICT in education and training systems has required relevant changes across the technological, organisational, teaching and learning environments of classrooms, workplaces, and informal learning settings; further efforts, though, are required in this direction (European Commission, 2008; Education, Audiovisual and Culture Executive Agency, 2011). A precondition for using computers in educational contexts is that they are widely available and users are familiar with them. With reference to formal education, data (Education, Audiovisual and Culture Executive Agency, 2011) show that currently no great disparity between schools in availability of ICT equipment exist, but a lack of educational software and support staff still affect instruction. Thus, the solution to an effective use of ICT in education and training is not technology itself, but an advancement in understanding how smart technologies are and can be used to support learning, and what are the barriers in the way of success.

Being an ICT-integrating teacher means going beyond ICT skills, and developing an understanding of the complex relationships between pedagogy, content and ICT (Alayyar, Fisser & Voogt, 2012). Moreover, while in most European countries centrally promoted online resources and general pedagogical support are available to guide teachers' practical implementation of innovative technology-enhanced learning in the classroom (according to TIMSS - *Trends in International Mathematics and Science Study 2007*) (Education, Audiovisual and Culture Executive Agency, 2011), no research literature seems to document the activation of tailored in-class techno-pedagogical tutoring to teachers during the implementation. A later study carried out on behalf of the European Commission (Pelgrum, 2010) shows that teachers often have difficulties in implementing ICT in the teaching-learning process and that they need support to accomplish this task. Finally, the outcomes of more recent research experiences (Leone, 2013) highlight that teachers perceive in-class techno-pedagogical tutoring as a basic need for the enhancement of their professional skills and, as a result, of their students' learning.

This article illustrates features and outcomes of the experiences with *uProf!*, a model for teachers' professional training in ubiquitous learning by tablets and Quick Response (QR) codes. The model was designed, implemented and successfully validated in 2012 within a full-immersion, learner-centred and metacognitive course for 80 Italian high school teachers who are part of a school network for the enhancement of curriculum continuity from middle into high school. Later on, *uProf!* has been used to provide continuous professional training and tailored in-class tutoring during these teachers' first implementations of technology-enhanced learning experiences.

BACKGROUND

Ubiquitous devices allow to create a Computer Supported Ubiquitous Learning (CSUL) environment. A CSUL could be embedded in everyday life (Ogata & Yano, 2004) and is characterised by permanency, accessibility, immediacy, interactivity, situatedness and adaptability (Curtis, Luchini, Bobrowsky,