

Use of Imagery Memory Strategy in Junior High School Vocabulary Teaching

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Abstract

Vocabulary has always been one of the significant issues related both with teachers and learners of foreign languages, as it requires students have ability in understanding and using the words and meaning. Traditional methods of vocabulary teaching often rely on rote memorization, which can be boring and less effective in promoting long-term retention. The imagery memory strategy, on the other hand, offers a cognitive approach that leverages the power of visual imagery to enhance memory and facilitate vocabulary learning. This study aimed to explore the use of imagery memory strategy in junior high school vocabulary teaching, aiming to enhance students' learning efficiency and improve their performance. Through literature review, we analyze the effectiveness of this strategy and identify its potential benefits for vocabulary acquisition. Furthermore, we discuss practical applications and provide suggestions for educators on how to incorporate imagery memory into their teaching methods effectively.

Keywords

Imagery Memory; Vocabulary Teaching; Junior High School; Learning Efficiency; Performance Improvement.

1. Introduction

1.1. Background to the research

Wilkins' (1972) famous saying that "without grammar, very little can be conveyed, without vocabulary nothing can be conveyed". And these words sum up the great importance of vocabulary very well. As an essential component of English language instruction, vocabulary has received much more attention in L2 pedagogy and research, posing as the most time-consuming and challenging aspect of English learning for students. The Ministry of Education has issued a notice on the Compulsory Education Curriculum Plan and Curriculum Standards (2022 Edition), setting higher requirements for junior high school English learning and teaching. The vocabulary in the curriculum has increased from 1600 words to 1800+200. Such a massive vocabulary needs to be grasped by students, which will undoubtedly require a lot of time and effort. However, in reality, many students do not seem optimistic when faced with such a huge task of understanding and memorizing these words. Most students tend to rely on rote memorization for vocabulary retention, especially beginners who have limited understanding of vocabulary learning strategies. This has also led to some students gradually losing their motivation and confidence in learning English. If these issues are not addressed, students' efficiency in learning English vocabulary cannot be improved. With the ongoing reforms in curriculum, it is crucial for frontline educators to focus on research questions related to how to efficiently conduct vocabulary teaching, guide students in adopting effective vocabulary retention strategies, and facilitate improvements in students' vocabulary learning conditions.

In recent years, there has been increasing interest in exploring effective teaching strategies that can enhance students' learning outcomes. Among these, the use of imagery memory strategy

involves creating mental images to associate new words with familiar concepts or objects and it has gained popularity as a potential tool for improving vocabulary retention and comprehension. This paper aims to investigate the use of imagery memory strategy in junior high school vocabulary teaching and its impact on students' vocabulary acquisition.

1.2. Purpose and Significance of the study

The purpose of this study is to examine the efficacy of imagery memory strategy in junior high school vocabulary teaching. By analyzing relevant literature, we aim to provide insights into the advantages and mechanisms behind this strategy. This will help educators make informed decisions about incorporating it into their teaching practices. This study intends to address the following research question: Does imagery strategy have any significant impact on EFL learners' vocabulary learning?

2. Problem Identification

Strategies are specific methods of approaching a problem or task, modes of operation for achieving a particular end, planned designs for controlling and manipulating certain information. The field of second language acquisition has distinguished between two types of strategy: learning strategies and communication strategies. The former relate to input—to processing, storage, and retrieval, that is, to taking in messages from others. The latter pertain to output, how we productively express meaning, how we deliver messages to others.

2.1. The Definition of Vocabulary Learning Strategy and classification

2.1.1. The Definition of Vocabulary Learning Strategies

Vocabulary learning strategies are a subcategory of language learning strategies and constitute actions and thoughts that foreign language learners engage into find out the meaning of new words, retain them in long-term memory, recall them when needed in comprehension, and use them in language production (see García Magaldi, 2010; Griva et al., 2009; Jiménez Catalán, 2003; Khalid Al Shawwa, 2010; Ruutemets, 2005). Several studies have demonstrated that vocabulary strategy instruction helps students learn and store more vocabulary (e.g., Bornay, 2011; Mizumoto & Takeuchi, 2009; Ostovar-Namaghi & Rajaei, 2013; Sozler, 2012).

2.1.2. The Classification of Vocabulary Learning Strategies

Schmitt (1997) adapts Cohen's (1999) and Oxford's (1996) taxonomies of strategies for vocabulary learning dividing VLSs according to two main phases: discovering new word meanings and consolidating new word forms and meanings. During these two phases, apart from applying cognitive, metacognitive and socio-affective strategies, learners also use memory to recall word meaning, relying on decoding as well as connections with their background knowledge (Griva et al., 2009). Table 1 presents the classification of VLSs (Griva et al., 2009; Oxford & Leaver, 1996; Schmitt, 1997). As can be seen, the focus is on cognitive, metacognitive and memory strategies since that can be considered the most relevant for vocabulary recall and retention.

2.2. Language Learning Strategies and Memory Strategies

According to Oxford's (1990) taxonomy, LLS are divided into two major categories: Direct Strategies and Indirect Strategies. These groups are categorized in different subgroups which are six in total. Metacognitive, affective and social strategies are under the indirect ones, whereas the direct strategies involve memory, cognitive and compensation strategies. Figure 1 shows Direct and Indirect Strategies with their subdivisions.

Table 1. A classification of vocabulary learning strategies

Cognitive strategies	Meta-cognitive strategies	Memory strategies
Write the new words with their meanings on cards. Make a mental picture or image of the new words. Build sentences with the new words. Say the words aloud while writing them, or spell written words to improve spelling.	Group words according to grammatical category (nouns, verbs, adjectives, adverbs). Group words according to topic, meaning, spelling or pronunciation. Use a monolingual dictionary to obtain the meanings, syntactical or usage information of the new words. Use a bilingual dictionary to obtain the meanings, syntactical or usage information of the new words.	Use rhymes to remember new words. Use mnemonic rules. Learn words by heart and repeat them.

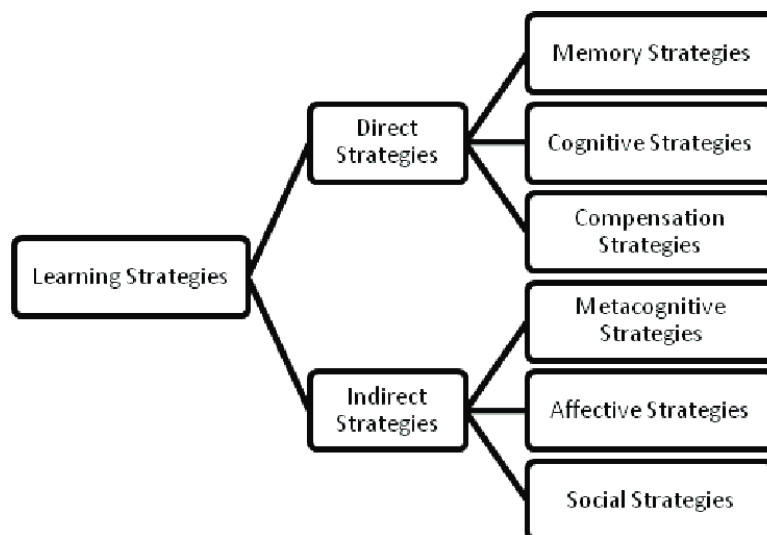


Figure 1. Classification of learning strategies (Oxford: 1990)

Memory strategies have been found to enhance remembering through the connection of new knowledge with familiar words and images (Levin, 1983; Mastropieri, Scruggs, & Fulk, 1990). Memory strategies, as one of the most effective strategies in the vocabulary learning process are extremely powerful mental tools. They include activities for remembering and retrieving the new information such as acronyms, key words, images etc. They help the learner to link the second language (L2) item with the new one. Oxford (1990: 38) states that the mind can store some 100 trillion bits of information, but only part of that potential can be used unless memory strategies come to the aid of the learner. She divides the memory strategies into four categories, all of which have different techniques Creating Mental Linkages, Applying Images and Sounds, Reviewing Well, Employing Action (Oxford, 1990). Using memory strategies generally engages in associating different types of material. That’s why, they are helpful in learning new vocabulary items and remembering them in the long term.

2.2.1. Memory strategy: imagery strategy

Imagery relates new information to visual concepts in memory via familiar, easily retrievable visualizations, phrases, or locations. Research has consistently shown that visual imagery activates brain regions associated with memory and promotes more effective retention of information compared to rote memorization or verbal encoding. The potential value of the

Imagery Strategy lies in its proven ability to improve learning outcomes, boost memory performance, and facilitate deeper understanding of complex concepts. By integrating this strategy into educational practices, individuals can capitalize on the brain's natural inclination towards visual processing to optimize learning and knowledge retention.

2.3. Theoretical basis

2.3.1. Dual Coding Theory

The dual coding theory, proposed by Allan Paivio in 1971, emphasizes that human memory can rely on both language encoding and image encoding simultaneously. According to this theory, storing information in two different encoding forms in the brain helps with memory, and image encoding is more enduring than language encoding. In junior high school vocabulary teaching, Paivio believed that using visual memory strategies to help students encode vocabulary information in the form of visual images can improve memory effectiveness.

2.3.2. Cognitive Load Theory

Cognitive Load Theory, developed by John Sweller in the 1980s, focuses on the limitations of working memory and the importance of designing instruction to manage cognitive load effectively. The theory suggests that learning is more effective when instructional material is structured in a way that reduces extraneous cognitive load and allows learners to focus on intrinsic cognitive load, which is essential for learning new information. By using imagery, which is a more intuitive and less cognitively demanding form of processing, learners can reduce the load on their working memory, allowing for more effective learning and retention of vocabulary.

2.3.3. Picture Superiority Effect

The Picture Superiority Effect is a phenomenon where information is more easily remembered and recognized when presented in the form of a picture or image, compared to being presented as text. This effect highlights the power of visual stimuli in enhancing memory retention and recall. Research has shown that our brains are naturally wired to process and remember visuals more effectively than words alone, leading to better memory performance with visual information. This is why incorporating images or pictures into learning materials can often result in improved learning outcomes and memory retention.

2.4. The Importance of Using Memory Strategies in Vocabulary Teaching

Memory strategies, one kind of the language learning strategies, are considered vital in vocabulary teaching (Nation, 2004). Oxford (1990) supported that memory strategies are considered as "powerful mental tools" for language learners to deal with vocabulary learning difficulties, because they "make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p.8). Johnson and Obi (1993) also claimed that the use of mnemonic strategies may help learning disabled students in the area of spelling and benefit their long-term memory of vocabulary. Wu and Chang (2005) also revealed that memory is the important medium for learning and gaining knowledge and also supported that teaching students memory strategies would enhance elementary school students' English vocabulary learning. Research evidence also indicated that students' English performance are related to the use of language learning strategies (Li, 2005; Nisbet, Tindall & Arroyo, 2005; park, 1997; yang, 1996a) and that strategies could be taught (Brown, 2002; Dörnyei, 1995; Nation, 2004; Oxford, 1990). Besides, Lan and Oxford (2003) suggested to implement strategy instruction at the Intermediate level, because young learners were capable of learning and using strategies.

Memory strategy instruction has become a growing area of research within language learning strategies over the last twenty-five years. The collected studies result that providing language

learners with some memory strategies on vocabulary learning which involve in deep processing will consequently lead to better retention.

Based on the advantages of strategy-based instruction, it would be worth exploring the effect of an explicit strategy instruction on Intermediate students' vocabulary learning. Strategy which is the main concern of this research falls into one category: "imagery strategy". The researchers have made an attempt to find out the effect of using this strategy for storing and retaining vocabulary items for longer period of time which is the aim of learning.

2.5. Related Studies on Imagery Memory Strategy in Vocabulary Teaching

The imagery memory strategy has received considerable attention in the field of second language acquisition.

Numerous empirical studies have investigated the effectiveness of the IMS in vocabulary teaching. For instance, Jones and Tulving (1989) demonstrated that participants who used imagery-based techniques showed better recall of new vocabulary words compared to those who employed rote memorization. Similarly, Kornell and Bjork (2008) found that learners who generated mental images of target words performed better on vocabulary tests than those who did not.

Research has shown that creating mental images can enhance memory and facilitate the learning process (Paivio, 1971). In the context of vocabulary teaching, the imagery memory strategy involves associating new words with vivid images, which can help students remember the words more easily. Several studies have demonstrated the effectiveness of imagery memory strategy in vocabulary acquisition (e.g., Nation, 2001; Waring & Takaki, 2003). These studies found that learners who used imagery memory strategy performed better in vocabulary tests compared to those who did not use this strategy.

Research on the IMS in vocabulary teaching has employed various methodological approaches. Qualitative studies have explored learners' perceptions and experiences of using imagery in vocabulary learning (e.g., Kocirlan, 2014). Quantitative studies have focused on the effectiveness of IMS by comparing recall rates and retention levels between groups using IMS and control groups (e.g., Bower et al., 1979).

Several factors have been identified as influencing the effectiveness of the IMS in vocabulary teaching. Firstly, the nature of the target vocabulary plays a crucial role. Concrete words with easily visualizable meanings are more amenable to IMS than abstract words (Paivio, 1986). Secondly, individual differences, such as prior imagery ability and cognitive style, may moderate the effectiveness of IMS (Thomas, 2012).

The IMS holds several pedagogical implications for vocabulary teaching. Language educators can incorporate IMS into their teaching practices by encouraging learners to create mental images that associate target words with personal experiences or visual representations. Additionally, teachers can design activities that promote the use of IMS, such as vocabulary games, story creation, and mind mapping.

2.6. Gaps in existing research

Previous studies have explored various aspects of vocabulary learning and teaching. However, despite the fact that the imagery memory strategy is considered an effective learning tool, especially in memorizing words, few studies have specifically focused on the application of the imagery memory strategy in junior high school vocabulary education, particularly in terms of how to integrate this strategy into daily teaching and how to evaluate its effectiveness. This gap in research provides an opportunity to delve deeper into the potential of this strategy and its effectiveness.

In practical teaching, the implementation of image memory strategies requires a lot of preparation and resources from teachers. Teachers may face the challenge of integrating the

imagery memory strategy with existing teaching methods and adjusting this strategy to accommodate the learning styles and needs of different students, because there may be differences in personal visual associative abilities, leading to varying effectiveness of image-based memory strategies. The current research on evaluating the effectiveness of the imagery memory strategy in junior high school English vocabulary teaching is also relatively limited. More research is needed to explore the impact of this strategy on students' long-term memory and language skill development.

In summary, the application of the imagery memory strategy in junior high school English vocabulary teaching is an area worthy of further research and exploration, especially in terms of its specific implementation methods and effectiveness evaluation.

3. Problem Solutions

3.1. Using technology to enhance imagery memory

Technology offers a variety of tools and resources to enhance imagery memory in vocabulary acquisition (Yang Ying, 2024). Interactive flashcards and apps, virtual reality, digital mind mapping tools, online storytelling platforms, video and animation, gamification, social media and online communities, personalized learning software, smartphone and tablet applications, and cloud-based collaboration tools are some examples. These resources engage multiple senses, provide dynamic learning experiences, and create immersive environments that reinforce vocabulary learning (Wang Xue, 2024). By integrating these technologies purposefully, educators can create an engaging and interactive learning environment that enhances imagery memory and facilitates more effective vocabulary acquisition.

3.2. Use mind mapping to consolidate knowledge and enhance vocabulary retention

Mind maps are a tool for helping students solidify their knowledge and deepen their memory. Even middle schoolers can use mind maps to remember English vocabulary. There are a few clear advantages to this word memory approach. First, it helps students form a logical vocabulary system, building their own vocab bank. Second, it lets students see the connections between different words more clearly, nailing down the differences between synonyms, so they can use words in a smart and accurate way. And third, it can create a vocab tree to help students understand word formation patterns and expand their vocabularies. Teachers should guide students in making their own vocab mind map. Because if students just memorize words based on the teacher's mind map, they'll only follow the teacher's way of thinking and won't innovate or use their own logical thinking for remembering vocab, which isn't great for learning. Once students have their mind map ready, it's time to start memorizing based on it (You Lingling, 2023). Teachers should guide students scientifically in a few key areas. First, teach students to make comparisons to boost vocab memory and expand their vocab (Feng Xiaoyan, 2024). These comparisons could include synonyms and antonyms, or usage comparisons. Second, encourage students to work together in groups to figure out word formation patterns through discussion and strengthen their memory based on that. This hands-on approach helps students remember better compared to just lectures, and group work can boost their practical skills. Third, guide students to practice forming words and making sentences based on their word memory foundation, so they not only remember word meanings but also become skilled at using them.

3.3. Offering feedback and reinforcement

Providing timely feedback and reinforcement can motivate students and reinforce the effectiveness of imagery memory strategy. Positive reinforcement can boost their self-confidence and encourage them to continue using this method effectively.

3.4. Combining students' interests and individual differences

In order to improve students' learning enthusiasm, teachers can conduct surveys to understand students' interests, then design personalized teaching materials based on this information, such as comics, video clips, or music segments embedding new vocabulary. Secondly, through role-playing and project-based learning, let students naturally learn and use language in simulated scenarios. In addition, provide a variety of memory tools, such as mind maps and memory palaces, allowing students to choose the most suitable memory strategy according to their preferences (Sun Peng, 2024).

3.5. Enhance training and guidance on visual memory strategies

To enhance teachers' teaching skills and application techniques, it is necessary to strengthen training and guidance on visual memory strategies. Organize professional development workshops and seminars for teachers to learn the theoretical foundation and practical application methods of visual memory strategies. Share successful case studies to help teachers understand how to effectively implement these strategies in the classroom. Additionally, encourage teachers to observe each other's teaching and provide feedback and discussions to improve teaching methods. Establish a teaching resource repository to collect and share effective teaching resources for visual memory strategies, such as educational videos, courseware, and activity designs. Lastly, encourage teachers to regularly reflect on their teaching practices, evaluate the effectiveness of strategies, and make adjustments based on student feedback and learning outcomes. Through these measures, teachers can better utilize visual memory strategies, enhance student engagement, and improve overall teaching quality. In conclusion, imagery memory strategies play a vital role in vocabulary acquisition by providing a rich context for learning and tapping into the brain's preference for visual information. These strategies improve memory, facilitate deeper understanding, and make the process of acquiring new words more engaging, effective, and enjoyable.

4. Conclusion

English vocabulary teaching is both a focal point and a tough nut to crack. To tackle this challenge, teachers need to follow the rules of language teaching, consider the difficulties students face, and use various teaching methods to solidify their memory and enhance their understanding, so they can actually apply what they learn.

Through our research exploration and analysis, we've found that visual memory strategies have many advantages in teaching middle school vocabulary. Firstly, visual memory can spark students' interest and attention, making the vocabulary learning process livelier and engaging. Secondly, by combining visual and spatial perception, visual memory can effectively enhance students' understanding and memory of vocabulary, boosting learning outcomes. Additionally, visual memory strategies can meet the diverse learning needs of students, helping them better grasp vocabulary and enhance their ability to apply it. However, visual memory strategies in middle school vocabulary teaching also come with some limitations. For instance, implementing visual memory strategies requires a lot of preparation and resources from teachers, which could complicate classroom management. Moreover, some students may have varying levels of personal visual associative abilities, leading to differing effectiveness of visual memory strategies. Based on these findings, we suggest some insights and recommendations for vocabulary teaching practice. Teachers can use information technology and mind maps to aid students' memory; by considering students' interests and individual differences, flexibly applying visual memory strategies, creating diverse teaching methods, and boosting students' learning enthusiasm. Additionally, teachers should enhance training and guidance on visual memory strategies to improve teaching standards and application skills.

In conclusion, this research delves into the role and value of visual memory strategies in middle school vocabulary teaching, offering valuable insights for educational practice. In the future, we can broaden the scope of research, explore the application of visual memory strategies in different age groups and subject areas, and further refine the specific operational methods of visual memory strategies in vocabulary teaching to promote students' learning development and achievements. This series of efforts will provide crucial references and support for continuous improvement and enhancement in the field of education.

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