

Pedagogical frameworks and principles for mobile (language) learning to support related teacher education

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Abstract. In this paper results of the EU projects ‘Designing and Evaluating Innovative Mobile Pedagogies’ (DEIMP, <http://www.deimpeu.com/>) and ‘Mobilising and Transforming Teacher Educators’ Pedagogies’ (MTTEP, <http://www.mttep.eu/>) are presented. Two key outputs, the Mobile Learning Toolkit and its iPAC framework (MTTEP) and the principles for innovative mobile learning (m-learning, DEIMP), both targeted at stimulating pedagogically sound m-learning practices in teacher education and schools, are highlighted. To enhance these general pedagogical resources for use in professional development activities specifically for language teachers and teacher educators, I refer to some currently available frameworks and guidelines for Mobile Assisted Language Learning (MALL) and teaching.

Keywords: MTTEP, mobile learning, iPAC framework, MALL, DEIMP.

1. Introduction

The Erasmus+ projects DEIMP (2017-2020) and its predecessor MTTEP (2014-2017) could contribute both to implementing m-learning in (language) teacher education and to enhancing the innovative quality of current and future practices using mobile devices in schools.

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2. The projects' outputs

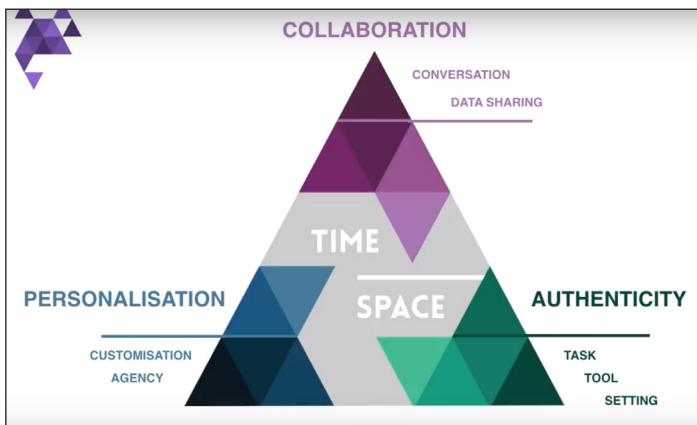
2.1. The MTTEP project²

The key result of the MTTEP project is the Mobile Learning Toolkit (<http://www.mobilelearningtoolkit.com/>). It is designed for teacher educators and trainers to support teachers in better understanding how they can pedagogically enhance the learning activities they design by including the use of features and functionalities specific for mobile devices. Its core content is a pedagogical model (the iPAC framework) supporting the design and evaluation of meaningful and authentic m-learning pedagogies.

2.1.1. The iPAC framework

The iPAC framework, based on an internationally validated model for m-learning (Kearney, Schuck, Burden, & Aubusson, 2012), identifies the specific pedagogical features or affordances of mobile devices that make learning distinctive (Figure 1). These are referred to as the 'signature pedagogies' of m-learning and they consist of three principal constructs: personalisation, authenticity, and collaboration. Below I briefly describe these principal constructs and their respective operational subconstructs.

Figure 1. The iPAC framework (<http://www.mobilelearningtoolkit.com/ipac-framework.html>)



2. The iPac framework and constructs are reproduced with kind permission of Kevin J. Burden (<http://www.mobilelearningtoolkit.com/ipac-framework.html>).

2.1.2. *The iPAC constructs*

A. Personalisation (and the subconstructs agency and customisation)

Personalisation, a key benefit of m-learning, includes pedagogical features such as learner choice, agency, self regulation, and customisation. In well designed m-learning activities, students have greater control over the place (physical or virtual), pace and time they learn, and can enjoy autonomy over their learning content. Goals are set by learners making the learning activity more personalised (agency) and therefore more engaging (c.f. non formal mobile activities such as game-playing. Apps and context awareness of mobile devices are used to tailor the learning experience to the needs of individual learners (customisation).

B. Authenticity (and the subconstructs setting, task, and tool)

Mobile technologies support authentic learning through the setting, the task, and the tool. Settings can be both physical (field trip, museum visit) and virtual (networked activities) enabling learners to experience what it is like to learn *in situ*. Setting is closely linked to both the task and tools learners are engaged with. Task authenticity refers to the extent to which tasks are realistic and offer problems encountered by real-world practitioners. Tool authenticity relates to the apps and tools students are using and how far they replicate those of real-world practitioners.

C. Collaboration (and the subconstructs conversation and data sharing)

M-learning allows students to enjoy a high degree of collaboration by making rich connections to other people and resources mediated by a mobile device. Social interaction, conversation, and dialogue are fundamental to Vygotskian learning. Sharing conversational spaces mediated by mobile devices can be conducive to timely, personally tailored feedback from teachers, as well as rich peer interactions, leading to learners' negotiated meaning-making (conversation). In shared, socially interactive environments, learners can consume, produce, and exchange information and (self generated) resources with peers, teachers, and other experts (data sharing).

Other components of the toolkit are: explainer videos; a survey tool enabling practitioners to measure their current use of mobile technologies and their students'

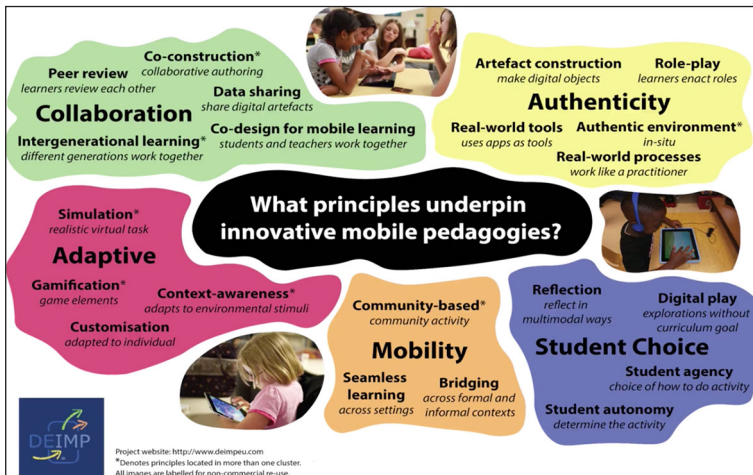
experiences of m-learning; exemplar eBooks that illustrate the use of mobile technologies in teacher education; and a rubric for evaluating the value and use of apps in different educational contexts.

Combined, these Mobile Learning Toolkit materials offer a rich set of resources to design professional development activities for initial and inservice teacher education to deepen understanding of the proposed constructs and promote related teachers’ design and evaluation competences.

2.2. The DEIMP project

The Erasmus+ project DEIMP (2017-2020) aims to research the concepts of innovative and disruptive design for m-learning (for a discussion see [Kearney, Burden, & Schuck, 2018](#)) by means of action research on m-learning scenarios in diverse educational contexts ([Figure 2](#)). Planned outputs include a systematic literature review, a MOOC, and an app to explore and share inspirational practices. The literature review and its related Delphi research show “that innovation can occur to varying degrees across [...] four criteria to result in effective student learning outcomes and engagement” ([Burden, Kearney, Schuck, & Hall, 2019](#), p. 96). The criteria likely to be useful to practitioners as a basis for designing effective mobile activities concern the nature of the task, its context, the relationship between teacher and student, and student agency ([Burden et al., 2019](#), p. 96).

Figure 2. Visualisation of principles for innovative m-learning³



3. <http://www.deimpeu.com/principles-of-innovative-mobile-learning.html>

3. MALL specific resources

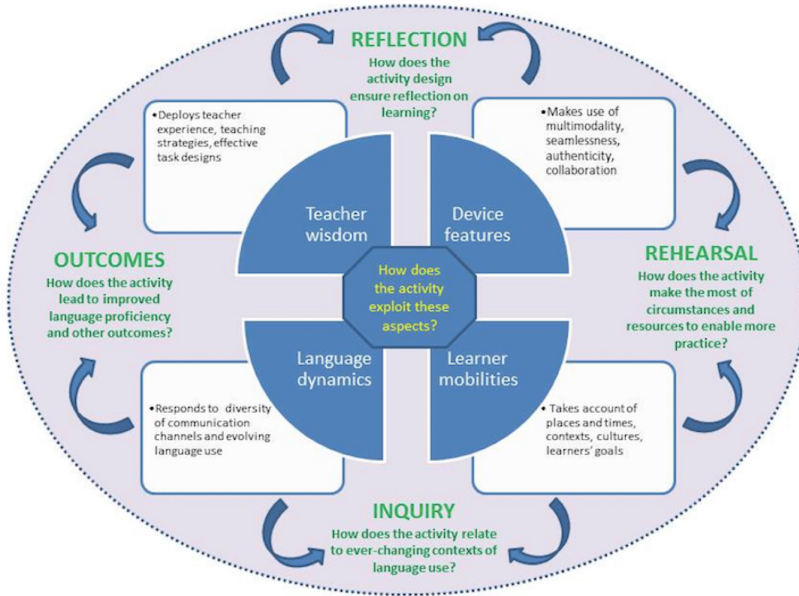
To meet the professional development needs of (student) teachers of specific disciplines/content areas, further contextualisation of the m-learning principles presented above is needed. Below a number of relevant resources for m-learning in modern language education are listed. Evidently, as also reported by the authors of these resources, discipline-specific frameworks incorporate insights from a number of related knowledge domains, such as general instructional design principles and pedagogical approaches. In the case of MALL, these are general principles for m-learning (such as the iPAC framework), computer assisted language learning, and Second Language Acquisition (SLA) insights.

Due to space limitations I only briefly summarise key contents and characteristics of these MALL guidelines. The ten MALL principles proposed by [Stockwell and Hubbard \(2013\)](#) raise awareness of relevant issues across three (interrelated and overlapping) domains: physical, pedagogical, and psycho-social implications and considerations when introducing m-learning in language education. These guidelines and caveats can support the planning and implementation of mobile language learning initiatives.

In [Kukulska-Hulme, Norris, and Donohue \(2015\)](#), an activity design framework is described aiming to support “the language teacher [in redefining] the ‘language lesson’ and the teacher-learner relationship when the boundaries between the classroom and the outside world are dissolving” (p. 7). [Kukulska-Hulme et al.’s \(2015, p. 8\)](#) proposed model contains four ‘spheres’ ([Figure 3](#) below) and their connecting concepts (reflection, rehearsal, inquiry and outcomes) with the central question: how does the activity exploit these aspects?

- *teacher wisdom*: the teacher’s personal role and experience in enacting pedagogy (effective teaching strategies and task design);
- *device features*: enabling multimodal communication, collaboration, and rehearsal;
- *learner mobilities*: places and times for learning, students’ personal goals, contexts, and cultural settings; and
- *language dynamics*: the dynamic character of language, with technology facilitating new opportunities for teaching and communication.

Figure 3. Presentation version⁴ of a pedagogical framework for MALL (based on Kukulska-Hulme et al., 2015, p. 8)



Other resources described in the publication include a further explanation of the concept ‘mobile pedagogy’, mobile activities to try out, a template for mobile activity design, and examples of useful apps.

Although usable for developmental purposes Reinders and Pegrum (2015) designed their framework primarily to support the evaluation of MALL resources. The framework offers rubrics to evaluate the learning designs of both mobile materials (such as dedicated web services and content-specific apps) and mobile activities (activities designed around websites or apps) with respect to five categories:

- category 1: exploitation of the potential educational affordances of mobile devices;
- category 2: correspondence to general pedagogical approaches;
- category 3: correspondence to specific L2 pedagogical approaches;

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- category 4: correspondence to SLA principles; and
- category 5: implementation of affective principles.

In their article, the authors elaborate on these categories and provide an exemplary peer evaluation of a practice case.

4. Conclusion

Several iPAC framework constructs and principles for innovative m-learning (e.g. authenticity, collaborative learning, student choice) are also part and parcel of current pedagogical approaches in modern foreign language education. In our view they can support both cross curriculum and discipline-specific approaches to professional development of educators on m-learning when relevant elements from related discipline-specific domains (*in casu*, SLA and language learning pedagogy, e.g. rehearsal) are included when using them for designing or evaluating practice.

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