

Developing and piloting an app for managing self-directed language learning: an action research approach

Elizabeth Lammons¹, Yuko Momata², Jo Mynard³,
Junko Noguchi⁴, and Satoko Watkins⁵

Abstract. Paper-based tools such as self-evaluation activities, learning plans, reflective journals and learning logs are commonplace for managing Self-Directed Language Learning (SDLL). Such tools not only promote ownership over learning and provide a sense of achievement to learners, but they also promote reflection and raise awareness of learning processes. Paper-based tools (‘modules’) for SDLL have been used successfully at a small university in Japan since 2003, but with the gradual introduction of student-owned iPads, the authors explore how technology tools have the potential to enhance the SDLL experience for learners. In this paper, the authors outline the rationale and process of adapting paper-based modules to create an iPad app. The paper then gives an overview of the research approaches that were chosen to systematically gather and analyse ongoing input from users. Finally, the authors share some of the preliminary findings from the pre-pilot and pilot phases of the project.

Keywords: self-directed language learning, app development, action research.

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1. Kanda University of International Studies, Japan; elizabeth-l@kanda.kuis.ac.jp
 2. Kanda University of International Studies, Japan; momata@kanda.kuis.ac.jp
 3. Kanda University of International Studies, Japan; jomynard@gmail.com
 4. Kanda University of International Studies, Japan; junko-n@kanda.kuis.ac.jp
 5. Kanda University of International Studies, Japan; watkins-s@kanda.kuis.ac.jp

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1. Introduction

In this paper we describe the rationale and the research approaches we adopted in order to design, develop, implement and evaluate an iPad app for managing SDLL. By way of background, we work at a private university near Tokyo in Japan where all of the students are majoring in languages.

In addition to attending classes, students are encouraged to make use of the well-resourced Self-Access Learning Centre ('the SALC'). All of us work full time in the SALC whose mission is to promote language learner autonomy through our advising, resources, learning communities and facilities. Four of us are learning advisors and one of us is an assistant manager.

We have been using 'self-directed learning modules' with our students for more than ten years. There are two paper-based modules: Effective Learning Module 1 (ELM 1) and Effective Learning Module 2 (ELM 2), both completely voluntary and lasting 8 weeks. For the first four weeks, ELM 1 introduces the learners to some essential SDLL skills which we had established from a needs analysis and subsequent SDLL curriculum development work (see [Thornton, 2013](#); [Takahashi et al., 2013](#) for more details). For the remaining four weeks, students implement their own plan of self-directed study.

ELM 2 is a follow-up module that begins with a learner designing his or her own eight-week plan and then implementing it with support from a learning advisor. Around 400 students take the modules each year and it could be said that these paper-based modules have been operating effectively for many years, but we wanted to capitalise on the affordances of the available technology to enhance transformative learning. By 'transformative learning', we mean learning which is socially mediated and results in reflection and ultimately shifts in thinking (e.g. [Mezirow, 1997](#)).

In order to conceptualise the desired affordances for the app, we drew upon the Framework-for-Action (FFA) developed by [Hughes et al. \(2011\)](#). By using the FFA, we believe that we can build on the strengths of the paper versions of the modules and use the technology to facilitate transformative learning.

Whereas it would be relatively simple to create an app which simply reproduced the current module in digital format, we wanted to go beyond what is known in the FFA model as 'replacement', and further enhance learning through 'amplification' and 'transformation' in the following ways:

Amplification

- Including interactive visual tools which would enable learners to visualise their progress more efficiently.
- Embedding activities where responses could be shared with others.
- Including ways for learners to be able track their own progress easily.

Transformation

- Enabling a smooth communication system between learners and their learning advisors.
- Including material in a variety of modes, e.g. audio, text, video, web links to appeal to different learner preferences.
- Enabling the sharing of ideas and progress between learners.
- Enabling learners to respond to advisors and record their learning in a variety of ways, e.g. audio, video, text, photos.

There were three other reasons why we were developing app versions of the modules. Firstly, new students are all asked to purchase iPads and there is an expectation (from students and parents) and interest in using the devices for all aspects of learning. In addition, the administrative systems could be streamlined and made more efficient to manage. Lastly, the university is transitioning to a paperless curriculum so there is an expectation that the SALC will make effective use of technology for learning.

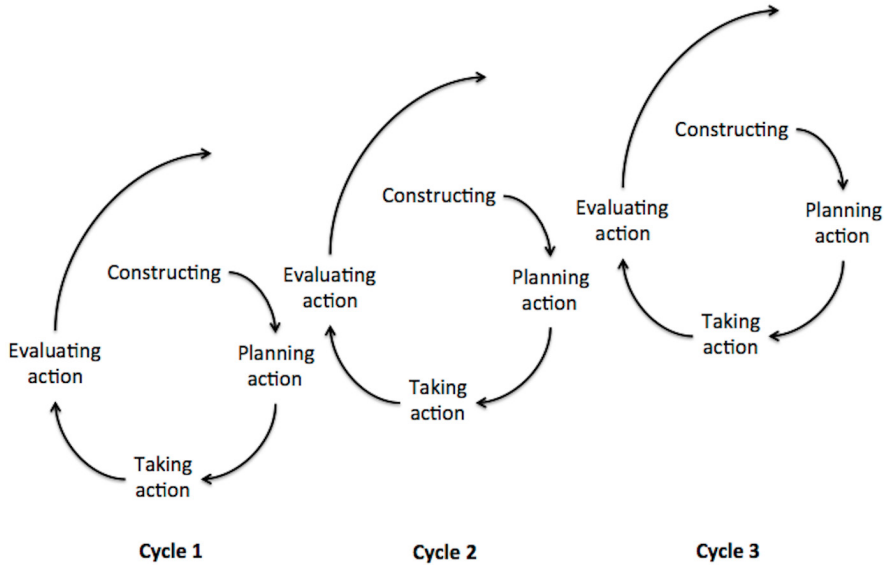
2. Method

2.1. Action research approach

An action research approach was adopted as the project is likely to continue for some time. We wanted to be able to gather data systematically, and make ongoing observations and changes at staggered intervals, so we drew upon [Coghlan and Brannick's \(2010\)](#) cyclical model of action research to guide our process ([Figure 1](#)). Within the model, each cycle informs the next one so the research can be broken down into a series of manageable, mini-research projects. The desired outcome –

which may take longer than three cycles – is a fully functioning app which is easy to use, supports SDLL effectively, and has the transformational qualities described in the introduction to this paper. Versions of the app will be revised to gradually include more features and increase degrees of ‘amplification’ and ‘transformation’ affording to the FFA (Hughes et al., 2011).

Figure 1. Cycles of action research (Coghlan & Brannick, 2010, p. 10)¹



2.2. Cycle 1: pre-pilot and pilot phases (January 2014-March 2015)

The purpose of Cycle 1 was to develop a basic version of the ELM 1 app and pilot it in order to notice issues and gather feedback in order to make the app ready for larger-scale implementation in April 2015. The cycle consisted of working with the developers to create a workable version of the app and piloting it with a limited number of students and learning advisors. The research questions were:

- What are learning advisors’ views on using the app?
- What are students’ views on using the app?

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- What can be observed from the ways in which the learners and learning advisors used the app?

Methods included open-response questionnaires (students and learning advisors), focus groups (students), and observation field notes. The main findings were that users were excited and motivated to use the app, however technical difficulties hindered usability and overshadowed learning benefits. The main changes that were made were related to ensuring that everything worked as planned. The appearance was also improved to include more colour, photos and a more attractive font.

2.3. Cycle 2: wider introduction of the app (January 2015-March 2016)

The purpose of Cycle 2 was to address the problems identified from the previous cycle, introduce the app to more students, notice how the app was being used, and gather feedback and usage statistics in order to make changes for April 2016 (Cycle 3). An updated version of the app was made available to students and we were involved in promoting the app, training users, and monitoring app usage. The research questions were:

- How successful was the uptake of the module app?
- What are learning advisors' views on using the app?
- What are students' views on using the app?
- What can be observed from the ways in which the learners and learning advisors used the app?

The methods used were descriptive usage statistics, mixed-item type questionnaires (students), interviews (students), observation/field notes, document analyses, and semi-structured discussions (learning advisors).

Data is still being collected, but preliminary observations indicate that (1) users' experiences with using the app tend to be positive, (2) the app allows for more frequent communication between advisors and learners, (3) learners use the app in different ways from the paper version, (4) the management system (for learning advisors) has some features which advisors find annoying and this influences their views on credibility and usability of the app. Once all of the data have been analysed, the research team will draw up a list of priorities and work with the app developers to improve the app for Cycle 3.

3. Discussion

An action research approach was appropriate for this kind of project and it has enabled research team members to manage the data collection, analysis and changes in a staggered and systematic way. Initial findings indicate that the app does seem to have the potential to be an effective tool for managing self-directed learning, however, there is much that can be done to improve the app. We are aware that the current version offers few examples of transformational learning, but we hope to incorporate these over the coming years. This is inevitably subject to budgetary constraints and to a certain extent technical limitations outside our control.

4. Conclusions

In this paper we have shared the rationale and framework for developing, implementing and evaluating an app for managing self-directed learning. Findings from research currently being collected will enable us to continue to develop it over the coming years.

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