

Switching Perspectives: From a Language Teacher to a Designer of Language Learning with New Technologies

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Abstract. Despite abundant research on educational technology and strategic input in the field, various surveys have shown that (language) teachers do not seem to embrace in their teaching the full potential of information and communication technology available in our everyday life. Language students soon entering the professional field could accelerate the process, which highlights the role of teacher education in contributing to the change. The students should see how technology-development may change the affordances for language-learning, at the same time transforming the teachers' professional roles and practices. However, taking an active role in designing a new kind of language pedagogy seems to be challenging for students. This study explores an attempt to facilitate the students' perspective-switch from the teacher role to the designer position through participatory design. This effort was to lead the students to envisioning new practices for language learning and teaching with new technologies. However, initial analyses of the research materials indicated that despite the support the students were not fully able to see their role as designers for the future. Cultural-historical activity theory was used to examine the problem more closely. The analysis suggests that in order to position themselves as designers of the future language learning activity, language students need to understand their role as designers, conduct real-life experiments on the evolving visions with their learners, and involve learners as participants in the design activity by sharing visions and collaborative reflection on the experiments. The findings of the study provide tools for language teacher educators to make these activity systems visible and, thus, target for change.

Keywords: language teacher education; CALL; educational change; cultural-historical activity theory; participatory design

Introduction

This study examines the efforts of a multidisciplinary research group to support students of English in a Finnish university in switching their career perspective: they were to become not only language teachers but also designers of language learning with new technologies. The research is motivated by repeated calls for rethinking language teaching and language teacher education to meet the challenges of the technology-rich world, with new affordances¹ for communicative practices and collaboration (European Commission, 2013; Ministry of Education and Culture, 2012). Experience from earlier courses implied that it was difficult to change their thinking and practices towards the needs of the future (Koivistoinen & Kuure, 2010; Kuure, Keisanen, & Riekk, 2013).

¹ The notion of affordance, originally coined by Gibson (1979), refers here to the reciprocal relationship between the properties of the environment and the active learner as Van Lier (2000) defines it.

The study focuses on a Master's level university course dealing with language learning and new technologies (LTECH). The course attempted to better equip language students to face the opportunities and challenges in teaching languages in the ICT-rich everyday life. Participatory design (PD) (e.g., Greenbaum & Kyng 1991; Schuler & Namioka 1993) was applied to advance the course goals: facilitating the students' understanding of how technological development will reshape the affordances for language learning and, consequently, how language teachers' professional roles and practices may have changed when students graduate and enter working life. PD highlights active user participation in the design process, which is conceptualized as cooperative work, where designers and users together envision and develop users' future work practices and ICT designs, valuing each other's expertise and skills. The design process necessitates reciprocal learning and design by doing – both designers and users are to learn during the process. Hands-on experience provides support for users and enables them to take part in the design process in a meaningful way. When PD is applied to fostering change in language students' pedagogical thinking and utilization of modern ICT in their teaching, both students' and learners' participation in the design process is needed. In this study, the PD approach was to help students see themselves as designers of language learning with new technologies rather than language teachers reinforcing current practices. The research question was delineated as follows: Why is it challenging for language students to anticipate language learning with new technologies in the future? Two qualitative approaches were utilized to explore this question. Firstly, the research strategy of nexus analysis (Scollon & Scollon, 2004) and, secondly, design-oriented cultural-historical activity theory, CHAT (Kuutti, 1994, 2005; Molin-Juustila, 2006). The former involved an ethnographically-oriented, longitudinal perspective to the case under scrutiny highlighting the importance of participants' experiences and accumulated practices ('historical body') in changing practices. The latter provided tools for conceptualising the challenges within the case by using some activity theoretical concepts.

In the following, the background for the study will first be delineated through earlier research. The case will then be described and the processes of data gathering and analysis explained in more detail. Next, the central findings will be discussed. The article will conclude by pointing out some limitations of the study as well as paths for further research.

Changing the Practices of Language Teaching

Although a broad range of computer-assisted language learning (CALL) technologies are in use it seems that there is great variety in how these technologies have been applied so far in language education. A European consortium (Ziegler et al., 2009) identified in its report some special challenges for teacher education in preparing teachers for the future, especially as regards the development of information and communication technologies (ICT). ICT-related literacy practices have become highly integrated into children's and young people's everyday life beyond school but this experience and expertise is not yet utilised in language pedagogy on a broad scale. Teachers may be confident users of ICT in their personal lives but insecure about how to use it with diverse learners in pedagogically sound ways (ibid.). A national survey among Finnish teachers further suggests that teachers may value collaborative learning environments as such but find it problematic to promote real collaborative knowledge building with their pupils (Lakkala, Lallimo & Hakkarainen, 2005). The social arrangements they apply in teaching also seem to rely on individualistic ways of working (ibid.)

What is highlighted in various reports is the importance of re-defining the language teaching profession as well as pre- and in-service teacher education in the new situation (e.g., European Commission, 2013; Ministry of Education and Culture, 2012). Language teachers need to create new professional practices drawing on the already existing resources for learning and communication. They also need to anticipate the affordances that might arise in the near future and assess the consequences for the field of language learning and teaching. (European Commission, 2013)

As for teacher education, there are a range of aspects to tackle with while furthering change. While technology skills as such may be easy to promote, it may be more challenging to facilitate online socialising and community building as Compton (2009) maintains. Switching from the language teacher's perspective to the learning advisor's or facilitator's may also be difficult (Morrison & Navarro, 2012). Various beliefs on the nature of language learning and teaching seem to contribute strongly to maintaining familiar and accustomed practices, and such beliefs may be difficult to dissolve (Li & Walsh, 2011; Löfström & Poom-Valickis, 2013). The paradigm change from a narrow conception of language teaching to the broader view of language education seems to be particularly demanding for new teachers who would need support in the process during their studies (Nyman, 2009).

It seems essential for students to develop their understandings concerning the affordances of various mediating artefacts such as technology for learning, and the consequences they may trigger in pedagogical design. An influential tool for professional growth has been reflective practice, the dialogue of doing and thinking through which professional expertise grows (e.g., Schön, 1987). Recently emphasis has been put on reflection for future courses of action rather than ongoing or past events (Urzúa and Vászuez, 2008; Conway, 2001). Design-based approaches to learning, for example, may provide useful tools for reconsidering new kinds of positions in the teacher profession (e.g., Conole et al., 2010; Mor and Mogilevsky, 2013). Colpaert (2010) has been developing a design approach that aims to dissolve the conflict between personal and pedagogical goals as an essential aspect of creating fruitful learning environments. The work on personal goals concerns all the actors involved, not only the learners. Colpaert (2010) also highlights the importance of looking at the whole environment for learning instead of focusing primarily on technology.

Students studying to become teachers seem to lack understanding of how to incorporate ICT tools into their teaching practice in order to develop meaningful learning activities, as Kim's (2012) study on teaching metaphors suggests. University teachers seem to have similar problems: despite the arrival of modern ICT, they have not shown significant transformation from traditional, static means of delivering materials and obtaining course assignments (Blin & Munro, 2008). Teacher education has an important role in making a change: when language students are projecting their possible futures as language education professionals their teacher educators' example seems to be important (McNicholl, 2013). Researchers have been interested in finding ways to facilitate the elaboration of shared understandings in teacher education. The CHAT model of activity system was used by Douglas (2012), for example, as a descriptive heuristic to explore whether the participants share their understandings of the object, outcomes and tools of teacher learning. The study brought up the importance of constant negotiation and renegotiation of the activity system's object for collaborative work to create opportunities for expansive learning.

The following section introduces the case context for the present study in more detail.

The Case and the Data

The case context for this study was a Master's-level elective course for English students in a Finnish university focusing on language learning and new technologies (LTECH). The five-week course was organised to explore the affordances of evolving technologies for language learning today and in the near future (for simplicity we use “new” in this paper while referring to the technologies that are new for their users, i.e. differ from the accustomed language learning and teaching practices). The course drew on the socio-cultural view on language learning emphasizing the learners’ opportunities for participation (e.g., van Lier, 2000). A problem-based approach was applied whereby the students designed and implemented a technology-enhanced project for a school (see Rogoff, 1991).

Experiences from earlier courses had suggested that it is difficult for students to distance themselves from habitual language teaching practices and orient to the future (see Anon, 2010, 2013). They tended to construct the learning events with the classroom and the textbook as a starting point, using technology only as an add-on rather than as an environment that affords new kinds of working methods and learning paths (in line with Blin and Munro, 2008, for example). This time the teacher worked together with a multidisciplinary research group with expertise in PD. The aim was to see if PD could help students see themselves as designers of language learning with new technologies rather than as traditional language teachers working solely in the classroom. As mentioned above, PD highlights active user participation in the design process: designers and users (in this case, students and school-children, respectively) are to together envision and develop users’ future work practices and ICT designs, valuing each other’s expertise and skills, thus, learning reciprocally through design by doing (Greenbaum & Kyng, 1991; Schuler & Namioka, 1993).

The participants and their roles in the study are described in Table 1.

Table 1. Participants in the study

Participants	Role
LTECH course teacher	Teacher (English language) in charge of the LTECH course; Researcher in the multidisciplinary research group
Multidisciplinary research group	Six researchers with various backgrounds (e.g., language studies, business and organizational studies, information processing science, cultural anthropology)
University students	12 Master’s-level students of English attending the LTECH course, 6 of them within language teacher education ²
School teachers	3 class teachers, whose pupils were involved in the project; the teacher in charge of English classes acted as a contact person in the planning phase
School pupils	59 Finnish-speaking children (aged 11–13) studying English as their second language in a local school

Informed consent was asked from the students, teachers and pupils as well as the pupils’ parents (Thomas & O’Kane 1998). This study focuses on the language students’ perspective. The case context (LTECH) is illustrated in Figure 1.

² Typically, many students in the non-teaching line also finally become teachers after completing the pedagogic studies after their Master’s Degree.

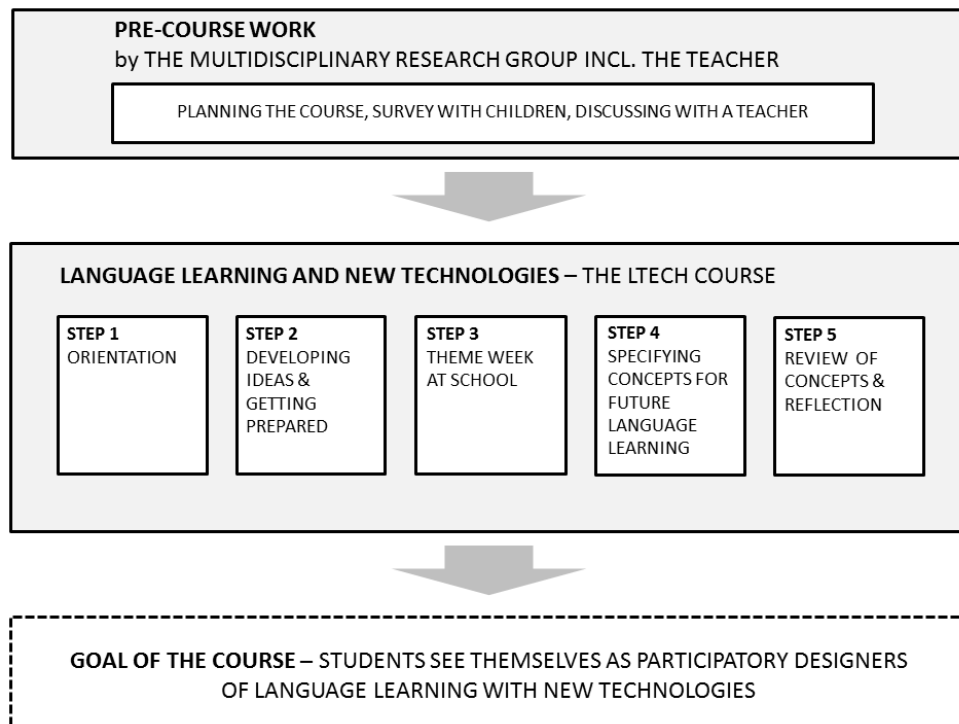


FIGURE 1. The design of the case course LTECH

The PD approach was utilized in the context of the course in the following way. Before the LTECH course implementation, the multidisciplinary research group planned together how to apply the PD approach on the course with the language students (see Figure 1). Contacts were made with a school for organising a language learning project with the children, i.e. a theme week. One of the researchers conducted a survey of children's interests and viewpoints at the school to raise their interest and to involve them early in what was coming. The school teachers were also consulted. At the beginning of the course, the students were informed of the principles of PD as well as the results of the survey of children's interests and viewpoints. The students were then asked to brainstorm and design workshops for their learners, i.e. the school children, for the theme week. Those workshops were to be experimented with in practice together with the learners. Based on the experiences on working with the pupils, the students were to reflect on their original ideas and envision new practices for language learning and teaching with new technologies.

The actual course proceeded through five steps (Figure 1): The **orientation** (Step 1) included an introduction to the principles of PD and their application on the course as well as a future workshop exploring the development of technology and its affordances for language learning. The students also heard short presentations from technology developers on applications using Near Field Communication (NFC) technology for learning. The students were hereby given food for thought and an opportunity to try out the applications in the school project. Students worked primarily in teams, exploring language and literacy learning, new technologies and social media, sharing ideas in a meeting and online.

After the orientation, each team continued developing their ideas more concretely while **preparing activities** for the theme week at the school (Step 2). The four workshops for the **theme week** (Step 3) were named *Story-writing*, *Song-writing*, *Picture screen*,

and *NFC game* (see Figure 2 for more details). The teachers sent the children to the different workshops flexibly during school days and the students guided the activities.

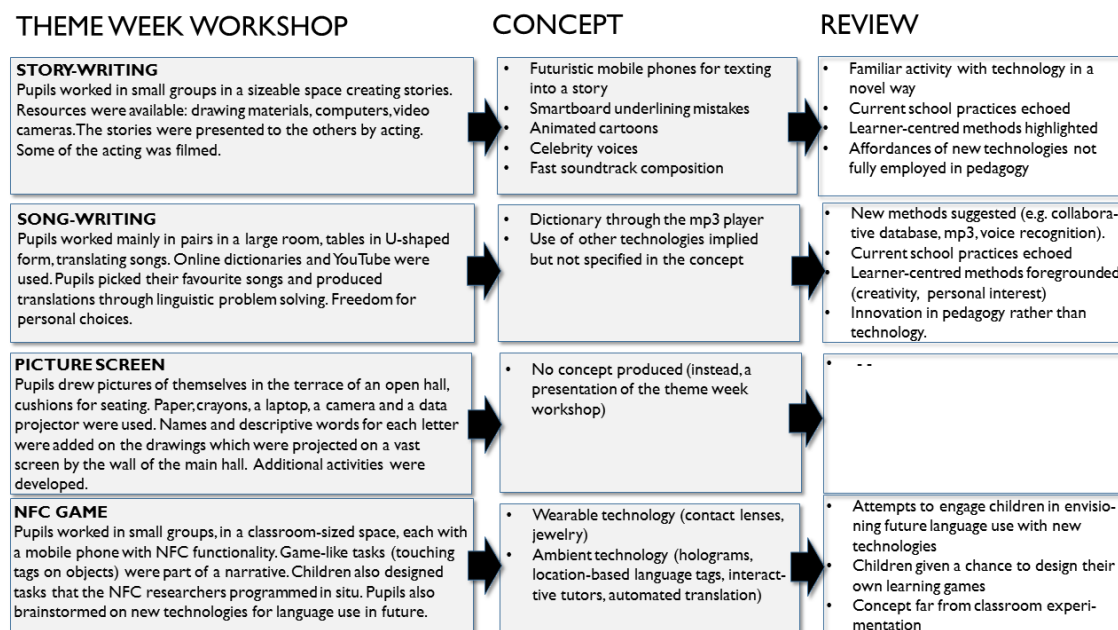


FIGURE 2. The theme week workshops and concepts designed by language students as well as the review of concepts by the multidisciplinary research group

After the theme week, using the experiences from the planning stages and the theme week workshops, the **students produced concepts** (Step 4), i.e. designs for technology-enhanced applications or solutions that would provide new affordances for learning. These concepts were expected to reflect the students' new understanding of the evolving ICT scene and its affordances for language learning and teaching in future, drawing on the real-life experiments of the theme week. Three student teams introduced their concept designs, while one (*Picture screen*, see Figure 2) delivered a report on the work done.

The **concepts were reviewed** in the final course session (Step 5) with the help of the multidisciplinary research group. The theme week activities and concepts created had been successful when regular classroom practices are considered; the activities had been learner-driven, even if teacher-led, and they had offered children something different from their daily language learning experiences. The children had also had a chance of using English in authentic communicative situations more frequently than during normal school days. Some new technologies were envisioned in the concepts; however, their use was not seen to produce particularly new kinds of configurations as for learning environments and practices.

Although the theme week workshops were a success at the school, the purpose of the concept review on this PD-inspired course was to help students see themselves as future-oriented designers of language learning with new technologies. This would have entailed involving children actively in the design process instead of participating in the theme week only in the familiar language learner position. In other words, even if the children had been involved in various activities that they had found interesting, they had not been engaged in envisioning future language learning with new technologies. Only in one workshop (*NFC game*, see Figure 2) some brainstorming on future ICT for languages (learning and use) took place. Otherwise, the concepts produced by the students were largely technology-enhanced modifications of accustomed practices (see Figure 2, *Story-*

writing, Song-writing), even if partly novel for the children. In this respect, the results of the PD process were not fully satisfactory.

Finally, the students compiled project reports in which they reflected on the work completed, lessons learnt, and visions for the future (Step 5). The experiences from the theme week had been eye-opening for them in terms of children's life world, the school environment and the students' own capacities to cope with the new situation. However, the concepts and the reflections on the process revealed that future-orientation was not clearly traceable in relation to the evolving technologies and their relevance for pedagogical practices. In the following, we will try to make sense of this situation.

Multiple types of materials were gathered throughout the process from face-to-face meetings and the online environment used in the course. The materials gathered during the workshops at the school consist of 9,5 hours video recordings and 4,5 hours of audio recordings of *in situ* action, different types of artefacts (word file documents of pupils' stories and video clips of dramatized dialogues produced by the pupils) and ethnographic observations made by the researchers. The data collected from the LTECH course activities include the discussions and materials produced in the virtual learning environment, students' reflective writings, concept presentations and project reports. The teacher and two other members of the multidisciplinary research team also took part in the theme week. Thus, their observations were also utilised in data analysis.

Theoretical and Methodological Background

Throughout its existence, the research group has relied on the research strategy of nexus analysis (NA) (Scollon & Scollon 2004). It is suitable for studying complex, evolving processes in order to shed light on social action not only *in situ* but also as reaching across long-span timescales (Scollon & Scollon 2004). Examples of studies using NA have focused on micro perspectives but also on issues on macro level, e.g. when interpreting video diaries produced by children (Iivari et al., 2014), studying popular media as a pervasive educative force (Wohlwend & Medina, 2012), and building an information infrastructure in a city (Halkola et al., 2012).

Nexus analysis advances through the cycles of *engaging, navigating* and *changing* a nexus of practice (Scollon & Scollon, 2004). The researcher first enters the community being studied, becomes acknowledged as a legitimate participant, applies ethnography asking, 'What is going on here?' (*engaging*), and then examines more in depth the discourses circulating the nexus of practice in question (*navigating*). The researcher usually has the aim to change the nexus of practice somehow (*changing*). (Scollon & Scollon, 2004.) In this study, the changing phase is most prominent as the whole project focused on changing the practices of language learning with new technologies. As challenges were faced in contributing change, a step back was taken to navigate the nexus of practice, to understand the situation more deeply.

According to nexus analysis, social events and actions are seen as an intersection of our experiences and accustomed practices (*historical body*), the participants and their mutual relationships (*interaction order*) and the discourses that become salient in the situation (*discourses in place*) (Scollon & Scollon, 2004). For example, a particular activity in a classroom situation may be influenced by how the room and the facilities are designed and what kind of interaction it affords or constrains (*discourses in place*), who are not present and who are, and what the nature of their mutual relationships are (*interaction order*). Social actors *in situ* such as the students, prospective language teachers on the LTECH course, draw upon their experiences and shared practices. There may also be more distant influences such as the curriculum, national strategies of

education, the traditions of teaching and teacher education and diverse beliefs among others, all related to the participants' historical bodies that affect their orientations to the tasks at hand. Especially the notion of historical body was used in this study as the initial methodological tool to understand the experience and practices of individuals as interdependent with those of other participants (Scollon & Scollon, 2004).

During the initial data analysis, it became clear that the concepts of nexus analysis did not alone provide sufficient tools for understanding the phenomena at hand. As nexus analysis draws upon multiple methodological and theoretical perspectives in examining social action and is often combined with different research methods, design-oriented CHAT (e.g. Kuutti, 2005) was applied in this study to examine the activity systems related to the case process more thoroughly. CHAT views participants as coming to the joint project with the histories and practices of different activity systems and, therefore, also with their varying goals and agendas. Historical body is theoretically coherent with CHAT as for the epistemological foundation of (mediated) social action: both refer to long-term collaborative processes as emergent developmental trajectories, on a way towards a shared goal (see Vygotsky, 1978; Engeström, 1987; Wertsch, 1991; Kuutti, 1998; Scollon & Scollon, 2004). In the framework of CHAT, the participants are viewed to come to the joint project with the histories and practices of different activity systems and, therefore, also with their varying goals and agendas. As expressed in the terms of nexus analysis, people carry along their historical bodies. (Scollon & Scollon, 2004)

According to CHAT, a collective, object-oriented human activity system is the basic unit of analysis and the smallest possible context for different types of purposeful human activities (see Engeström, 1987; 2000), e.g., language learning and teaching. Engeström's (1990) triangular model (Figure 3) provides the basic structure for any activity system.

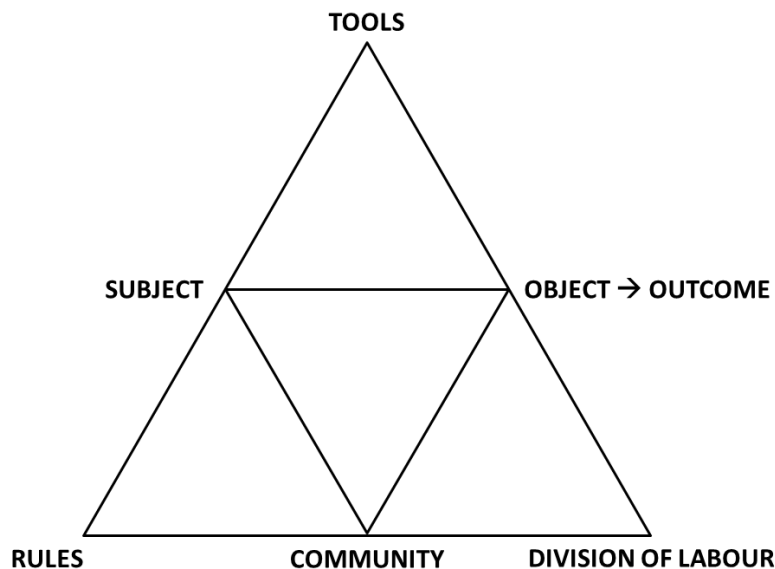


FIGURE 3. The structural model of activity system (Engeström, 1990)

The *object* is the most central element in the activity system. Activities are distinguishable from each other through their objects that are being transformed into some desired *outcome* (Engeström, 1990). The object is actually twofold (Miettinen, 1998, p. 424). Firstly, it is something selected to be the object of transformation, the expected outcome orienting this transformation (e.g., wood for an artist resulting in a wooden sculpture or a

language aspect that the teacher chooses for scrutiny to result in language learning by the school children). Secondly, it is the *vision* of the object, the expected outcome constructed by a subject (e.g., the image of the figure in the artist's mind when treating the wood or the expected learning outcomes directing teacher's actions). When the vision of the object is concretized (e.g., a plan, model, course description), this vision also becomes a *tool* for the activity, enabling and limiting object transformation (Kuutti, 1994, p. 53). Tools empower the subject in the transformation process with the historically accumulated experience and skill captured in them. 'Higher-level' tools (Miettinen, 1998) synthesize and generalize the modes and results of prior actions. They carry and transmit purposes and ways of action, and they also future-orient and motivate activities. Examples of such higher-level tools include beliefs, myths, ideals and concepts that all may be influential in directing the object transformation. However, they also restrict the interaction with the object to be from the perspective of those particular tools only.

Every activity is also connected to other activities (Engeström, 1987). The outcome of the design activity is something purposefully created for others to use (Kuutti, 2005). The object of the design activity (e.g., new tools and practices for language learning) becomes a tool to be used in the use activity (Kuutti 2005). According to Kuutti (2005), the connectedness of the design and use activities is the minimal unit of analysis of design activities in general. In this study, the design-oriented CHAT approach is applied to conceptualize the challenges involved in the case of designing future language learning (LL) with new technologies (Figure 4 illustrates the inseparable activities of 'design' and 'use' in this context).

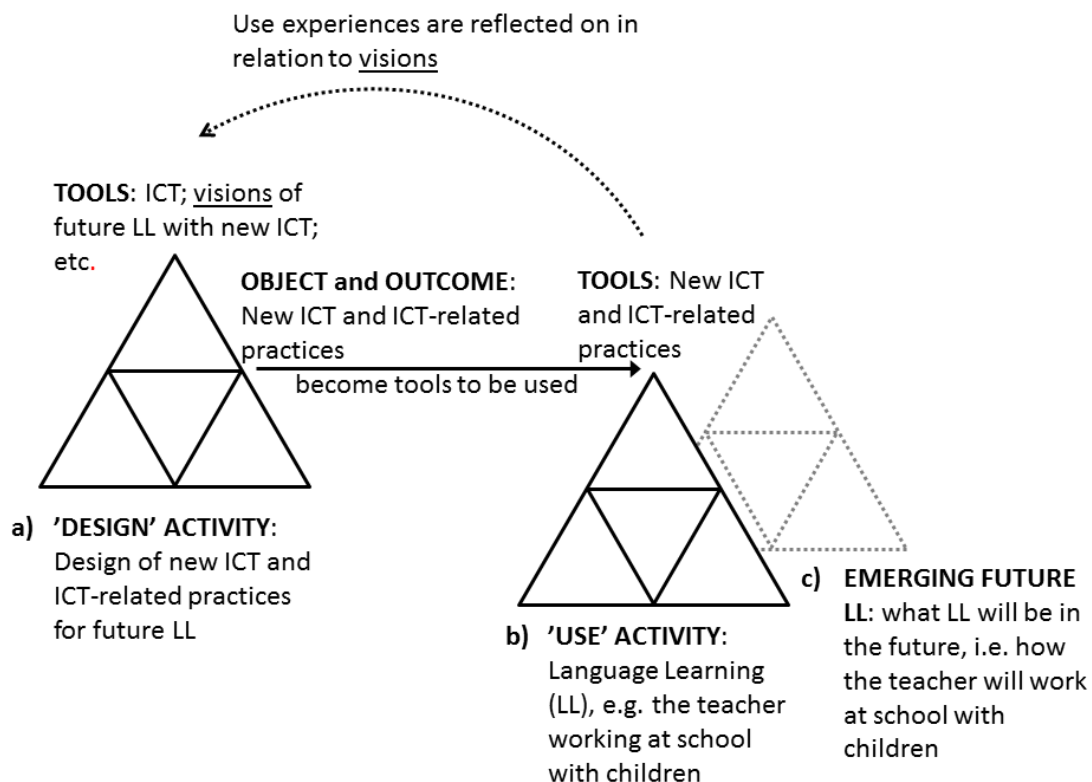


FIGURE 4. The inseparable activities of 'design' and 'use' in the context of designing language learning (LL) with new technologies (adapted from Kuutti, 2005 and Molin-Juustila, 2006)

When the context of designing language learning (LL) with new technologies is examined, two inseparable activities can be identified: 'design' (a) and 'use' (b) activities. For the design activity, the object is the practices of language learning and teaching, drawing on the affordances of evolving ICT. The outcome of this design activity will be embedded and used as a tool in the existing language learning (LL) activity (b) or emerging, future activity (c). The initial understanding of the possibilities of the design object, e.g. prior knowledge of ICT potentials, contributes to the visions of the future (tools in (a)) to be elaborated into something concrete (as the object of (a)) to be used by the actual users within the use activity (tools in (b)). The design for future LL (a) is to be a participatory, collective effort where the object of design activity is *iteratively* transformed in conjunction with several use experiences gained with real users (b) (Molin-Juustila, 2006, see also Miettinen, 1998). These design experiments within the real-use activities enable projections for the future activity (c). They form the basis for a reflective learning process within the design activity (the return curve). However, in order to be able to reflect on the experiments and to learn from them, a co-existence of 1) the concrete 'new' (new ICT and related learning and teaching practice as a representation of the design visions) and representatives both from 2) the real-use activity (e.g., school children and students as teachers), and from 3) the design activity (e.g., students as designers) are needed. This co-existence enables the evolution of the design visions based on real-use experiences. (Molin-Juustila, 2006.) The empirical data gathered during the LTECH course was explored through this theoretical framework.

Data Analysis

The collaborative research process evolved through several successive and overlapping stages. It involved several multidisciplinary data and discussion sessions, and individual tasks were carried out between these sessions. During the sessions meaning-negotiation took place for achieving a shared and deepened understanding of the phenomenon and the meaning of the data collected.

The nexus-analytic research process is ethnographic, in other words, gathering new information is “a dynamic, dialectical process in which the ethnographer is actively involved in the practices he or she is observing” (Tapio, 2013: 74, citing Blommaert, 2008, Fabian, 2001). Researchers also rely on multiple types of research materials and research methodologies. In the current study, all the researchers were present during the class activities at the university and in the online learning environment. Three of them also took part in the activities at the school. Most of the activities at the school were also video and audio recorded, to enable a closer analysis. The video-recorded materials were first viewed by three researchers, in order to identify the most salient phenomena and to understand what was going on during the school activities. The aim of this type of analysis was to uncover the practices and resources through which the participants construct the meaning and social order of their conduct in social interaction (Jordan & Henderson, 1995). Together with the observations and material, the close video analyses revealed that the class activities were based on rather traditional ways of teaching, and that the language students had not been able to engage in PD of language learning with new technologies as much as expected. Thus, the next stage of analysis focused on questioning why it was difficult for the students to see themselves as designers of language learning with new technologies. The notion of historical body was discussed in terms of different understandings (beliefs and myths) and viewpoints (e.g., related to ICT) that the students and other participants had made visible during this intervention. The analysis did not, however, clarify the relationship between the students' concepts for future LL and their

inability to see themselves as designers following the PD approach. For this reason, the concept of object-oriented activity system from CHAT was utilized to move forward with the analysis. This concrete framework made it possible to understand and interpret the overall intervention and actions within. Thus, in the subsequent sessions the question was raised whether there had been several different activity systems at work during the intervention. The concepts and notation from design oriented CHAT gradually led to concretizing the problem in students' learning process in terms of different, intertwined activity systems, thus raising the abstraction level in describing the problem. CHAT also made it possible to view the course in its wider societal context, where the historical body of the community in question becomes a relevant factor in the analysis (e.g., Engeström, 1987).

In the following, the findings of the study will be discussed.

Findings

After the LTECH course, it seemed that the participatory approach applied had not been sufficient in helping students see themselves as designers of language learning with new technologies. Although the language students had generated an abundance of language learning activities, and both students and pupils had found the project worthwhile, the visions of future language learning had not reached very far beyond the current classroom. Rather, the solutions were technology-enhanced modifications of accustomed practices (see Figure 2). The research question for this study addressed the issue of why such envisioning is so challenging for language students. Figure 5 illustrates the central findings of the study, which will be explained in more detail below.

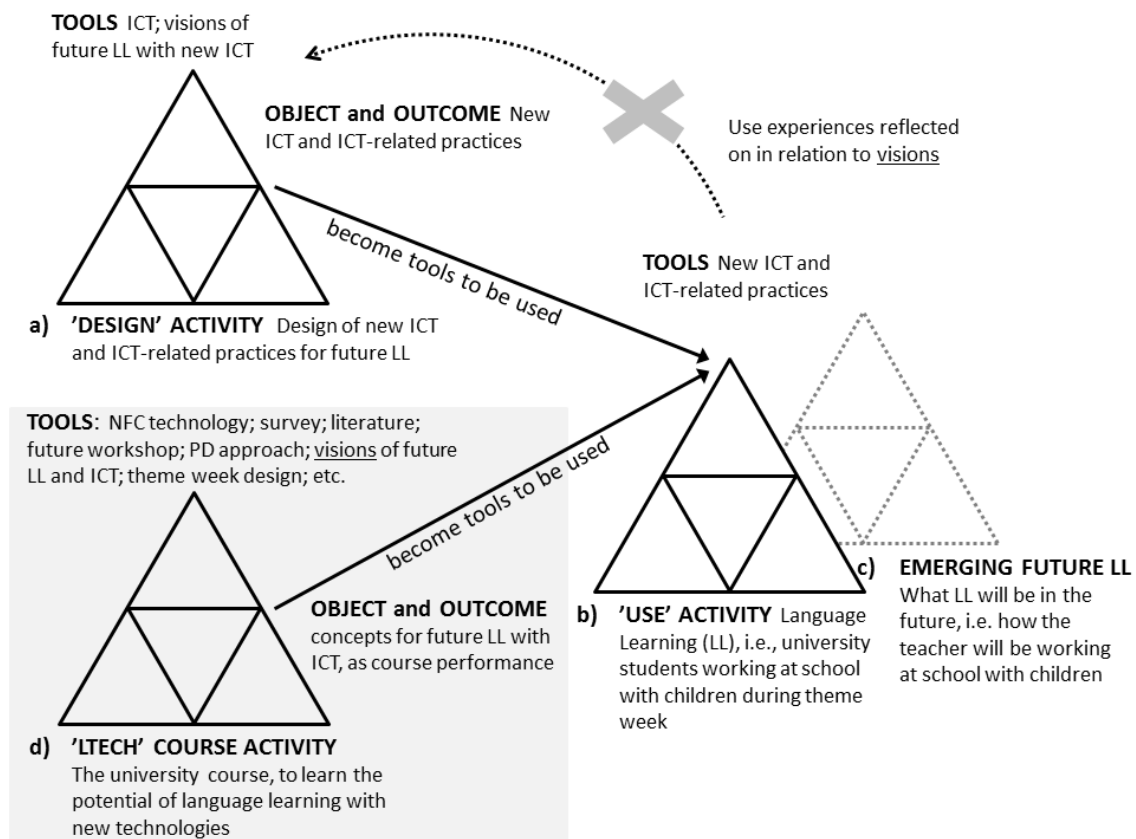


FIGURE 5. The LTECH course activity (d) in relation to the language learning (LL)

design (a) and use activities (b and c)

The analysis suggests that the object and the motive of the design activity (“new ICT and ICT-related practices” for language learning in the future) was never fully shared between the research group and the language students. In other words, the students were never able to see themselves as subjects in the participatory **design activity** (a) preparing design experiments for the **use activity** (b), i.e. the theme week workshops. Instead, as participants of the **LTECH course activity** (d), the language students saw themselves as teachers preparing these workshops to offer learning activities for school children. The PD approach, the description of project aims, and new technologies brainstormed in the orientation phase were tools in the process (Figure 1). For example, in the *Picture screen* workshop outside the classroom, the pupils drew pictures that were then projected on the hall screen. Nevertheless, the children worked individually on their own drawings, technology acting as an enhancement rather than an object of innovation and design.

Based on the analysis, the students’ inability to share the object of design activity (a) culminated in the artefacts called “concepts for future LL” (Figure 2). According to CHAT, it is the purpose of the artefact that defines its role in the activity system being analysed; either it is the object of transformation or a tool to be used in the transformation of some other artefact. From the design activity point of view (a), these concepts to be produced by the language students should have been seen as (higher-level) tools for the iterative design activity, i.e. concretized visions for the future LL. However, the data revealed how most student groups treated these concepts as the object of transformation only resulting in the final outcome of their activity, the LTECH course activity (d). For example, the language students offered examples of how technology could enhance their workshop activities: e.g., software for spell-checking children’s stories or speech-recognition software with celebrity voices for generating audio versions. Only the *NFC game* team showed a more design oriented, iterative approach while elaborating their concept even if the concept was not tightly attached with the idea of the theme week workshop. The group also invited the pupils into envisioning the future in line with PD. As none of the other student groups adopted their roles as participants in design activity seeing their concepts as orienting tools for iterative design activity, their concepts remained the desired end result for the students’ course activity as such, i.e. the object of their own learning activity, labelled in this analysis as the LTECH course activity (d).

The PD approach applied in the project was obviously not enough in helping the language students see themselves as designers for the future. Therefore, the students largely failed to engage their pupils as crucial participants in the design process. All the experiments during the theme week would have provided the basis for re-considering the visions for the future language learning. However, the iterative learning potential of the theme week experiments was lost in three cases (with the exception of *NFC game*) as the language students did not see themselves as participants in the design activity. The co-existence of the concrete new (the workshops) and the representatives both from design (students as designers) and use activities (pupils and students together) was missing.

If the pupils, representatives of the use activity, had been engaged more strongly as participants in the design activity (as originally expected from the students), and their voices and experiences carefully considered, the final wrap-up session at the end of the LTECH course might have become a more participative, collective learning process within the design activity for the future LL with new technologies. In other words, the experiences during the theme week experiments (b in Figure 4) together with the concrete visions as the “concepts for future LL”, produced by the language students after reflecting on in relation to their original visions, would have been essential connectors between the

existing (b in Figure 4) and the *future* LL (c in Figure 4). This would have required both the theme week experiments and the concepts to be regarded as tools orienting the iterative design activity rather than the mere object and outcome of the one-time LTECH course activity (d in Figure 5).

Concluding Discussion

This study addressed the challenges that language students have in understanding technological change and its relationship with the future practices of language education. Language students find themselves in a controversial position: On the one hand, they are urged to meet with repeated calls for reconsidering language education and teacher professionalism in the technology-rich world (European Commission, 2013; Ministry of Education and Culture, 2012). On the other hand, the historical bodies of teacher education and teacher professional practice still largely rely on individualistic ways of working in the classroom in the national context of the study (Lakkala, Lallimo and Hakkarainen, 2005). However, language students should be able to envision new futures for learning and re-consider their professional growth in this light (e.g., Nyman, 2009; Nyman and Kaikkonen, 2013).

Nexus analysis allowed us to consider the nature and influence of historical bodies in the joint effort. The participants on the LTECH course were seen to have their own experiences, beliefs, myths and knowledge gained from their own changing roles as language learners, language students, teacher trainees and participants in interaction. In the case context, the PD approach was applied for a more collaborative process of iterative design reflecting for future practice (Urzúa and Vászuez, 2008; Conway, 2001). The students were preparing theme week workshops for school children (based on children's own interests), creating concepts for future language learning with new technologies and engaging children in the evaluation process of these concepts. Bringing in their histories and practices from different activity systems, their varying goals and agendas, the language students did not manage to create their concepts according to expectations, however. The children enjoyed the activities and the students felt that the hands-on work had given them invaluable experience of working with children through learner-centred methods in an authentic environment. Nevertheless, the students were not fully able to see their role as participatory designers for the future. Rather, they adopted a traditional teacher position preparing language learning activities for the children. In other words, despite the facilitation by the teacher and the multidisciplinary research group during the course, these concepts echoed the historical body of language education where technology played a minor role, providing mainly an enhancement for accustomed practices (in line with Blin and Munro, 2008).

The analysis of our case through design oriented CHAT (Kuutti, 2005; Molin-Juustila, 2006), enabled us to conceptualize language learning and its future design as separate, yet intrinsically intertwined activity systems. The latter produces mediational means such as tools, new professional practices and visions for the utilisation of the former, while the former provides an essential empirical context to iteratively experiment and develop these means further. To position themselves as designers of the future language learning activity, language students need to understand their role as designers, conduct real-life experiments on the evolving visions with their learners, and involve learners as participants in the design activity by sharing visions and collaborative reflection on the experiments.

Although the PD approach was not fully successful in helping language students see themselves as designers, the CHAT analysis and the use of the notion of historical body in treating the data did reveal the problem related to the intertwining activity systems

at work during the course. This made it possible to discern the problems and barriers in the students' learning better. The historical body of the participants, grown gradually in the course of time gives ground for the students' pedagogical choices and visions making change particularly difficult. The findings suggest, along with McNicholl (2013), how important it is for a teacher or teacher educator to seek methods for breaking traditional patterns, and for helping the students to find new projections for the future.

A natural continuation for this study would be to implement the course again with an even more explicit effort on PD, using the findings as a tool for exploring together with the participants their personal and pedagogical goals (see Colpaert, 2010) as arising from their historical bodies (Scollon & Scollon, 2004). This could also help students identify the multiple activity systems in their daily lives and reconsider their objectives with reference to their future profession.

The results of the study may be transferrable into various contexts where practices are to be changed. Regarding the limitations, the results were gained from one case that is specific in many ways. Nevertheless, previous course implementations have revealed similar kinds of trends. From theoretical perspective, the approaches employed were effective in identifying the complexity of aspects at work in educating students to grow into language professionals of the future.

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