

## THE EFFECTIVENESS OF FLASHCARDS IN TEACHING ENGLISH VOCABULARY

<https://doi.org/10.5281/zenodo.23295724>

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### Abstract

This article reviews research on the effectiveness of flashcards, also called word cards, in teaching English vocabulary. It draws on a research synthesis of 32 word-card studies, experiments comparing flashcards with word lists and computer programs, studies of deliberate learning, and recent work on digital flashcards. The evidence shows that flashcards generally lead to vocabulary gains, that the gains reach implicit as well as explicit word knowledge, and that their value depends on how they are used, especially on whether learners practise recall and review words over time. Findings on paper versus digital cards, and on massed versus spaced use, are mixed. Most studies, however, measured only recognition of form and meaning, often without control groups or delayed tests, so claims about deeper word knowledge remain tentative. Practical guidelines for using flashcards are offered.

### Keywords

flashcards, word cards, vocabulary learning, deliberate learning, digital flashcards, EFL, retrieval practice.

### INTRODUCTION

Learners of English as a foreign language need thousands of words, and teachers constantly look for the quickest reliable way to help them learn those words. Flashcards are among the oldest answers: a word or phrase on one side, its meaning on the other, practised until the learner can recall it. Because a card isolates one word and asks the learner to retrieve it, it is a focused and efficient way of studying vocabulary (Nation, 2013). Flashcards have also been criticised. Because they present words outside any text, they were often seen as old-fashioned once communicative approaches became dominant, and many teachers doubted that card learning leads to real knowledge of a word (Elgort, 2011). At the same time, flashcard programs and mobile applications such as Quizlet and Anki have made cards more popular than ever. The question is therefore not whether learners use flashcards, but how effective they are and under what conditions. The aim of this article is to review research evidence on the effectiveness of flashcards in teaching

English vocabulary, to identify factors that influence it, and to draw practical conclusions for teachers.

## METHODOLOGY

This is a narrative literature review. It covers a large research synthesis of word-card studies, experiments that compared flashcards with other study materials, research on deliberate vocabulary learning, and recent studies and reviews of digital flashcards, published between 2008 and 2024. Sources were located through open scholarly databases and journal websites, and abstracts or full texts were read before use. No formal systematic-review protocol was applied, so the selection is not exhaustive.

The review addressed five questions:

1. How effective flashcards are compared with other study materials;
2. Whether card learning produces genuine word knowledge;
3. Whether paper or digital cards work better;
4. How the way cards are practised affects results;
5. What the existing studies measured and what they leave out.

## RESULTS

A research synthesis of 32 word-card studies, selected from 803 candidates, found that 24 reported a positive effect on vocabulary learning and 8 reported no change; none reported a negative effect (Lei & Reynolds, 2022). A direct comparison was made by Nakata (2008), in which 226 Japanese high school students studied ten English words from word lists, paper cards or a computer program. Computers proved superior to lists, cards had only a limited advantage over lists, and there was no statistically significant difference between cards and computers. On the delayed test, the list group recalled four of the ten words significantly less often than the card or computer groups.

Elgort (2011) tested whether words learned deliberately from cards become knowledge that learners can use automatically, and found that such learning led to implicit as well as explicit knowledge of the new words. Nation (2013) argues that deliberate learning from cards is so efficient that a course combining it with communicative activities will build vocabulary faster than a course relying on incidental learning alone; cards studied before a word appears in a text make the text easier, and cards studied afterwards make the learning more meaningful.

In the synthesis by Lei and Reynolds (2022), more studies showed larger effects for paper cards than for digital cards, and for ready-made cards than for self-made ones. A review of recent studies, however, concluded that digital flashcards promote learner autonomy, engagement and long-term retention through spaced repetition and gamification, whereas paper cards lack these

interactive and personalised features (Teymouri, 2024). In an experiment with university students, a group using the Quizlet application outperformed a group using word lists in academic vocabulary and also improved its capacity for self-regulated vocabulary learning (Boroughani et al., 2023).

Karpicke and Roediger (2008) found that, once students had recalled a word correctly, further studying of it had no effect on recall a week later, while continued testing of it had a large positive effect. Kornell (2009) showed that studying one large stack of cards, which spreads repetitions of each card further apart, was more effective than studying several small stacks, and that spacing was more effective than cramming. By contrast, Lei and Reynolds (2022) found larger effects in the few studies that used massed practice within a single day than in those that spread practice over several days, but only three studies used massed practice, and the authors themselves recommend massed study when words are first met and spaced practice for later retrieval.

More proficient learners gained more from cards, and the studies with beginners showed negligible effects (Lei & Reynolds, 2022). Time spent on cards was only weakly and non-significantly related to learning, which suggests that how learners study is more important than how long they study.

In the synthesis, 72% of studies that reported the type of knowledge tested receptive knowledge of meaning, while knowledge of how a word is used was tested in very few: receptive use in 14% of studies and productive use in 7%. Only a third of the studies had a control group, 29 of 32 used tests made by the researchers, and only 8 included a delayed posttest (Lei & Reynolds, 2022).

## DISCUSSION

Taken together, the studies suggest that a flashcard is a tool whose value depends on use rather than a method that works by itself. The reported gains are consistent, yet they are modest when cards are compared with well-organised word lists, and the apparent differences between paper and digital cards are probably caused by how the studies were designed rather than by the format. What digital programs clearly add is convenience: they can schedule reviews, force the learner to recall before seeing the answer, and keep a record of what has been learned, which are exactly the practices that memory research supports (Karpicke & Roediger, 2008; Kornell, 2009; Teymouri, 2024). The finding that cards help more proficient learners more may reflect a simple fact: learners who already know many words can link new words to existing knowledge. For beginners, a card with only a translation may be too thin, so adding a picture, a short example sentence or a collocation can compensate. Such additions also address the main criticism of cards, namely that they present words outside any context.

Several practical guidelines follow from the evidence:

introduce words from real texts or lessons first, so that cards consolidate words learners have already met;

practise recall in both directions, from the English word to its meaning and from the meaning to the English word, instead of simply reading the cards (Nation, 2013);

study new words together in one session at first, then return to them on later days to practise retrieval, as Lei and Reynolds (2022) recommend;

do not remove a word after one correct answer, because further recall, not further reading, is what strengthens memory (Karpicke & Roediger, 2008);

use a flashcard application if scheduling is a problem, but teach learners how to use it, since time spent alone does not guarantee learning;

combine cards with reading, listening and speaking so that words are used as well as recognised.

The limitations of the existing research are substantial. Most studies tested whether learners recognise a word's form and meaning, and very few tested whether they can use it correctly in speech or writing. Many lacked control groups and delayed tests, many used tests designed by the researchers, and the studies were conducted mainly with university and secondary students in a few countries (Lei & Reynolds, 2022). Recent reviews also identify the need for more research on productive use and long-term retention (Teymouri, 2024).

## CONCLUSION

Flashcards are an effective, efficient way to teach English vocabulary, and card learning can produce knowledge that is also available for automatic use. Their effect is strongest when learners recall words actively and return to them over time, and weakest when cards are treated as a list to be read. Whether cards are on paper or on a screen matters less than the quality of practice. Future research should test the effects of flashcards on productive vocabulary and on retention after several months, using control groups and standard tests.

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