

## Retention Techniques in Vocabulary Acquisition: Strategies for Enhancing Long-Term Memory

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تقنيات الاحتفاظ في اكتساب المفردات: استراتيجيات لتعزيز الذاكرة طويلة الأمد  
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### Abstract

This study aims to explore techniques or mechanisms that could enhance long-term retention in learning. Retention techniques like related vocabulary learning aim to enable learners to apply what they have learned in the long-term retention to practice. However, little literature focused on the differences in vocabulary-related retention techniques. This study aims to explore the differences in memory-based retention techniques in the field of vocabulary learning. This will be fulfilled by reviewing the differences of the memory corner and word's corner, and the relationship between different linguistic dimensions including vocabulary size, productive knowledge, receptive knowledge, and vocabulary-related retention techniques

**Key words:** Retention, enhancing, long-term memory, techniques, vocabulary knowledge

### المخلص:

تستهدف هذه الدراسة استكشاف التقنيات أو الآليات التي يمكن أن تعزز الاحتفاظ طويل الأمد في التعلم. تهدف تقنيات الاحتفاظ مثل تعلم المفردات ذات الصلة إلى تمكين المتعلمين من تطبيق ما تعلموه في الاحتفاظ طويل الأمد على الممارسة. ومع ذلك، ركزت القليل من الأدبيات على الفروق في تقنيات الاحتفاظ المتعلقة بالمفردات. تهدف هذه الدراسة إلى استكشاف الفروق في تقنيات الاحتفاظ القائمة على الذاكرة في مجال تعلم المفردات. سيتم تحقيق ذلك من خلال مراجعة الفروق بين زاوية الذاكرة وزاوية الكلمة، والعلاقة بين الأبعاد اللغوية المختلفة بما في ذلك حجم المفردات، المعرفة الإنتاجية، المعرفة الاستقبلية، وتقنيات الاحتفاظ المتعلقة بالمفردات.

**الكلمات المفتاحية:** الاحتفاظ، التعزيز، الذاكرة طويلة الأمد، التقنيات، معرفة المفردات.

### 1. Introduction

Learning vocabulary is one of the essential skills in learning a foreign language, and it has become an increasingly important research area in foreign language education. The effectiveness of individual vocabulary learning determines one's success in learning a language. While technology has expanded the means of language learning and teaching, it is important to retain newly learned vocabulary for a longer time. Vocabulary retention refers to the maintenance of vocabulary knowledge. People usually assess vocabulary learning in terms of retention. According to research, long-term memory refers to an almost unlimited amount of information that is processed by stored information.

Elaborative retrieval is an effective technique to facilitate vocabulary retention. The retrieval practice with concurrent feedback is conducive to vocabulary learning compared with the

feedback given after all responses have been made or no feedback. Incremental rehearsal and vocabulary retrieval practice can exert equal effect and both of them render a better outcome than pure rote repetition.

## **2. Memory and Vocabulary Learning**

Memory mechanisms were explored much during the last century and their development has contributed to our understanding of how humans retain verbal material for a long period of time. This, however, occurs largely within the realm of the "multicomponent" model of working memory proposed [1]. The store of item information is retained in verbal short-term memory and then temporarily stored in the long-term store for retrieval in the future and, therefore, the item information needs to be encoded, stored, and retrieved differently in vocabulary learning and retention. To have productive language, young language learners should maintain the information in the long-term store for tens of years to a lifetime. Thus, viewing the storage mechanism as a single component in long-term memory for vocabulary learning seems to be more appropriate. A tripartite model suggests that the storage mechanism can be roughly divided into three stages: first, the information must be encoded; second, it must be stored; and third, it must be retrieved. This storage model can explain how new word meanings are memorized, developed, and changed in memory in vocabulary learning and retention of multilingual speakers.

Vocabulary learning has been increasingly recognized as a process during which learners store words in their long-term mental lexicon through three cognitive processes of the mind. The first is called the "encounter" or the "Attention", which means noticing a word in the input. The second process is referred to as the "storage mechanism", and it has also been called "processing", which is an incomplete form, storing information temporarily in memory, and a change has taken place in the learner does not yet have full access to it. The third is "integration" or "consolidation", which is considered as "vocabulary retention", in which the meaning of a new word enters the learner's long-term memory.

## **3. Retention Theories**

Interference Theory is a theory regarding human memory. Basically, there are two types of memory: long-term memory (LTM) and short-term memory (STM). The capacity of the STM is limited, while the LTM has potential capacity [2]. Improving the learning and memory process in the comprehensive approach is aimed at retaining knowledge for a long time in long-term memory rather than in short-term memory.

It is known that related information is remembered more clearly. mentioned that we need to define the concepts first. Otherwise, if we do not allow learners to clarify, the information given will be pseudo-knowledge. After the concepts are defined, repetition should be provided at regular intervals. In short, the retention of information takes place over time. Furthermore, stated that the relationship between the meanings of the target word is stronger than the translations of these meanings.

## **4. Factors Affecting Vocabulary Retention**

Out of many factors influencing the retention of vocabulary, the following are considered the essential factors in vocabulary retention.

### **4.1 Frequency of Exposure**

It seems reasonable to apply spaced practice to consolidate working memory traces. propose that spaced practice is crucial in optimizing consolidation and in the retrieval of working memory traces. Starting from these insights, it can be hypothesized that the learning can occur

with spaced practice, since it allows for consolidation in working memory and, thereby, leads to longer retention.

More frequent exposure will lead to higher retention, the challenge lies in determining the threshold beyond which new words would be retained for the long-term [3]. There is no agreement in the literature on the appropriate frequency of exposure that would lead to long-term retention. Consequently, the optimal number of encounters or repetitions necessary for retention is under experimental investigation.

#### **4.2 Contextual Learning**

In addition, the encoding processing which is more deeply hardwired into an organism completely can provide more boycotted than the shallowly hardwired enjoys in coming into contact with the aim of vocabulary learning. The best encoding processing way for word learning should be the natural learning for vocabulary.

Stimulating associative learning is important in vocabulary learning, particularly in lexical access from LTM. If there are perceptually related items in the long-term store, it is worth attempting to recognize those items as vaguely familiar, especially when the target item is not easily available in memory, a point when readers are more likely to lean on item-specific lexical information [4]. The encoding processing shall make it easier to tap into those LTM caches. According to readers' memory, word memory traces in LTM can strengthen the trace following by a given word when both word and concept categories are involved, including improving the target words' memory retrieval connection with to-be-learned word pairs.

### **5. Effective Vocabulary Learning Strategies**

This part explores the effective strategies of learning vocabulary and provided a clear explanation about them.

#### **5.1 Repetition and Spaced Practice**

Repetition is the keyword of long-term memory [5]. In fact, long-term retention depends, to a very large extent, on the number of times a new word is retrieved from memory. Every time a memory item is successfully retrieved, the item gets a new lease on life, if only a little one. As it is retrieved again and again, the item's prospects improve gradually. The more you can remember from memory, therefore, the better. Helpful in this regard is the space between the time of initial learning and subsequent attempts to retrieve the new word from memory [6]. If more time is allowed to elapse since the item's last retrieval, when retrieval does occur, it is generally more powerful.

These more powerful retrievals ensure more powerful growth in memories and longer protection against forgetting. This is the spacing or distributed practice effect in memory. Nowadays, designs that incorporate the spacing or distributed practice effect have been called spaced education or spaced learning designs.

#### **5.2 Mnemonics and Memory Aids**

Mnemonics and memory aids are tools to help recall information that has been stored in long-term memory by association to other information already stored in long-term memory [7]. The application of mnemonic strategies when learning can assist in increasing retention of vocabulary. An effective mnemonic device could be an acronym, which is a word formed from another word, usually, the first letter of each word forming the stems or beginning of the words in a phrase or series which is easily committed to memory.

## 6. Technology-Assisted Vocabulary Learning

Technology has gained recent interest in the field of language learning. A study was conducted by Ajisoko to investigate the use of e-learning, computer assistance, and web-based instruction, to determine its effects on enhancing active vocabulary knowledge compared to traditional classroom instruction [8]. One of the indicators they used to perform their study was to examine the use of vocabulary tests as post-tests to obtain a vision of whether the vocabulary has been retained over time [9]. Technology shown to aid in the enhancement of vocabulary learning and retention, in part by appealing to its users, may have a large effect on enhancing the long-term memory of participants learning new vocabulary words.

### 6.1 Vocabulary Apps and Platforms

The use of vocabulary apps has significant potential for memory retention. According to the theory, by increasing interaction, reducing cognitive overload, and intensifying communication rates, digital technologies become an excellent asymptote for the placeholders to facilitate memory retention. The use of apps in learning offers the advantage of self-selecting and slowing down the pace of learning while giving flexibility in accessing learning materials at any time [10]. It is claimed that learners achieve at least the same extent as in classroom settings when memorizing through using vocabulary apps.

Providing learners with rich vocabularies has been given great importance. There have been several studies that have reported on the effectiveness of the use of digital applications and platforms that have been designed to teach vocabulary in a user-friendly and attractive manner. These applications have many features. They use means that are completely different from traditional vocabulary books, which use a variety of information such as images, audios, and videos to describe vocabulary items. They use embedded language learning strategies. They alert students about vocabulary for a certain time and repeat the same vocabulary in one lesson and through several lessons that follow. Various vocabulary mobile applications (apps), web-based applications, and software have been developed in order to take advantage of the features of digital technologies.

### 6.2 Virtual Reality and Immersive Learning

Virtual Reality VR has the potential to create meaningful and memorable learning experiences [11]. There have been some efforts made to integrate VR in the field of education and learning. Virtual reality could offer the experience of being in an environment of a particular language. Ensuring it will be a unique blend of immersion, presence, and immediacy help with remembering words.

## 7. Assessment of Vocabulary Retention

Testing could potentially test a limited facet of retention (i.e. words activated in response to a test item). Quizzes and testing give us some idea about the occurrence of a vocabulary item in the learners' mental lexicon, however, the high level of retrieval demand in an exam increases access between items and also increases the accessibility of these items in the lab environment.

There have been several traditional and more recent techniques used to assess vocabulary acquisition through the lens of retention [12]. These take the form of quizzes in class, quizzes for online revision, or formal testing at midterm or final exams. All of these measures of retention can indicate to the teacher the extent to which the students have retained the vocabulary, and to the students their own success in learning words. These techniques can, of course, be very useful to the learners in that they give the students feedback on their language

learning process. However, do they tell us about the long-term retention of the words? Does a successful grade in a test immediately after learning indicate reliable long-term retention? Cognitive research informs us that quizzes and testing are generally very effective for learning and retention.

Given these concerns, new and innovative assessment methods have been developed to address how vocabulary knowledge is assessed. Some of these new methods are particularly interesting because they have been designed to explore learners' knowledge of word meaning at different levels and to examine long-term memory for word meanings. Interactive computer assessment techniques collect information on individual learners' lexical representations while requiring less extensive human input to determine word meaning responses [13]. No item may be practiced more than once, preventing learners from learning the entire list before they are tested, and requiring learners to make judgments about word meanings that they may not feel prepared to provide. For example, the Web-based Vocabulary Learning Task presents words and offers a choice of synonyms for the unfamiliar words.

### **8. Practical Applications and Classroom Strategies**

Sharing vocabulary characteristics and cognitive mechanisms behind successful vocabulary retention has practical implications for teachers and learners. The choice of the right retention technique might positively influence the strength of the memory over time [14]. In the classroom, learners might benefit from using vocabulary learning journals, various kinds of vocabulary games, or increasing the exposure time to less familiar words and focusing on active engagement with vocabulary, e.g., through interaction and sharing newly acquired knowledge with others [15]. Learners might also attempt to add additional activities aimed at experiencing the unique mnemonic effect when encoding the information or implementing multisensory learning with consciously perceived distinctive features.

Most importantly, the memorable context would help students in learning, store the words they have learned in long-term memory, and retrieve the required words when the need arises. Research has found that flashcard vocabulary in their relevant contexts is preserved better than learning vocabulary from flashcards alone [16]. The superior recall of S+P-sentences suggests that the incorporation of context could connect the word to the theme, so it lasts longer in memory compared to the contextual association in the L1 structure alone.

Vocabulary learning games are known to increase motivation and provide for more interaction by reducing stress in the classroom. Students are more likely to remember and use vocabulary in developed contexts. In vocabulary instruction, employing games also reduces students' boredom, while breaking the routine. Integrating into class games, the Ampo series and the target vocabulary is expected to aid in retention.

### **9. Cross-Linguistic Influence in Vocabulary Retention**

The cognitive mechanisms underlying multilingual word retention have been studied for the most part in L2 settings. Cross-linguistic influence (CLI) on the retention of target words that bear either a form relationship between the to-be-learned items and the learners' native language (L1), or a conceptual relationship between the new words and the learners' L1 [17]. The aim is to demonstrate the perception and learning problems that arise for learners who encounter words in a new language that are similar to existing knowledge in their L1, and also to demonstrate that such influences can be positive.

A common assumption in theories of vocabulary acquisition is that knowledge of multiple languages can lead to benefits in vocabulary retention. This applies to both individuals who

are learning their second language (L2) or those acquiring their third language (L3). The influence of prior knowledge on the retention of new words is often referred to as transfer. Transfer effects are generally assumed to occur if the information from one language will aid the retention of vocabulary items in another. However, not all transfer effects are beneficial. Apart from transfer, the retention process can be influenced negatively by the prior knowledge of another language. This type of influence is known as interference and occurs through a competition between languages.

### **10. Neuroscience Insights into Vocabulary Learning and Retention**

Neuroscience has put forward a plausible way of understanding the impact of retention in long-term memory in the field of language vocabulary learning. In this field, retention is important because when vocabulary is forgotten, it is difficult to learn it again and store in long-term memory [18]. The retention techniques are practicable to incorporate processing in language education and improve the effectiveness of vocabulary learning by enhancing its retention. Researchers can develop vocabulary learning materials capitalized on these techniques. This research contributes valuable insights for teachers and learners to improve language methodology research and teaching and learning materials.

### **11. Future Directions in Vocabulary Retention Research**

Researchers and practitioners are continuously searching to find a robust way to improve the learning of new words and phrases and to help learners retain those new words in their long-term memories [19]. Generally, research in the domain of vocabulary focuses mainly on the effect of different vocabulary exercises, such as guessing whether learning words in context or in isolation is beneficial for vocabulary learning or not. There are several areas that have not been fully explored yet regarding retention techniques. Future research could further explore the effect of saliency in the manipulation of research depth of processing on retention [20]. This is based on the fact that salient words are remembered in the beginning stages of learning. Emerging trends show that working on chunking may yield long-term retention over regular practice.

### **12. Conclusion**

The retrieval practices related to the techniques of vocabulary retention time represent a more cohesive outcome on the effectiveness of retention techniques in vocabulary learning. The fundamental recall pattern, the simple recall technique applications within vocabulary learning, can confer application guidance for a lot of learners and educators. Retrieval practice is the most effective technique for retention of long-term vocabulary learning. Educators simplify the students' overall learning and apply the recall pattern for retention. In vocabulary learning, the techniques appraised on how to memorize words are essential in language learning and beyond. Memorizing words has taken a series of procedures to be able to recall those words.

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