Chapter 8
Beyond Small Chunks:
Designing Vocabulary OERs for Mobile Learning

Ingrid Barth
Tel Aviv University, Israel

Elana Spector-Cohen
Tel Aviv University, Israel

Rosalie Sitman
Tel Aviv University, Israel

Guhuai Jiang
Xi'an Jiaotong-Liverpool University, China

Fang Liu
Suzhou University of Science and Technology, China

Yan Xu
Suzhou University of Science and Technology, China

ABSTRACT

Although open educational resources (OERs) can help bridge high school-university vocabulary gaps, central questions remain unanswered regarding effective design that enables students to go beyond the "small chunks" that typically characterize vocabulary learning in mobile learning environments (MLEs). This bi-national study adopted a design-based research paradigm to collect input of students at two Chinese universities regarding design factors to overcome potential barriers to learning vocabulary in MLEs. The study iterated through a cycle of analysis, development, implementation, and evaluation with two cohorts of 222 and 136 students, respectively, over two years. Results showed that L1 translations correlated with significantly improved performance on basic-level vocabulary exercises and pop vocabulary quizzes. However, results suggest that moving mobile learning into the mainstream will require designing more effective scaffolding for complex vocabulary learning as well as clearer guidelines for optimal integration of PC and MLEs for supporting self-directed vocabulary study.

INTRODUCTION

This paper describes a design-based research study to identify factors that facilitate migration of vocabulary open educational resources (OERs) for self-directed study across different settings, from computer-based learning environments in EU and partner countries to students in China who prefer to use mobile phones rather than PCs to study vocabulary. According to Brown and Campione (1996), understanding how and why an innovation works across settings is essential for sustainable innovation. Thus, our first goal in this study was to understand how participants perceive the constraints that typically characterize mobile learning environments (MLEs). Our second goal was to identify effective instructional scaffolding that would enable participants to overcome these constraints and go beyond bite-sized chunks that all too often characterize vocabulary learning in MLEs. Our main assumption in this study is that computers and mobile phones represent different learning environments, each with their own affordances and constraints which should be carefully considered when deciding which learning environment to select in order to achieve different learning objectives. This premise is based on Moore (1973), who over forty years ago observed that there are specific functions for which each medium is best suited, and that the unique strengths of different media need to be combined to attain different educational goals.

This bi-national study was based on *Roads to Academic Reading (Roads),* a set of vocabulary OERs that were developed as part of an EU-funded TEMPUS project to align tertiary level EAP courses in project partner countries with the Common European Framework of Reference for Languages (CEFR). The CEFR for teaching, learning and assessing foreign languages is currently being implemented in over 120 countries, from Chile to China, and effective wide-scale dissemination of this framework may ultimately depend on the availability of robust OERs that are appropriate for learners not just in Europe but also in additional geographical regions. The OERs used in this study were originally designed for use in PC-based learning environments, and our third and final goal in this study was to obtain input from students in China regarding design features that would increase transportability from PC-based to mobile learning environments.

Before the study began, technical adjustments were completed to make the website 'responsive' (web pages detect the user's screen size and orientation and change the layout accordingly) to accommodate Chinese students' preference for MLEs. This preference has been well-documented in Zou and Yan, (2014) as well as in Zou, Li, and Li, (2018). No changes were made to website content, and length of texts as well as level of difficulty of advanced level exercises remained significantly different from the small chunks that often characterize vocabulary learning on mobile devices. In addition, the vocabulary website provided 'vocabulary netto' without animations, gamification and social elements typically found in vocabulary apps for mobile phones. According to Wang and Hannafin (2005), advancing design, research and practice concurrently, instead of separately, facilitates improvement of design by enabling design features to emerge from research participants' input. As will be described below, this two-year study created a unique opportunity to iterate through analysis, design, development and implementation, based on collaboration among researchers and participants in a real-world context to make these OERs as effective as possible for self-directed study in MLEs.

Related Content

The Development of a Personal Learning Environment in Second Life
Sandra Sutton Andrews, Mary Stokrocki, Angel Jannasch-Pennelland Samuel A. DiGangi (2010). *International Journal of Virtual and Personal Learning Environments (pp. 36-54).*
www.irma-international.org/article/development-personal-learning-environment-second/45891

Motivation, Engagement and Learning through Digital Games
Ioanna Iacovides, James Aczel, Eileen Scanlon, Josie Taylorand Will Woods (2011). *International Journal of Virtual and Personal Learning Environments (pp. 1-16).*
www.irma-international.org/article/motivation-engagement-learning-through-digital/53858

Discovery of New Knowledge for an LMS at Jordanian Universities
Abdeleh Bassam Al Amoushand Kamaljeet Sandhu (2019). *Open and Social Learning in Impact Communities and Smart Territories (pp. 187-214).*
www.irma-international.org/chapter/discovery-of-new-knowledge-for-an-lms-at-jordanian-universities/210412

The DE Hub Virtual Learning Space: A Niche Social Network Community of Practice
Nathan Wiseand Belinda Tynan (2012). *Physical and Virtual Learning Spaces in Higher Education: Concepts for the Modern Learning Environment (pp. 136-146).*
www.irma-international.org/chapter/hub-virtual-learning-space/56047

A Reflection of Transitioning to Online Learning: One Teacher's Advice to Her Colleagues
Suzanne Elizabeth Horn (2021). *Handbook of Research on Lessons Learned From Transitioning to Virtual Classrooms During a Pandemic (pp. 313-322).*
www.irma-international.org/chapter/a-reflection-of-transitioning-to-online-learning/276232