Use of mobile testing system PeLe for developing language skills

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Abstract. One of the objectives of this paper is to investigate the pedagogical impact of both the mobile testing system PeLe (Norway, HiST) and the enquiry-based learning approach on language skills development in the context of mobile-assisted learning. The research aims to work out a methodological framework of PeLe implementation into the language classroom through formative assessment, immediate feedback and interactive post-test activities. The framework was developed and pilot tested in a joint research project (MobiLL) by English as a foreign language (EFL) teachers at Lomonosov Moscow State University (LMSU, Russia) and University College HiST (Norway) during two semesters of the 2013-2014 academic year. Students enrolled in a preparatory English course at LMSU were randomly assigned to 2 experimental groups and 2 control groups. Students in the experimental groups took a series of PeLe supported grammar and vocabulary tests as volunteers using handheld devices. The control groups were tested by the traditional testing method – pen and paper. The analysis based on quantitative research data demonstrated that PeLe supported language classes resulted in language skill gains. Qualitative data analysis highlighted the positive effect of mobile formative assessment and of post-test activities on learner motivation and collaboration skills. This study suggests that the use of technology was effective in engaging students in enquiry-based tasks, to produce more output in the target language.

Keywords: MALL, immediate feedback, enquiry-based learning, formative assessment.

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How to cite this article: Titova, S. (2015). Use of mobile testing system PeLe for developing language skills. In F. Helm, L. Bradley, M. Guarda, & S. Thouësny (Eds), *Critical CALL – Proceedings of the 2015 EUROCALL Conference, Padova, Italy* (pp. 523-528). Dublin: Research-publishing.net. http://dx.doi.org/10.14705/rpnet.2015.000387

1. Introduction

Mobile devices have become "pivotal in students' everyday life and mobile technologies are expected to play a bridging role between informal and formal practices of learning" (Mobile Education, 2011, p. 12). In spite of the plethora of research in the area of mobile learning, it challenges instructors to examine how mobility relates to their teaching aims, methods and subject matter, because there is not yet consistent Mobile Assisted Language Learning (MALL) methodologies. On the other hand, there is also a need in the new educational framework for mobile testing tools implementation aimed at developing learner skills rather than just assessing learner knowledge and proficiency (Arnesen, Korpås, Hennissen, & Stav, 2013). Hypothesis to guide the framework of our research includes collaborative enquiry-based learning and peer learning approaches and educational opportunities provided by handheld devices such as immediate feedback, interactivity and flexibility. This paper, supported by both current m-learning theory and enquiry-based learning theory, focuses on working out a methodological framework of mobile testing system implementation into the language classroom.

2. Method

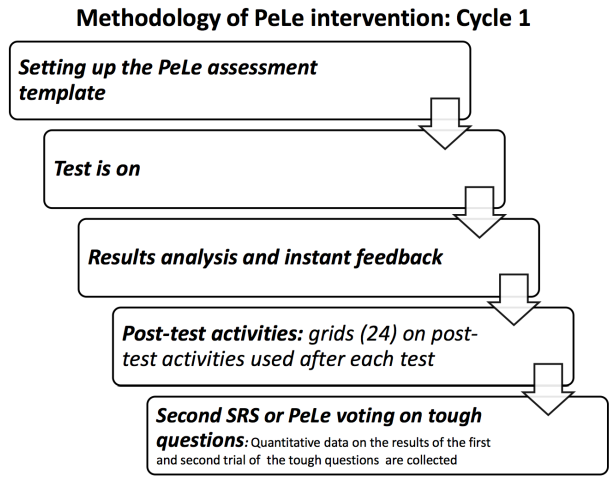
2.1. Research objectives

Mobile Language Learning (MOBILL, http://histproject.no/node/859) is an international project involving two institutions: Sør-Trøndelag University College (HiST, Trondheim, Norway), Department of Technology, and Lomonosov Moscow State University (LMSU, Moscow Russia), Department of Foreign Languages and Area Studies. The project was conducted during two periods from September 2013 to May 2014. The data discussed in this paper are related only to the first period of the project. The key objective of this international research project was to work out sound pedagogical strategies on how to implement the mobile testing system PeLe into the traditional language classroom (pedagogical perspective), thus introducing some improvements to the piloting tool (technological perspective).

The project target group consisted of Norwegian and Russian learners of English, all at the same language level (B1). For the first period of experimentation, several classes of learners at LMSU participated, namely: students (n=35) enrolled in a preparatory English course at LMSU were randomly assigned to 3 experimental and 1 control groups. The control group was tested by the traditional testing method, i.e pen and paper. In this paper, data collected only from the LMSU groups will be discussed and analyzed.

The methodological framework of the MALL model based on PeLe implementation includes both enquiry-based methods such as collaborative and peer learning post-test activities, brainstorming, problem solving activities, group discussions and mobile learning opportunities such as immediate feedback, formative assessment, interactivity and flexibility. The project implementation and research design is illustrated in Figure 1.

Figure 1. Methodology of PeLe implementation



2.2. Data collection

Data collection was done in three cycles:

1. Intervention of PeLe tests (8 tests) as formative assessment tools from September to December 2013. The grids (24) on post-test activities used after each test were completed by the teachers of the experimental groups. Quantitative data were analyzed by mean (M) and standard deviation.

2. Quantitative data of the final tests were gathered in control and experimental groups at the end of the semester, the data were analyzed by mean (M) and standard deviation.

3. In January 2014, the post-intervention questionnaire asked students to reflect on their experience and attitude to the MALL model. Qualitative data were then gathered to help explain quantitative findings.

In the first cycle, students of the three experimental groups took a series of PeLe grammar and vocabulary tests (8). PeLe tests in the experimental groups were used for formative assessment and were provided in the form of in-class grammar tests. Students responded with their smartphones or tablets. They had access to PeLe tests by using Wi-Fi in class.

As previously mentioned in Titova (2014), average scores were included to compare the overall performance of the control and experimental groups after the implementation of the intervention. The intervention data were supplemented by student feedback gained from a post-study Google questionnaire. The post-study questionnaire contains 11 questions in the format of Likert four-level scale aiming to get student views on the strengths and weaknesses of PeLe integration. The questionnaire was completed by 28 students of the experimental groups.

3. Discussion

The data collected on the overall scores of summative tests in two groups during the fall semester of 2013-2014 – control and experimental ones – strengthen Titova's (2014) results that introduction of PeLe supported approach helped improve academic performance of the experimental groups in overall results of the final test, whereas the control group demonstrated decrease in overall scores. The likely interpretation of this improvement could not be attributed specifically to PeLe-assisted testing. As found by Beal, Walles, Arroyo, and Woolf (2007), "[a]n alternate possibility is that students' performance might improve [also] as the result of a general effect of interacting with [mobile devices], for example, by increasing students' attention to the material; prior work suggests that interaction alone may enhance learning" (p. 44; see also Titova & Talmo, 2014). In addition, students might improve because of taking tests regularly, immediate feedback and enquiry-based strategies used by the instructors. Student answers in the post-study Google questionnaire indicated that they had an overall positive outlook regarding the MALL model. Some participants commented on the challenging nature of weekly tests and post-test activities. However, they claim that this approach improved their overall satisfaction because it helped them get prepared for their entrance exams.

4. Conclusions

Since our conclusions are based on subjective and objective data , the study has some limitations that need to be highlighted. Firstly, the number of participants was small (N=35), so their reflections may not be equally applicable to all mobile learner

perceptions. Another limitation is that PeLe enables the instructor to diagnose not only group performance but also results of each student because each individual's responses are also stored. As a result, an individual student's performance can be tracked across multiple sessions. Further research needs to probe the effect of PeLe implementation on individual performance of the learner. Thirdly, although mobile testing system PeLe holds promise, more research is needed to determine its effects upon developing not only grammar skills but also some other skills such as speaking, writing and listening.

This research suggests that PeLe integration into language learning could be efficient, especially if combined with collaborative enquiry-based learning and peer learning approaches and the pedagogical potential provided by mobile testing systems such as immediate feedback, interactivity and flexibility. The experimental results suggest that the MALL approach, combining current m-learning theory and enquiry-based learning theory and formative assessment, is most advisable. We hope that our approach will provide some constructs for pedagogical thinking about enhancing MALL with new mobile-assisted assessment methodology.

5. Acknowledgements

We would like to thank our Norwegian colleagues – Professor John Stav, Ekaterina Zourou, Arild Smolan, Ketil Arnesen and Even Einum – for making this research happen.

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Published by Research-publishing.net, not-for-profit association
Dublin, Ireland; info@research-publishing.net

Critical CALL – Proceedings of the 2015 EUROCALL Conference, Padova, Italy
Edited by Francesca Helm, Linda Bradley, Marta Guarda, and Sylvie Thouësny

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ISBN13: 978-1-908416-28-5 (Paperback - Print on demand, black and white)
Print on demand technology is a high-quality, innovative and ecological printing method; with which the book is never 'out of stock' or 'out of print'.

ISBN13: 978-1-908416-29-2 (Ebook, PDF, colour)
ISBN13: 978-1-908416-30-8 (Ebook, EPUB, colour)

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Legal deposit, United Kingdom: The British Library.
British Library Cataloguing-in-Publication Data.
A cataloguing record for this book is available from the British Library.

Legal deposit, France: Bibliothèque Nationale de France - Dépôt légal: décembre 2015.