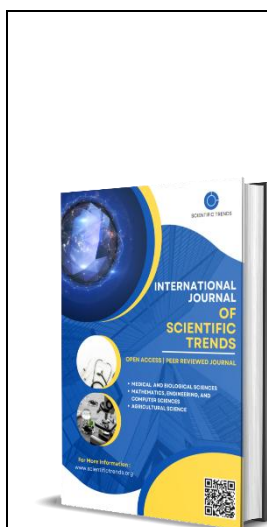# Effects of Pre-Reading Study and Reading Exposure on the Learning and Processing of Collocations

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Abstract

Little is known about how pre-reading activities influence the learning of word combinations, known as collocations. This study investigated the impact of pre-reading study and reading exposure on processing and learning new collocations using eye-tracking and tests measuring recall and recognition. Three methods were compared: reading-only, where the target phrases were included in sentences; study-only, where learners explicitly studied the phrases; and pre-reading study plus reading, where learners studied the phrases before encountering them in sentences. The results showed that pre-reading study plus reading was the most effective method, followed by reading-only, which outperformed study-only. Studying collocations before reading helped learners pay more attention to them during reading, and greater attention during the pre-reading study phase, as indicated by eye fixations, was linked to better learning outcomes.

Keywords:

Introduction

Reading plays a key role in learning vocabulary in a second language (L2) (e.g., Pellicer-Sánchez, 2016; Pellicer-Sánchez & Schmitt, 2010). Successful vocabulary learning often depends on how much learners engage with the words while reading (Hulstijn & Laufer, 2001). However, because many words are not common or noticeable, learners might overlook them unless something draws their attention (Laufer & Girsai, 2008). Methods such as input flood, where a word appears multiple times in a text, and input enhancement, like underlining or highlighting words, are commonly used to make words more noticeable. Another method, which is less researched but widely used in teaching, is introducing words through pre-reading activities before learners encounter them in a text. While much of the existing research focuses on single words, little is known about how these techniques affect the learning of word combinations, such as collocations, which is the focus of this study.

Collocations (e.g., strong wind) are pairs of words that frequently appear together (Sinclair, 1991). While existing collocations can be identified through language data, learners encountering new

word pairs for the first time would not recognize them as collocations. To explore how learners process and learn these new word pairs, this study created novel collocations (e.g., cynical viewers) to examine the early stages of collocational learning.

Since collocations are a fundamental part of language (Sinclair, 1991), understanding them is crucial for learners to communicate effectively and achieve fluency in an L2 (Hill, 2000; Siyanova-Chanturia & Pellicer-Sánchez, 2019). Given the limited time available in classrooms, it is important to find efficient teaching methods, which is why attention-drawing techniques are worth exploring. However, research has not yet examined how pre-reading activities, as a way of drawing attention, might help learners with collocation learning. Additionally, most studies have used tests after reading to assess learning, with little focus on how learners process collocations during pre-reading activities and how this influences their later reading and learning. This study addresses these gaps by exploring the connection between learners' attention to new collocations during pre-reading and reading (measured through eye-tracking) and their ability to recall and recognize these collocations later.

Attention-Drawing Techniques

One reason learners often struggle to acquire collocations through reading is their difficulty in recognizing collocations (Boers, 2020). The boundaries created by written text can make it harder for learners to identify groups of words that typically occur together (Bishop, 2004). Instead, learners tend to focus on individual words rather than their combinations. As a result, collocations may be overlooked during reading, especially when they are transparent or made up of familiar words (e.g., *do your homework*) (Boers, 2020).

Researchers have studied ways to make collocations more noticeable, such as input enhancement techniques like bolding or underlining. These techniques are practical because they are easy to include in teaching materials, require less effort than direct teaching, and take up minimal classroom time. According to Schmidt's (2001) Noticing Hypothesis, attention and awareness are crucial for language learning. Techniques that highlight target items can encourage deeper processing and greater focus, which may lead to better learning outcomes.

Attention-Drawing Techniques and Formulaic Language

Although attention-drawing techniques have been researched in relation to collocations, most studies focus on input enhancement, with less attention given to pre-reading activities, the focus of this study. Research by Sonbul and Schmitt (2013) showed that input enhancement led to better learning of collocations than unenhanced conditions, a finding supported by Toomer and Elgort (2019). Szudarski and Carter (2016) further found that fewer repetitions were needed for learning when collocations were enhanced.

However, most of these studies used offline tests to measure learning, which do not capture how knowledge develops gradually or how much attention learners pay to target items during learning (Joseph et al., 2014). Eye-tracking, on the other hand, provides real-time data on how learners process text, making it a reliable way to measure attention during reading (Conklin & Pellicer-Sánchez, 2016). Research has shown that longer fixation times on words are linked to better learning outcomes (e.g., Godfroid et al., 2013; Mohamed, 2018; Pellicer-Sánchez, 2016). For

example, Indrarathne and Kormos (2017) found that the time spent processing grammatical structures was positively related to learning gains.

Studies focusing on collocations have been limited. Choi (2017) found that input-enhanced collocations attracted more attention, as shown by longer fixations, and led to better recall compared to unenhanced collocations.

Pre-Reading Exposure

Most research on attention-drawing techniques in language learning has focused on enhancing text during reading. However, another method to make target items more noticeable is pre-reading exposure, where learners are introduced to target words before reading. This approach, though less studied, allows learners to form initial word-meaning connections that can be reinforced during reading. According to Nation (2001), teaching vocabulary before reading helps learners focus on target items, improves comprehension, and supports word learning without taking much classroom time. Pre-reading exposure is seen as a "consciousness-raising" strategy that prepares learners for subsequent tasks.

File and Adams (2010) compared pre-reading instruction, instruction during reading, and a reading-only approach. They found that teaching target words before or during reading led to greater learning gains than simply encountering the words in text. Interestingly, pre-reading and during-reading instruction were equally effective.

A relevant study by Pellicer-Sánchez, Conklin, and Vilkaitė-Lozdienė (2020) examined the impact of pre-reading instruction on learning pseudowords (nonsense words). Learners in the pre-reading group were explicitly taught the target items before reading a text where the items appeared repeatedly, while other groups either encountered the items in the text without pre-reading instruction or received no instruction. Eye-tracking data showed that the pre-reading group learned more than the reading-only group and paid more attention to the target words during reading.

A follow-up analysis by Pellicer-Sánchez et al. (2021) found that when exposure levels were equalized between the pre-reading and reading-only groups, pre-reading still led to greater attention to target words. This suggests that pre-reading activities prime learners to focus on key items during subsequent reading.

The Present Study

Despite evidence of the benefits of pre-reading activities for vocabulary learning, little research has explored their effect on collocational learning. Learning collocations requires understanding how words pair together, which is different from learning individual words. Additionally, previous studies have not investigated how attention during pre-reading activities influences later reading behavior and learning outcomes.

This study aims to fill this gap by using eye-tracking to measure attention during pre-reading and to explore its relationship with reading behavior and collocation learning. Learners are expected to vary in how much time they spend studying collocations during the pre-reading phase, which may affect their engagement with these items during reading. Both online (eye-tracking) and offline (recall and recognition) measures are used to provide a detailed understanding of how attention during pre-reading influences processing and learning.

CONCLUSION

The current study investigated the effectiveness of different learning conditions for the learning and processing of novel collocations. Results showed that collocational learning benefited most from the combination of pre-reading study and reading exposure than either alone. The results underscore the importance of bringing collocations to learners' attention before reading—this helps them to further develop their knowledge during reading. The amount of attention that learners paid to collocations in pre-reading study was positively associated with the amount of attention paid to the same collocations in reading, suggesting that increased attention to the items in pre-reading may have increased their salience and promoted depth of processing in later reading. There was also a relationship between processing patterns in pre-reading study and learning gains. Generally, more "study" in pre-reading led to better recall and recognition. The study provides evidence for the importance of pre-reading study in the learning and processing of new collocations.

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