Mobile assisted language learning in the workplace – developing the context-aware learning application Appla

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Abstract. This paper discusses the possibilities for Mobile-Assisted Language Learning (MALL) in the workplace. We present an on-going project on developing a language learning application Appla and report on a pilot study of its use. The Appla application is based on speech recognition: it records and transcribes the ongoing interaction the language learner/employee is involved in and provides information about it (e.g. transcriptions of conversations, word lists). Thus, the application is context-aware (cf. Stockwell, 2016), i.e. the learning material is gathered from real interaction around the learner. The target group of the application consists of adult L2 learners, who have basic knowledge of Finnish and who want to improve (professional) Finnish language skills. In the pilot study reported, the Appla application was tested in simulated work-like tasks by second language speakers.

Keywords: context-aware, learning applications, less taught languages, MALL, second language learning, speech recognition.

1. Introduction

In Finland, as in many other European countries, the public sector language training, so-called integration training, for adult second language learners aims to achieve the level B1 in the Common European Framework of Reference for languages (CEFR, 2001). After achieving this level, the availability of language

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training decreases dramatically. However, many learners would benefit from more advanced Finnish courses, since level B1 does not suffice for professions which require high education and in which the work is mostly done via language, e.g. white-collar work. The need for further education also applies to many learners who already have a workplace. In this paper, we present a mobile application, which is developed for those more advanced language learners (and their teachers), and report a pilot study that shows how the application may be utilised.

Our ideological background is in language learning in interaction and situated learning (Lave & Wenger, 1991). The critical catalyst has been the idea that the classroom is not the most efficient place to learn professional language. At the same time, it is known that working itself does not guarantee language learning (e.g. Strömmer, 2016). Interaction in the workplace does offer possibilities for learning, but these affordances could be exploited more effectively.

For the better exploitation of the affordances workplaces provide, we have developed a language learning application Appla. Our target group is adult L2 learners who have basic knowledge of Finnish and who want to improve Finnish language skills at work. From a technical point of view, the application is based on speech recognition: it turns the ongoing conversations around the users into language learning materials. As such, the application is learner-centred and context-aware (cf. Stockwell, 2016), which means that the learning materials are collected around the user. In this regard, there is a considerable difference between Appla and the traditional language learning applications in which the learning materials are usually ready-made. The benefits from a context-aware approach are evident since the learning materials reflect the linguistic reality of the user. The Appla application may benefit not only L2 learners in workplaces but also L2 teachers by helping them to design material for teaching particular vocabulary, expressions, and grammar in different workplaces.

In this paper, we present a pilot study of the use of the Appla application. The research questions are (1) how the test users address language issues while using the Appla application, and (2) whether the test users find the application useful.

From the broader point of view of MALL-studies, we investigate if the existing speech recognition technologies (in this case Google API) are sufficient for supporting independent language learning, especially in less resourced languages such as Finnish. With Appla, we want to contribute to the discussion on the future of MALL, which Burston (2015) has encouraged.

2. Methods

2.1. Task and participants

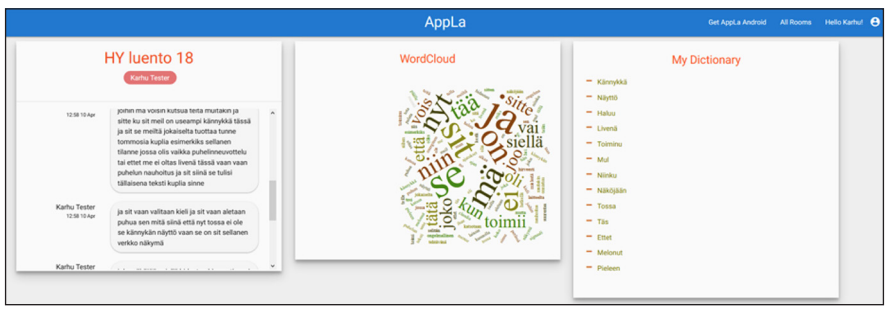
We arranged four test sessions in the universities in the Helsinki region. Each session lasted 45-90 minutes and included two different tasks and a reflective interview after the test. Seventeen voluntary testers were university students with Finnish skills B1 or higher. Testers used mobile phones provided by the researchers.

The first research question is answered through a task in which test users wrote an invitation according to the instruction given orally by the researcher and transcribed by the Appla application. The way in which the test users accomplished the writing task – with the help of the Appla transcript – was video-recorded and analysed. After the task, the students were interviewed in order to answer the second research question.

2.2. Technical overview of the Appla application used in the study

Appla is a mobile application which records interaction around the user, transcribes the interaction into text, and displays it on the mobile device and on the desktop in real time. On the desktop, the system creates word clouds based on the transcribed material. Also, the user may create their own list of essential words by clicking on the words in the word cloud (see Figure 1).

Figure 1. Desktop view



Appla is an Android application, and the speech recognition feature is powered by Google Cloud Speech API (for details, see Nguyen, 2017). The application is designed to work both as a real-time guide and as a material bank for individualised

language studies. Used simultaneously with an ongoing conversation (e.g. a meeting), the Appla gives information about the ongoing interaction. After the recording, the user may utilise the transcription and the word cloud by building their own contextually relevant vocabulary. The transcription is also well-suited to function as a material for the language teacher – or a colleague supporting the learner.

3. Results

The pilot study shows that the test users employed the transcriptions as an affordance for language learning. That is seen in the actions of the test users in following ways: they check lexical details from the transcript, they copy and modify the formulations from the transcript, and they start language-related discussions based on the transcript. Table 1 (see Sidnell & Stivers, 2013 for transcription details) illustrates the first mentioned. The test users are writing an invitation according to the instruction given orally and transcribed by Appla (more detailed analysis, see Komppa & Kotilainen, forthcoming).

Table 1. Checking a lexeme

Line	Test user	Transcription
01	T1:	alumnit; *alumni*
02		(.)
03	T1:	antavat työvinkkejä; *give work tips*
04		(2.8)
05	T2:	<°antavat°> *give*
06		(2.0)
07	T2:	°työ° *work*
08		(1.5)
09	T1:	työnhaku (.) vinkkejä. vai? *job application tips or*
11	T2:	oliko. joo. tuo; *was it yes that*

In Lines 1-2, test user T1 is dictating the text to T2 who is writing the invitation on the paper. The dictation includes the word *työvinkkejä* (‘work tips’). When T2, who reads aloud while writing, reaches the word (Line 7), he immediately leans towards the phone where the Appla transcription is on display and points

to the phone with his pen. In Line 9, T1 leans towards the phone and suggests an alternative word, *työnhakuvinkkejä* ('job application tips'), which is confirmed by T2 (Line 11). After the extract, T2 continues writing the invitation. He now uses the word *työnhakuvinkkejä*, found in the Appla transcript.

According to the interviews, test users found the application useful, for instance, for internships and other situations outside the language class. The idea that the application provides the user with an archive of workplace language to be studied later was anticipated. The shortcomings in the quality of transcription were addressed but were not seen as severe. Some test users emphasised that it was difficult to understand spoken language in written format.

4. Discussion

According to the pilot study, the Appla transcription seems to open up various possibilities for situated language learning (as discussed in Wagner, 2015). For example, the testers orient to the transcription as a source of words and linguistic formulations (e.g. in Table 1). Besides, the transcript serves as a starting point for language-related discussions. The test users found the application useful even though the imperfect quality of the transcriptions was addressed in the interviews.

5. Conclusions

With Appla we investigate how to support MALL in workplaces. Our approach is learner-based and its core is on speech recognition; the application makes a transcript of the interaction around the user and affords them possibilities to use the interactions as study material. In this way, the application supports a non-native employee and her work community to turn the workplace into an effective language learning environment. The pilot study is promising, and though more research is needed, this kind of approach could have practical implications for both L2 learners and L2 teachers.

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