



# Nottingham 2011



*The Call Triangle: student, teacher and institution*

## Design perspectives on technology, language teaching and language teacher education

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### Abstract

Despite the national strategies and major efforts to promote pedagogical use of ICTs in education, training programs for in-service teachers have often failed to develop sustainable pedagogical practice. For sustainable development, teachers need to be offered opportunities to explore the role of technology in relation to their concept of language and learning, and reforms should be designed in negotiation with teachers and students. In teacher education, aspiring teachers are being informed of the latest research results, but bringing the theory down to practice is a major task that calls for development work soundly based on research. In this paper we suggest that design-based research (DBR) may help to meet some of the challenges related to integrating technology in language teaching and language teacher education. We claim that teachers need to develop their expertise in multimodal pedagogy, not so much in the use of specific technological applications. To support our claims, we draw from a study where the pedagogical thinking of aspiring language teachers was analysed during the subject studies and new research-based pedagogical structures were developed.

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*Keywords:* teacher education, design-based research, development work, pedagogical design

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### 1. Introduction

In the field of education, as well as in language teaching, major undertakings have taken place to support and encourage teachers to use ICT in their classroom practices. However, very few of these actions have had sustainable implications for teachers' professional development (see for instance Taalas 2005). Furthermore, aspiring teachers fear that their credibility and authority will decrease as a result of changing practices, and believe that new practices are not 'real' teaching or learning (Jalkanen et al., in progress).

At the same time, major changes are taking place in our environment. Today's world is more multimodal, multicultural and multilingual than has been the case in the past. Language practices can be perceived as situated and local (Pennycook 2010), information and literacy practices are constructed in a social process (Brown & Duguid 2000), and language learning landscapes have become multifaceted (Sharpe et al. 2010). A great amount of language learning takes place in an informal setting, and the gap between school and free time literacy practices keeps growing (Luukka et al. 2008).

Profound changes in educational cultures and practices are needed in order to accommodate new pedagogical designs that take into account various learning sites (see Laakkonen 2011). The emergence of

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informal technological spaces requires students and teachers to have the ability to make use of the potential of ICTs and to combine the resources available to them to form their own, personal learning environments (PLEs). The changes in the operational environment described above pose growing pressures to re-think and re-design language learning environments.

This is a challenge both for language teachers and for teacher educators. We argue that the learning aspect needs to be considered in respect to professional development in educational setting (Jalkanen & Taalas, in progress). For sustainable results in the long-term, new kinds of structures, i.e. meta designs for pedagogical development are needed.

In this paper we contextualize these claims by presenting the development of a course conducted at the University of Jyväskylä with the help of a design-based research approach.

## 2. Method

This study makes use of Scandinavian perspectives on learning through problem-based learning (Hakkarainen et al. 1999) and project-based learning (Helle et al. 2006), and theories of development of expertise (Engeström 1999, Bereiter & Scardamalia 1993, Lave & Wenger 1991). The design-based research approach (DBR) is implemented in order to mediate a dialogue between theory and practice.

Design-based research aims at explaining the connections between theory and practice as well as between different tools (artefacts). It has dual objectives: on the one hand, it aims at responding to local needs, for example by developing the learning environment – and on the other, it strives to increase our understanding of learning (Barab 2006, Barab & Squire 2004). Design-based research and development typically take place in continuous cycles of design, enactment, analysis, and redesign (Design-Based Research Collective 2003). In this process, the following cycle is always based on the data collected in the preceding cycle and on the analysis of this data, as well as on the design principles developed on the basis of the analysis. Bielaczyc (2006: 302) states that long-term development work calls for a theoretical-level understanding of the reasons why certain practices are effective from the viewpoint of learning while others are not.

## 3. Context

The course developed through the DBR approach in this study familiarizes teacher education students with the Common European Framework of Reference for Languages (CEFR) and the European Language Portfolio (ELP). During the course, each student designs a course for a vocational school according to their own choice.

The beginning of this on-going development work dates back to 2009, when the teacher of the course expressed her interest in expanding the course structure to an e-module in order to get the students familiar with ICT in language teaching. The purpose was to support pedagogically meaningful ICT integration based on the core ideas of CEFR.

Design-based research is iterative by nature. The first version of the e-module was mainly based on previous teacher training models<sup>2</sup>, but developed further on the basis of observations made from the data. Following the principles of DBR, all data related to the design process was collected, including documents such as course plans and emails, researcher notes, and all the data produced within the e-module session. This paper is based on three data sets collected in 2009, 2010 and 2011.

## 4. Discussion

For the analysis reported in this paper the three datasets (2009, 2010, 2011) were combined, and the aim was to see whether there are any signs of change or lines of development. Main findings are as follows:

- From the perspective of aspiring teachers, it seems that the pedagogical designs they create follow the idea of one-design-for-all. There has been only a slight indication of the creation of personal learning environments in the course plans. The pedagogical structures supporting the agency and ownership of one's learning are to a great extent missing, and the use of ICT focuses on 'teaching' instead of 'learning'. A finding which raises a concern is that there are only few

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<sup>2</sup> One of the models that this module was based on was KOO-KIT, a study programme that focuses on integrating technology in language teaching and learning. The study programme was organised by the Centre for Applied Language Studies at the University of Jyväskylä during years 2001-2006.

signs of the link between the goals, tools and action; a great deal of the ICT is used for entertainment rather than learning purposes.

- From the meta design perspective, it has been a conscious choice to integrate the promotion of ICT use in existing pedagogical structures instead of organizing specific courses focused on ICT use in language teaching. In teacher education, as in language teaching, designing for learning should begin with considering the pedagogical needs and goals, and then activities and environments that can support them.

As for the signs of change, there have been clear lines of development. As the course design has evolved, a tendency towards a more goal-oriented use of ICT and more learner-centred approaches has become evident. More discussion and reflection have taken place around the design work. However, it is clear that more detailed descriptors that indicate the teacher trainees' developing understanding of pedagogical designs are needed.

## 5. Conclusions

The development work that has been described in this paper has been underway for three years. In perspective, this is a short period of time, given that the low level of pedagogically meaningful use of ICT in teaching has been an outcome of many research projects for years.

Steps to be taken in the future include meta designs that encourage the teacher trainees to reconsider the mindsets (about learning for instance) that guide their teaching. Teacher trainees need to be supported to understand the affordances that different kinds of mediating artefacts (e.g. technology) have, and thus to understand their role in pedagogical design.

As identified by Taalas (2005), change is a strategic, organizational and pedagogical challenge. Enough time and resources need to be allocated for teacher educators to develop the course designs. The development work has been considered as a long-term process due to the aim of building the course teacher's ownership in relation to the new course design. From the sustainability perspective it is crucial that development work involves meaning making processes – between teacher, student, and institution.

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