Chapter 14

Vocabulary CALL for Young ESL/EFL Learners: A Systematic Review of the Research Evidence

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ABSTRACT

This chapter presents a systematic review of empirical research on vocabulary CALL for primary and secondary learners of English as a foreign or second language published between 2004 and 2013. Twenty-two studies were identified, the majority of which focused on the use of multimedia to communicate the meaning of lexical items and mobile devices to provide “anytime anywhere” vocabulary training, and found a beneficial impact of the use of technology on vocabulary learning. However, while some of the studies provided a theoretically grounded rationale for their choice of technology, the design of some of the studies was found to limit their usefulness in terms of furthering our understanding of Second Language Acquisition (SLA) and building up an evidence base to inform the design of future vocabulary CALL. The chapter concludes by highlighting examples of studies that were found to contribute to furthering our understanding of CALL and SLA.

INTRODUCTION

With government initiatives all over the world introducing technology in schools (Macaro, Handley, & Walter, 2012) and the introduction of technology into the language curriculum (ibid.), technology is now a concern of primary and secondary school language teachers as well as university language tutors. Research on the use of technology in language teaching has, however, until recently focused on the tertiary sector (Bax, 2003). In response to this need, Macaro, Handley, and Walter (2012) recently undertook a systematic review of evidence for the effectiveness of new technologies in primary and secondary language learning – a systematic review involves an exhaustive literature search guided by focused review questions and synthesis of all high quality primary research identified in relation to those questions (EPPI-Centre, March 2007). Reflecting the im-


importance that has long been seen in devoting time

to vocabulary in language programmes (Wilkins,
1972) and recent research that supports Wilkin’s
claim that it is more important for learners to
acquire vocabulary than learn grammatical rules
(Barcroft, 2007a). Macaro et al. (2012) found that
vocabulary has long been a focus of research in
Computer-Assisted Language Learning (CALL).
In this chapter, I present a more in-depth exami-
nation of the literature on the use of technology
in vocabulary learning and teaching identified
in Macro et al.’s (2012) systematic review and
an update to it.

Following Pederson (1987), I believe that if
CALL is to progress, researchers need to build
a body of evidence upon which to base future
CALL software design. In order to achieve this,
researchers need to move away from atheoreti-
cal CALL versus non-CALL comparisons that
provide little, if any, insight into what feature of
a particular technology or piece software makes
it effective and begin to focus on researching the
differential impact of coding elements, specifi-
cally those features of a technology that might
have a differential impact on learning within the
framework of second language acquisition (SLA)
theory and research. Relating CALL research to
SLA theory and research is important because it
helps researchers find possible explanations for
the success or failure of CALL interventions and
make appropriate adjustments to their design.
Further, a number of CALL researchers have
noted the potential for CALL to make significant
contributions to the development of our under-
standing of SLA, by providing an environment
that can be used to operationalize SLA theory
and conveniently make sufficient observations of
learners’ behaviours to shed light on the complex
process of language acquisition (Doughty, 1987;
Goodfellow, 1995). Reviews of the CALL litera-
ture, however, suggest that little CALL research
draws on and contributes to theory (Hubbard, 2008;
Levy & Stockwell, 2006), and, where it does, it
most often draws on SLA to inform the design of

a piece of software or an intervention and rarely
exploits CALL to operationalize and test SLA
theory (Chapelle, 2009; Hubbard, 2008; Levy
& Stockwell, 2006). With a view to establishing
an evidence base upon which future vocabulary
CALL can be developed, I, therefore, elaborate
on Macro et al.’s (2012) analysis of vocabulary
studies and situate them within the broader body
of research in the field of SLA and consider the
degree to which the research has the potential to
inform the design of future CALL software and
help us better understand SLA.

BACKGROUND

It has long been acknowledged that mastering
the vocabulary of a language plays an important
role in SLA. Not only has vocabulary knowledge
been shown to be more important than grammar
(Barcroft, 2007a), but it has also been shown to
correlate strongly with a range of measures of
language proficiency including grammar, reading,
listening and writing, and account for 37-62% of
the variance in measures of language proficiency
(Alderson, 2005). Further, vocabulary acquisition
is an enormous task. It is estimated that in order to
engage in daily communicative activities, learners
need to know 6,000 to 7,000 word families and
in order to read novels and newspapers, 8,000 to
9,000 word families (Nation, 2006). Estimates of
the number of words that learners need to master
in order to achieve native-like proficiency rise to
16,000 to 20,000 word families (Schmitt, 2010a),
where a word family “consists of a headword, its
inflected forms, and its closely related derived
forms” (Nation, 2001, p. 8). Moreover, there is
considerably more to knowing a word and being
able to use it than knowing the form-meaning
mapping (Nation, 2001). From the perspective
of reception, Nation notes that knowing a word
involves knowing what the word looks and
sounds like, and recognising its parts, knowing
its meaning, the intension and extension of its