Original Paper

Research on Possible Causes and Solutions about the Problem of Second Language Vocabulary Acquisition Decay

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Abstract

English vocabulary learning is a difficult task for second language students. Therefore, it is very essential for second language students to master the methods of vocabulary memorization and how to prolong the time of vocabulary memorization. This paper will divide into three sections, namely describing a context with the problem of the accelerated lexical decay in a specific context in a Chinese after-school language class with details; analyzing possible causes and general solutions mentioned in vocabulary learning literature; as well summarizing what solutions to work in the specific after-school class in China.

Keywords

Second Language Learning, Vocabulary Acquisition, Vocabulary learning solutions

1. Introduction

For learning English as the second or foreign language (L2) learners, English vocabulary size and knowledge are regarded as the essential elements in improving their L2 acquisition bottom-up process (McAleer, 2017). Since Learning English is inseparable from vocabulary (Waller, 2017), vocabulary is a necessary element of L2 learning and communication, being like the bricks used in building a house. Thus, for teachers, vocabulary teaching is a fundamental part in English teaching (Waller, 2017), since students' levels of mastery and application of vocabulary are the basis of enhancing language knowledge and cultivating language skills. In other words, helping students to learn as well as appropriate use vocabulary seems to be a basic standard of evaluating levels of L2 teaching.

Besides the importance of acquiring, Schmitt (2007) points out that there is a general decay of vocabulary acquisition after learning them over time. Schmitt (2007) also argues that from the discussions known, most vocabulary learning studies focused on analyzing how to increase vocabulary acquisition, ignoring the possibility of its decay. This claim seems to be believable because when searching 'learning

vocabulary' as keywords online, there are indeed many more articles discussing vocabulary acquisition than those focusing on vocabulary decay. Hence, some lexicologists (e.g., Alali & Schmitt, 2012) recently call for doing more research on examining the relationship between time and the percentage of vocabulary knowledge forgotten, as well as finding the factors affecting this process, since a better understanding of the conditions will contribute to find out constructive solutions for reducing the pace and rate of lexical decay. The purpose of this paper, therefore, is to provide advice about pedagogical practices to strengthen learners' vocabulary memory, improve the quality of vocabulary teaching and promote learners' vocabulary acquisition.

2. The Context and the Problem

In this paper, the author would like to draw on my experience when teaching junior middle school students (aged 13-15) in an after-school class in China a year ago. These students attended this class to improve their English test scores. Meanwhile, the textbook (see the appendix1) used in this course was designed with two parts: one is a short story, the other is a vocabulary list including some new words chosen from the story.

When teaching these students, before scanning the story, the author usually taught the vocabulary first by repeating pronunciations, meanings and collocations, as well as designed some activities for practices, such as using the new words to make sentences or choosing appropriate collocations to fill in the blanks. These students expressed a keen interest in learning in class. However, I found that even if these students learned and remembered vocabulary well in the class, it is just instant memory, since they would forget it quickly. Commonly, forgetting vocabulary knowledge is a problem for most L2 students (Schmitt, 2007). Thus, to help L2 learners, especially adolescent learners, to have a more extended memory of vocabulary, it is one of the responsibilities for teachers to perceive why this problem happens and find out the strategies for solutions.

Therefore, the following sections will analyze two possible causes which lead to the problem that L2 learners' vocabulary acquisition achieved afterschool always decays fast, as well as producing feasible solutions according to each cause.

3. Literature Review

This section will explore and analyze why this problem, L2 vocabulary acquisition would decay fast, happens from two aspects (i.e., 3.1 the influences from repetition and 3.2 learners' first language) and demonstrate some corresponding solutions, according to relevant articles and studies.

3.1 Discussing the Influence of Repetition in Vocabulary Acquisition and Decay and Its Corresponding Solutions

3.1.1 The Fewer Frequently Vocabulary Is Repeated, the Less Time It Stays in the Memory

The length of time that second language (L2) learners remember vocabulary knowledge is positively correlated with how often they repeat the knowledge (Webb & Nation, 2017). "Repetition" here is

defined as "the number of encounters with each word" (Webb & Nation, 2017, p. 83). As the "forgetting curve" (see Figure 1) was point out by Ebbinghaus (1885), this hypothesis reveals the relationship between memory and the rate of forgetting, namely the memory declines over time. Applying the "forgetting curve" in vocabulary learning and teaching, a number of vocabulary studies (e.g. Schmitt, 2007; Barclay, 2017; Webb & Nation, 2017) claim that most L2 vocabulary acquisition decay is a result of insufficient frequency of encountering with the learned vocabulary knowledge. For example, in Webb's study (2007), he suggests that if learners encounter with target words ten times, a sizable acquisition development may appear, reducing its rate of decay. While, for a full comprehension of a word, Webb (2007) adds that learners may need to repeat it more than ten times before mastering it for longer. This suggestion highlights the essential role of repetition in developing vocabulary as well as defeating its decay.
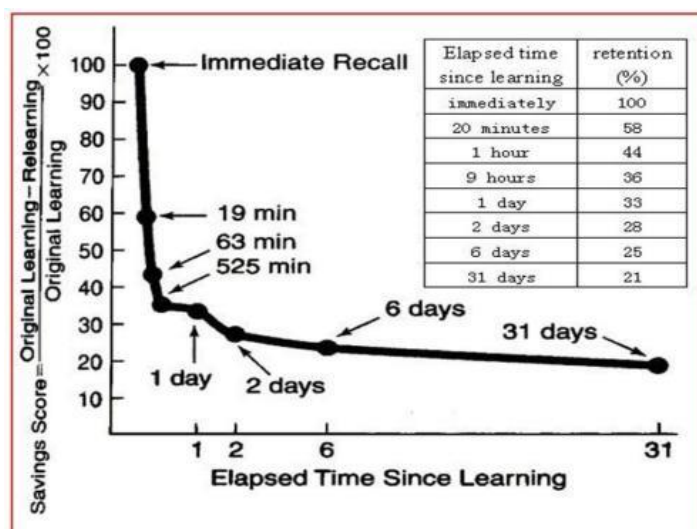
Figure 1. The Forgetting Curve (Ebbinghaus ,1885, cited from

https://en.wikipedia.org/wiki/Forgetting_curve)

In addition, in Barclay's research (2017), he points out that repetitions can enhance second language learners' proficiency in using new-learned words, thus prolonging the mastering time. To explain, when learners' proficiency in a specific vocabulary knowledge reaches a certain level, it becomes an unconscious language skill, thus, remaining in the memory longer (Barclay, 2017). In other words, the more repetitions occur, the easier it is for L2 learners to turn a new-learned vocabulary knowledge into a language instinct, resulting in remembering it longer. For example, Zhang (2017) tested two groups of pupils who had learned the same new word "unhappy" in the week before. The results show that the group who never repeated it more possibly misused it as "inhappy" or forgot utterly; while the group of those who repeated it at least seven times made no mistakes. This finding indicates that through repeating practice after learning, learners improved the proficiency and consolidated their skillfulness in memory,

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thus extending the time of mastering those words. To Sum up, it is almost a recognized fact that the number of repeating vocabulary knowledge will affect its acquisition and decline, namely, the fewer repetitions of vocabulary result in aggravating the process of L2 lexical decay.

3.1.2 The Corresponding Solutions for the Cause of Repetition

Based on the importance of repetition, it is crucial to think about how to utilize repetition to solve or slow the problem of vocabulary decay. First, is there a consensus on how many times of repetition are sufficient for prolonging vocabulary acquisition? After examining the effectiveness of different times of repetition (i.e., 1, 3, or 5 exposures) on the deliberate learning, Peters (2014) suggests that vocabulary appearing five times were better learned than those appearing only once. A few years later, an experiment instructed by Pellicer-Sánchez (2020) shows a similar result that the average score in the group without repeating is lower than that in the group with five times repeating. However, as mentioned in the last paragraph, Webb (2007) suggests that learners should repeat words more than ten times for a comprehensive understanding. Different researchers have different results for the exact number of necessary repetitions; nevertheless, few studies suggest that repetition can be less than five. Therefore, even though there has been no consensus on an exact number of repetitions so far, it is believable that at least five times seems to be as a baseline.

Second, as for a longer mastering of vocabulary, the teachers should help students to practice different aspects (including receptive and productive) of new-learned words when repeating. As Nation (2013) mentioned, there are nine aspects of learning a word, such as verbal form, collocations, grammatical function and others. This requires that repeating activities should be various, such as reading and writing words for spoken and written forms (e.g., Nakata, 2017) or filling in blanks for collocations and making sentence exercises for grammatical function (e.g., Folse, 2006).

Finally, the timeliness of repetitions cannot be ignored. As the 'forgetting curve' shows in the appendix 2, Sobul and Schmitt (2010) found that the highest rate of lexical decay appears at the end of the first day after learning. Thus, they suggest that if learners can effectively repeat vocabulary at the end of the first day of learning, the rate of forgetting this knowledge will be greatly reduced (Sobul & Schmitt, 2010). For teachers, this means that the words selected in daily homework should be focused more on newest-learned ones than others. If teachers can balance different aspects of words as well as the timeliness of vocabulary repetition, the problem caused by fewer repetitions will be largely solved.

3.2 Discussing the Influence of Learners' First Language Associated in Vocabulary Acquisition and Decay and its Corresponding Solutions

3.2.1 Vocabulary Associated with Second Language is Less Used in Learners' First Language (L1)

Apart from the repetition frequency in L2, the frequency of the words used in the first language (L1) also influence the duration of lexical mastery. After investigating L1 frequency in a lot of studies, de Groot and her colleagues (de Groot, 2006; de Groot & Keijzer, 2000) found that those target words which are associated with the words rarely used in L1 would be forgotten faster and easier than those paired with the words commonly used in L1. To explain why and how exactly the efficiency of L1 works, first and

foremost, de Groot (2006) adopts the term of familiarity. This indicates that through paired-associate learning, the more commonly learners use the L1 words, the more familiar they are with these words. As a result, this familiarity with native words has a direct impact on the ability of association with new words in L2. To explain detailly, this is because these familiar words are more firmly entrenched in the brain, making it is possible to combine a new word with the well-memorized concept (de Groot, 2006). For instance, when students were encountering with the word "atherosis" for the first time, being a teacher, I had to spend much time explaining that it is a disease with some particular symptoms and showing them pictures or cartoons to help them understand. Even with all the effort, this word was the one with the highest percentage of errors (i.e., forgetting), approximately 78 per cent. Since they are junior school students, "atherosis" hardly appears in their native daily conversations, aggravating its forgetting. This implies that if learners do not often use a native word in their L1, it will be harder for them to remember the same word in L2.

Besides the familiarity, the frequency of words used in L1 also affects the learners' judgment of the degree of abstraction of L2 words meaning. Bu's study (1992) found that the mastering time of L2 words could decline with the increase of abstraction in its meaning. In this study, Chinese students were required to remember English words by drawing pictures according to their corresponding Chinese meanings (Bu, 1992). The results showed that with the help from the L1 meanings, learners could remember the English words such as star or moon which could be drawn into pictures much longer than those words were more abstract, such as humanism. However, there is a surprising and unanticipated result showed from the word, "socialism" (Bu, 1992). Although it is an abstract word, those Chinese students in Bu's study (1992) remembered it better than other abstract ones. This is because the word, socialism, was often used in Chinese news or history books in the 1990s. In other words, benefiting from the frequent occurrences in L1, these participants can more accessibly understand and master the word, reducing its degree of abstraction. In contrast, when the meanings of the L2 words are translated into L1, the fewer they (i.e. meanings or concepts) used in L1, the easier it is to increase learners' sense of abstraction. Meanwhile, this leads to the more difficult they are for learners to keep in the memory, resulting in a faster lexical decay. From discussed above, it is clear that through determining learners' familiarity with L2 words as well as the degree of their abstraction, the vocabulary associated with L2 is less used in L1 draws in a faster forgotten of vocabulary mastery in L2.

3.2.2 The Corresponding Solutions for the Cause of Frequency Used in First Language (L1)

After analyzing the importance of frequency that vocabulary associated with L1, it is believable that choosing high-frequency words for teaching should be a useful technique to address the issue. Thus, this section will focus on three suggestions on how to choose the higher frequency as well as more appropriate words for teaching. First, before teaching the course, teachers should test whether the frequency and dimension of vocabulary are suitable or not (Nation, 2013). This is quite important because the different basic levels of students as well the different purpose of learning English

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determine the different standards in distinguishing high-frequency and low-frequency words. For example, as mentioned in the last section, middle school students forgot the English word "atherosis" faster because of its fewer times used in L1 daily life. This means the word, "atherosis", belongs to low-frequency words in their language circumstance. However, for another group of medical students, the word "atherosis" may become a compulsory word commonly used in L1. Thus, combing the use frequency in L1, this suggestion could help teachers to select more appropriate and high-frequency words for different students learning useful words. Also, this is helpful to set suitable goals for different courses.

Second, Dang (2018) suggests that high-frequency words should be listed in order based on their frequency levels. Because of their usual occurrence in both L1 and L2, high-frequency words should be valued and focused more by teachers and students during learning time (Dang, 2018). Thus, listing words in this way allows the more useful words to be received and mastered earlier. This enables them to enter into the learners' brains first, basically prolonging their lasting time in memory.

Finally, the suggestion from Conklin (2020) expressed that when translating L2 words' meanings or concepts into L1, the words selected from L1 should keep continuous development. This is effective in modern language learning circumstance. In the internet age, young people are greatly influenced by internet buzzwords, which means language updates faster. This requires teachers to use the latest and most fashionable language in L1 to translate and explain the meanings of L2 words, instead of selecting outdated expressions which are no longer in use. Thus, increasing young learners' familiarity with the meanings of new words, this is advantageous for improving the duration of lexical acquisition.

4. Solutions According to the Specific context

This section will integrate the solutions mentioned before into five steps, analyzing their feasibilities and efficiencies in addressing the problem concerning the specific context, namely Chinese adolescent learners' vocabulary acquisition achieved from afterschool class always decays fast. Moreover, in order to show the solutions clearer, the five solutions will be arranged according to the time order of designing a vocabulary lesson.

First and foremost, as Nation (2013) suggested, before teaching the course, teachers should examine the frequency and dimension of vocabulary, knowing purposes of learning vocabulary, if it is possible. This step is quite suitable for applying to address my issue because after examining students' original range of vocabulary, this can provide me with direct data on the students' basic levels. Then, the results of the original test will be as a baseline of dividing them into different classes. This also allows me to select different frequency and range of words for each level students, from the short story in the textbook. However, on the base of it, I make a slight adjustment. For all students have the same purpose of increasing English scores, this requires me to consider including the frequency of words used in L1 daily environment (checking from a Chinese website similar to Lextutor) as well the frequency of words occurs in their English examinations (checking in the Vocabulary Outline from the Ministry of Education)

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when identifying the high-frequency or low-frequency words in English. Thus, I believe this step, with the slight adjustment, will be better in the specific context to select the most suitable high-frequency words which both commonly used in L1 and often tested in examinations for each level students, reinforcing their acquisition mastering time.

Second, Dang's suggestion (2018), listing words in the order based on its frequency, should be added in my context. This means after identifying high-frequency (both in L1 and examinations) words, the new words chosen from the story should be listed in order from high-frequency to low-frequency instead of being at random. Because when the high-frequency words received more attention, they are possibly learned better and longer (Barclay, 2017). Thus, this will increase students' appreciation of the significance in high-frequency words, increasing the attention to those words, facilitating to acquire words better and longer.

During class time, the third step is to adopt the method, as Conklin (2020) mentioned that using the newest language in L1 to translate the L2 words. This is efficient in my teaching. When explaining the meanings or concepts of English words, I find that if I use some of the newest buzzwords in Chinese, my students will express greater familiarity with the words. This familiarity stimulates their interest in remembering those words associated with buzzwords, increasing the time of remembering them.

The fourth and fifth steps, on the other hand, are to address the issue caused by repetition (mentioned in 3.1). As Nakata (2017) suggested, reading and writing words would help repeat in spoken and written forms. Applied this to my context, in the fourth step, I always teach vocabulary before scanning the story. In this case, when students read the short story, they have to bring the new-learned words into the text. This indicates that reading the story more can increase the times of repetition. Thus, combing the words with a vivid story is beneficial for increasing repetition times, enhancing words remembered in the memory.

Finally, for after-class activities, Folse (2006) suggested that writing words, fill-in blanks for practising collocations and making sentence exercises for grammatical function. Applied these activities into my class, all the activities mentioned here seems to be feasible, because while students are finishing the activities, they are unconsciously accomplishing the repetitions several times, thus quickly increasing times of repetition after class. At the same time, because these activities are aimed at five different aspects of the word, they also increase the chances for developing a full comprehension of a word from different aspects, thus, enhancing the efficiency of repetition.

5. Conclusion

In conclusion, apart from the development of acquiring the vocabulary, L2 learners commonly encounter with the issue of vocabulary acquisition decay. According to the analysis of this paper, there are two main reasons for the decline of vocabulary remembering in memory, namely the impacts on the insufficient times of repetition and the rare occurrences in L1. Since it highlights the crucial roles of repetition (e.g., Webb, 2007) and native language (e.g., Bu, 1992) in vocabulary acquisition, this paper provides

theoretical support about teaching emphasis for future vocabulary programs. On the other hand, depending on discussions about the feasibility of suggestions from previous studies (e.g., Nation, 2013; Peters, 2014; Conklin, 2020), this paper integrates five practical solutions for addressing the issue in a specific context, thus, proposing some efficient pedagogical suggestions for the further related studies. However, since this paper only focused on the two of causes leading to vocabulary decay, some other limitations such as individual differences are not covered in this paper. This is a gap for future researchers to fill in, giving more comprehensive guidance for improving the quality of vocabulary teaching.

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Appendix 1: The structure of the textbook is as follows (Alexander and He, 1997).

First listen and then answer the question.

听录音，然后回答以下问题。

Why did the writer complain to the people behind him?

Last week I went to the theatre. I had a very good seat. The play was very interesting. I did not enjoy it. A young man and a young woman were sitting behind me. They were talking loudly. I got very angry. I could not hear the actors. I turned round. I looked at the man and the woman angrily. They did not pay any attention. In the end, I could not bear it. I turned round again. 'I can't hear a word!' I said angrily.

'It's none of your business,' the young man said rudely. 'This is a private conversation!'

'It's none of your business'

New words and expressions 生词和短语

private adj. 私人的
conversation n. 谈话
theatre n. 剧场，戏院
seat n. 座位
play n. 戏
loudly adv. 大声地
angry adj. 生气的
angrily adv. 生气地
attention n. 注重
bear v. 容忍
business n. 事
rudely adv. 无礼地，粗鲁地