Managing resource ecologies for mobile, personal and collaborative self-directed language learning

Joshua Underwood*, Rosemary Luckin & Niall Winters

London Knowledge Lab, 23-29 Emerald Street, London WC1N 3QS, United Kingdom

Abstract

MiLexicon is an innovative handheld system that helps self-directed learners employ personal learning environments in their language learning. We conducted interviews with experienced language learners in order to investigate the resources they use to support their language learning across formal and informal settings. Our analysis of these interviews reveals a process of self-initiated personal and collaborative language inquiry and identifies ways technology can support this kind of learning. Here we describe MiLexicon, a software prototype for Android phones, which we have developed to meet these requirements.

Keywords: informal learning; mobile learning; personal learning environments; self-directed learning

1. Introduction

We describe an innovative handheld system that helps self-directed learners employ personal learning environments (PLEs) to investigate vocabulary. Our work brings together research in PLEs and mobile learning and contributes to an under explored area in mobile assisted language learning (MALL) research by aiming to support learner-driven activity (Kukulska-Hulme & Shield, 2008). Our objective is to help users take charge of their language learning and connect this learning across varied times and locations and formal and informal settings. In essence MiLexicon, the system we are developing, consists of two interacting extensible collections. One collection contains the words and phrases a language learner

* Joshua Underwood. Tel.: +44 (0)20 776 321 37; Fax: +44 (0)20 776 321 38
junderwood@ioe.ac.uk
encounters, in the classroom or elsewhere, and chooses to explore. The other collection contains resources (people, software and other tools, strategies, media, etc.) that form the user’s PLE. Users add new language items to their word collection and miLexicon helps learners use their PLEs to research meaning and usage of these new language items and practice using them.

2. Method

In designing miLexicon we are employing the ecology of resources design framework (Luckin, 2010). This approach involves users in the iterative and participatory design of the system from the beginning. Initially, designers and users work together to describe the resources that are available or potentially available to learners in their particular settings, and to identify a specific learning focus for which to design support. To this end we have been interviewing experienced and successful independent language learners to better understand the range of resources they employ and the way their interactions with these resources interleave in stories they tell about their learning. Our analysis of these interview data, and particularly of accounts of how specific new words were acquired, enable us to focus on and describe a particular kind of learning for which we aim to design support. We refer to this as self-initiated personal and collaborative language inquiry. This kind of learning is typically initiated when a learner encounters new language and is personally motivated to investigate it further. Initially, the learner forms some kind of provisional hypothesis about meaning and use. Later this hypothesis is iteratively refined and tested through inquiry using tools (e.g. dictionaries, or texts with examples of use) and in collaboration with others (e.g. target language speakers, teachers, friends). In an exemplar scenario, a learner of English is watching a DVD at home and hears an unfamiliar word. In this context he feels he understands the meaning but he cannot spell the word to look it up in a dictionary. Later, he asks an English-speaking friend to watch the clip and she tells him the word is ‘awkward’. Now he can spell the word and later still he looks it up in a bilingual dictionary. However, this is just the beginning of learning ‘awkward’, it is some time before he starts to use it in his own conversation.

3. Results

We have derived several such scenarios, illustrative of self-initiated personal and collaborative language inquiry, and grounded in the accounts of learning given in interviews. We have used these scenarios to identify requirements and drive the design of an initial software prototype. One key requirement is that miLexicon should enable learners to initiate an inquiry into new language items as quickly and easily as possible in the settings in which items are encountered. Clearly mobile devices, which are frequently carried with users, are appropriate with regard to this requirement. However, the system should require minimum user input at this initial stage, and rather should support the learner in revisiting and deepening their inquiry at later times and in settings that are more convenient. In addition, the system should make it as easy and quick as possible for learners to research meaning and find example uses of new language items and to share language items with collaborators. Significantly, the particular resources offered to support a learner in carrying out the preceding three activities should be personalisable. We have developed prototype software, which runs on Android phones (see Figure 1), to meet these requirements. Using miLexicon, users can rapidly add new language items to a list for later study. They can also add personal favourite language resources (e.g. links to dictionaries, concordancers, newspapers, or contact details of friends who speak the target language). These resources are then available directly from a language item record, facilitating their use in further language inquiry. Resources for sharing word investigations and collaborating with others are also available directly from
language item records. For example, a tap on a menu means the user can post the item using a variety of means (Twitter, Facebook, SMS, email, etc.).

In future versions of miLexicon we aim to make it easier for users to suggest to other users of the system, useful resources to add to personal resource collections. This is important because learners are often unaware of the continually and rapidly growing range of resources available to them; they also often lack the knowledge and skills to make adequate choices about the resources that can support their learning and how to employ these (Clarebout & Elen, 2006). By promoting peer-to-peer collaboration and resource sharing we aim to raise awareness of the full range of helpful language resources available to learners. We also aim to prompt users to reflect on their own PLEs and the resources they and others use. To this end, each language item record keeps an inspectable history of the user’s interaction with the item and the resources they have used. By supporting learner reflection on resource use and the sharing of resources, in a similar way to Guth (2008) we aim to help learners acquire the skills required to develop and manage their own language learning PLEs.

![Figure 1. From left to right miLexicon interface components: (a) language item list; (b) a language item record; (c) user configurable resources available from the language item ‘look up’ menu; (d) resources available for sending the item from the ‘send to’ menu](image)

4. Conclusions

We have briefly described the process we are following in developing miLexicon and shown how our analysis of data from interviews with experienced language learners feeds into the design of mobile software to support self-initiated personal and collaborative language inquiry. Our work is at an early stage; nevertheless we have described some requirements that may be useful to other developers of mobile tools for self-directed language learning. We are currently engaged in rapid cycles of small-scale evaluation and development of miLexicon. A small but growing number of technically competent and experienced language learners are using miLexicon to support their language learning as it happens in natural conditions. These users have direct contact with the developer thus facilitating co-design and rapid
agile development iterations. In future work we aim to improve the support miLexicon provides for the learners to share resources and to reflect on their own and others’ uses of resources to support language learning.

References


Kukulska-Hulme, A., & Shield, L. (2008). An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL, 20*(3), 271-289.