Mobile Testing System for Developing Language Skills

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INTRODUCTION

Recent research demonstrated that language skills can be enhanced through mobile technologies that transformed drastically foreign language learning/teaching experience offering immediate diagnosis of learning problems and design of new assessment models (Cooney & Keogh, 2007); creating mobile networking collaboration (Lan, Sung & Chang, 2007; Pemberton, Winter & Fallahkhair, 2010), enhancing autonomy (Murphy, Bollen & Langdon, 2012); providing instant feedback and a personalized learning experience (Voelkel & Bennett, 2013; Oberg & Daniels, 2013); enabling teachers to create new formats of problem-solving tasks based on augmented reality (Cook, 2010; Driver, 2012).

But in spite of the plethora of research in the area of mobile learning, it challenges instructors to examine how the pedagogical potential provided by mobile technologies relates to their teaching aims, methods, and subject matter because there is not yet consistent MALL methodology. There is a need for a new educational framework for mobile testing apps implementation aimed at developing learner skills rather than just assessing learner knowledge. The hypothesis to guide the framework of this research includes enquiry-based learning pedagogy and educational opportunities provided by ubiquitous devices such as interactivity and immediate feedback. This study supported by both current m-learning theory and enquiry-based approach focuses on working out a methodological framework for mobile testing system implementation into the language classroom.

BACKGROUND

Today teachers who would like to meet the expectations of a new generation of mobile natives need to follow a transformational approach (Puentedura, 2011) to the development of language skills based on creative use of mobile technologies within the learner-oriented environment. The main prerequisite of this environment functioning is collaborative peer-learning approach. The social framework, learners' expertise, and cultural practices are gaining importance, the role of the devices is becoming less important. Mobility is no longer defined through the devices, but through "the learners' abilities to act flexibly in ever changing and self-constructed learning contexts" (Seipold, 2011, p.32). Seipold argues that only if teachers provide spaces to learners to act according to their interests, agency, and cultural practices, innovative use of the devices can be discovered by learners (2011).

The research framework is also based on Mishra and Koehler's model for implementing new technologies into teaching - Technological Pedagogical Content Knowledge (TPCK)(2006). This approach suggests teachers should be aiming to reach a point where their traditional content and pedagogical knowledge is enhanced by technological knowledge. According to TPCK framework, a new tool complements teachers' knowledge and skills. This theoretical perspective suggests that learning is affected and modified by the tools employed for it and that reciprocally these tools are adjusted in the way they are used for learning. As Stockwell and Hubbard argue: "Let the language

learning task fit the technology and environment, and let the technology and environment fit the task" (2013, p.9). The Substitution Augmentation Modification Redefinition model developed by Puentedura (2011) can be used as a complement to TPCK. According to this model the use of new tech tools in education may lead either to the enhancement of education (augmentation and substitution phases) or to the real transformation (redefinition and modification phases). Redefinition is the highest transformation phase which allows for a completely new format of tasks and activities that were previously impossible. This approach also offers a perspective in which the pedagogical considerations shape the design of mobile learning.

Other important theories that have been influential to work out the framework of this research are enquiry-based learning and behaviorist approach. Many researchers today highlight social aspects of mobile technologies proposing complex structures of m-learning pedagogy built on Vygotsky's hypothesis about the importance of discussions in an educational context (Sharples, Taylor, & Vavoula, 2007). Enquiry-based learning is a shift away from passive methods to the problem-based methods through which students are expected to construct their own knowledge and understandings by taking part in supported processes of enquiry (Kahn & O'Rourke, 2005).

Danaher, Gururajan, and Hafeez-Baig (2009) propose the m-learning structure based on three principles: engagement, presence, and flexibility. Presence is characterized as an interaction which is sub-divided into three types: cognitive, social and teaching. Kearney, Schuck, Burden and Aubusson (2012) argue that the main constituents of m-learning pedagogy are personalization, authenticity, and collaboration. Mobile technologies enable instructors to create collaboration environment that motivates students to learn for themselves, bringing a research-based approach to the subject. This interactive, "dialogic models of learning are similar to the processes of participation in research" (Sambell, 2010, 56).

Ubiquitous access to information via mobile devices potentially enables a paradigmatic shift in education, it changes the way classes are managed and the instructor's role (Beatty, 2004). Kahn and O'Rourke (2005) argue that enquiry-based learning encourages students to seek out new evidence for themselves and support peer learning approach. This approach implies a principal change in the paradigm of teaching due to the fact that mobile devices effectively "act as accelerators of the social discourse" (DeGani, Martin, Stead, & Wade, 2010, p.181).

THE PEDAGOGICAL POTENTIAL OF THE MOBILE TESTING SYSTEM PELE TO ENHANCE LANGUAGE LEARNING

The mobile testing system PeLe for handheld devices, developed at Sør-Trøndelag University, enables instructors to deliver a test through any mobile device, assess it and provide timely feedback to both individual students and a group of students immediately after a test. Using Pele students can respond to tests electronically and the teacher can see on the screen what is happening during the test. The technological characteristics and the pedagogical potential of PeLe are summed up in table 1.

PeLe suits perfectly to evaluate both group dynamics and individual student results, it was primarily used in our research for *formative assessment* or low stake assessment which serves to give learners feedback on their performance (Sambell, 2010).

METHODOLOGY

Research Objectives

Mobile Language Learning (MOBILL) was an international project involving two institutions Sør-Trøndelag University College (HiST, Norway),

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