

## Chapter 95

# 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

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questions (EPPI-Centre, March 2007). Reflecting the 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 examination of the literature on the use of technology in vocabulary learning and teaching identified in Macaro 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 atheoretical 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, specifically 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 understanding 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 literature, 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 Macaro 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

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