**Flashcard-based design and spaced repetition in Computer Aided Language Learning (CALL): a literature review**

**Abstract**

**Purpose** – This literature review’s purpose is to address the following questions: How does the design of a flashcard-based Computer Aided Language Learning (CALL) application affect a user’s ability to acquire and retain language? What effect does spaced repetition have on the acquisition and retention of language in CALL applications? What other learning techniques can be used with such CALL applications to increase the efficiency of language acquisition and retention?

**Methodology**

*Search and selection strategy*

Google Scholar and the University of Portsmouth’s library Discovery and catalogue search to find papers and books to get a rough feel and overview of the topic areas, journals and research.

Scimago Journal and Country Rank was then used to find narrow down findings to journals that are reliable and peer reviewed. Papers related to computer assisted learning will be limited to papers from the past 5 years (2013 and onwards) to ensure relevancy.

*Refining the search criteria*

* *English only*
* *Papers on Japanese language favoured over others*

Journals of interest and relevance are:

* Computers and Education
* Journal of Computer Assisted Learning
* Language Learning
* The Modern Language Journal
* Studies in Second Language Acquisition
* Computer Assisted Language Learning
* Language Learning and Technology
* Journal of Experimental Psychology: Learning Memory and Cognition
* Brain and Language

The papers found in language and linguistics journals will be limited to second language acquisition and selected upon relevance.

The papers found in psychology journals will be selected upon relevance.

**Findings**

**Research limitations**

**Practical implications**

**Introduction**

**Advantages and dis-advantages of flashcard-based interfaces**

**Flashcard design**

* *Note specifications for certain devices and operating systems*
* *Discuss any other design elements*

**Spaced repetition and the Leitner system**

* *Forgetting curve, Leitner algorithm*

**Spaced repetition algorithms**

* *Discuss the many different implementations of the SM2 algorithm and its flaws*
* *Discuss other algorithms*

**Conclusions**

**References**