INVESTIGATING METACOGNITIVE STRATEGIES IN VOCABULARY ACQUISITION BY EIGHT GRADE STUDENTS OF SMP N 12 SEMARANG

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Abstract

Gaining vocabulary proficiency is a fundamental aspect of language acquisition and presents a challenge for language learners. However, there are various strategies available to facilitate the learning of new words. Therefore, understanding how students apply these vocabulary learning strategies becomes crucial. The primary aim of this research was to outline the vocabulary learning strategies employed by students when acquiring new vocabulary. A quantitative approach was adopted for this study, utilizing a survey as the data collection method. The research was conducted among 40 grade-eight students at SMP N 12 Semarang. A questionnaire comprising 41 items, developed based on Schmitt's (1997) theoretical framework, was employed for data collection. Descriptive statistics were used to analyse the questionnaire data, which were categorized into five distinct groups: determination strategies, cognitive strategies, social strategies, memory strategies, and metacognitive strategies. The findings indicated that participants most frequently utilized metacognitive strategies in their vocabulary learning process, while determination strategies were reported as the least frequently used.

Keywords – Vocabulary learning strategies, metacognition, strategies application, EFL learners

Introduction

The topic of Vocabulary Learning Strategies (VLS) has consistently been a significant subject of discussion in foreign language classrooms (Putra, Priyono & Arifuddin, 2012). Vocabulary mastery holds a crucial position in the process of acquiring a foreign language (Astika, 2016). Numerous scholars have emphasized the importance of vocabulary learning within English Foreign Language (EFL) classrooms. Furthermore, Schmitt (1997) asserted that learners' implementation of vocabulary learning strategies can significantly impact their vocabulary acquisition. Additionally, Hunt and Beglar (2005) as cited in Yudintseva (2015) highlighted that the foundation of language comprehension and usage lies in the lexicon (p.101). Hirst (2009) provided a definition of the lexicon as a compilation of words in a language a vocabulary along with a certain degree of knowledge regarding their usage. (p.1).

In the specific context of my study at SMP N 12 Semarang, students have utilized various strategies, such as personal experiences, books, dictionaries, and other classroom strategies, to learn new words. However, I have observed several issues and challenges concerning the students' mastery of vocabulary in this school. As a former teacher at the institution, I often encountered situations where students struggled to comprehend certain English words while engaging in activities such as constructing short dialogues and sentences. The insufficiency of vocabulary among the students was a recurring problem across most of the classes I taught. Insufficient vocabulary poses a significant obstacle to effective English language learning. Consequently, it is imperative to undertake educational research on vocabulary learning strategies to investigate the specific strategies employed by learners in their vocabulary acquisition process. This research endeavor aims to enhance and develop the

curriculum for vocabulary learning strategies in teaching and learning, as suggested by Takač (2008) and Astika (2016).

Despite extensive discussions highlighting the significance of vocabulary learning, studies have consistently indicated that a majority of language learners perceive vocabulary acquisition as a challenging task. Learners are required to familiarize themselves with a substantial volume of new words and phrases (Schmitt, 2010). In this regard, researchers have also identified issues within vocabulary instruction. These include the vast number of words that children must learn, disparities in levels of word knowledge, and the limitations of traditional vocabulary teaching methods in equipping children with word-learning strategies and fostering an appreciation for words (Stahl, 2005, p. 96; Al-Khresheh, M. H., & Al-Ruwaili, S. F., 2020).

In the specific context of my study, there is a dearth of research on vocabulary learning strategies conducted at SMP N 12 Semarang. Previous studies by Al-Khresheh, M. H., & Al-Ruwaili, S. F. (2020) highlighted the prevalence of memory strategies among their participants. Another study by Astika (2016) observed a reliance on determination strategies among the participants. However, these findings do not specifically address the vocabulary learning strategies employed by students at SMP N 12 Semarang. This study aims to provide a more comprehensive understanding of the challenges faced by foreign language learners in acquiring vocabulary at various stages of the learning process. In my particular research setting, it is intriguing to investigate how students approach the learning of new words. Consequently, I am eager to explore the vocabulary learning strategies utilized by students at SMP N 12 Semarang. To the best of the author's knowledge, no prior research has been conducted on English vocabulary learning strategies specifically in SMP N 12 Semarang. This study endeavors to address the following research inquiries:

1. Which vocabulary learning strategies are predominantly employed and which are less frequently utilized by eighth-grade students at SMP N 12 Semarang?
2. To what extent do eighth-grade students at SMP N 12 Semarang employ metacognitive strategies in their vocabulary learning endeavors?

It is anticipated that the research on vocabulary learning strategies will offer valuable insights into the significance of vocabulary acquisition in educational settings. Furthermore, the study provides practical learning techniques that can assist students in effectively learning and comprehending new words. The findings will also guide students at SMP N 12 Semarang in effectively approaching and incorporating new vocabulary into their language proficiency. Consequently, the results will empower them to employ efficient strategies in their vocabulary learning endeavors.

Schmitt (1997) asserts in the field of foreign language research that Vocabulary Learning Strategies (VLS) encompass processes through which students identify the meaning of foreign language words, commit them to memory, and utilize them within appropriate contexts. Vocabulary learning strategies serve as techniques employed by students in their ongoing pursuit of mastering English vocabulary (Mehring, 2005). For instance, Hosenfeld's (1984, as cited in Takač, 2008) proposes a range of successful vocabulary learning strategies to acquire new words, including techniques such as inferring word meanings from context, discerning the grammatical category of a word, consulting reference materials, and recognizing cognates (p. 52).

Furthermore, as stated by Nation (2001), vocabulary learning strategies possess several crucial characteristics: they involve decision-making, they comprise multiple steps, they necessitate knowledge and benefit from training, and they enhance the efficiency of vocabulary learning and utilization (p. 217). Consequently, each strategy possesses its unique features, making it imperative for students not only to recognize but also to effectively employ these strategies. The role of Vocabulary Learning Strategies (VLS) in the language learning process can be profoundly influential in English vocabulary acquisition, provided that learners are capable of managing and controlling their vocabulary learning endeavors (Al-Khresheh, M. H., & Al-Ruwaili, S. F., 2020).

Several researchers have developed taxonomies of vocabulary learning strategies, which prove highly beneficial for investigating learners' strategies in vocabulary acquisition (Nation, 2001). Nation's taxonomy encompasses three categories of vocabulary learning strategies: planning, sources, and processes.

Furthermore, Schmitt (1997) classifies VLS into five categories: determination strategies, social strategies, memory strategies, cognitive strategies, and metacognitive strategies. Determination strategies, as the first category, involve uncovering the meaning of new words through direct translation into the learners' native language (L1). In determination strategies, learners ascertain meaning through guessing based on their structural knowledge of the language or context, relying on their L1, utilizing reference materials such as monolingual and bilingual dictionaries, seeking assistance from others, and employing word lists that may include the use of flashcards. Indeed, Schmitt (1997) suggests that determination strategies "facilitate the acquisition of knowledge about a new word" (p. 10).

Metacognitive strategies, as described by Schmitt (1997), refer to the strategies employed by students to control and assess their own learning, enabling them to have a comprehensive understanding of the overall learning process. The purpose of utilizing metacognitive strategies is to ensure the successful and efficient learning of new words. Examples of metacognitive strategies include engaging with English language media such as songs, movies, magazines, radio, newspapers, and TV newscasts, participating in vocabulary tests, selectively skipping unfamiliar and challenging words, reviewing vocabulary lists in personal notepads, and consistently studying new words over time. Therefore, metacognitive strategies require learners to consciously engage in the process of acquiring new words and make informed decisions about planning, monitoring, and evaluating the most effective approaches to studying target language vocabulary (Schmitt, 1997).

The combination and mutual support of metacognitive strategies (e.g., planning, organizing, monitoring, and evaluating) and cognitive strategies (e.g., verbal repetition, writing down vocabulary in a notebook, utilizing vocabulary units in a textbook) are commonly observed in vocabulary learning. It appears that the combination of cognitive and metacognitive strategies yields greater effects than using single strategies alone. The distinction between metacognitive and cognitive strategies is significant, as it provides insights into which strategies are most effective in assessing learning performance. Metacognitive strategies, which involve students' ability to plan, organize, monitor, and evaluate, play a crucial role in enhancing vocabulary learning (Graham, 1997, as cited in Anderson, 2002).

Metacognitive strategies involve planning and understanding how to optimize learning outcomes through reflective thinking. Research has

consistently demonstrated that individuals who employ metacognitive techniques perform better compared to those who do not utilize such strategies or rely solely on general learning approaches (Teng, 2020). The process of metacognitive strategy encompasses four stages: planning, evaluating learning, selecting learning methods, and monitoring knowledge. It is important to note that metacognitive strategies play a crucial role not only in language learning but also in learning across various subjects. Hacker et al. (2009) define metacognition as a higher-order cognitive process that oversees and coordinates other cognitive processes involved in the learning process. In fact, metacognition is a part of our daily routine as we reflect on our experiences. Metacognitive strategies facilitate effective learning and have been linked to learning awareness (Chamot & O'Malley, 1986; Mitsea, Eleni, & Drigas, 2019).

Furthermore, metacognition refers to having self-knowledge as learners, which is essential for success in the learning process (Mbato, 2013). Engaging in activities such as planning how to learn vocabulary, monitoring comprehension of vocabulary, and evaluating progress through vocabulary level tests exemplify the implementation of metacognitive strategies in vocabulary learning. Given the significant role of metacognition in the effectiveness of vocabulary learning, it is crucial to investigate metacognitive activity and progress to determine whether students can be trained to effectively support their cognitive resources through metacognitive regulation (Flavell, 1979).

Moreover, metacognitive strategies play a vital role in various aspects of language acquisition, including oral communication, oral comprehension, reading comprehension, writing, memory, problem-solving, social cognition, and self-control (Flavell, 1979). Vocabulary learning, being a part of language acquisition, also involves the utilization of metacognitive strategies. Flavell (1979) and Norman (2020) further suggest that consistent application of metacognitive strategies can lead to their automatization.

Several studies have explored vocabulary learning strategies, including research conducted by Hasnali, Abdollahzadeh, and Taghinezhad (2016) in Iran; Astika (2016) in Indonesia; Goundar (2015) in Fiji; Wang (2004); and Wu (2005). These studies focused on vocabulary learning strategies, although variations were found in their results. Hasnali et al. (2016) identified memory strategies as the most frequently used and preferred among Iranian students, while Astika (2016) found that determination strategies were commonly employed by his participants. Goundar (2015) investigated VLS among adult students, whereas Wang (2004) and Wu (2005) explored VLS used by Taiwanese EFL learners. This present study aims to provide a deeper understanding of the vocabulary acquisition challenges faced by foreign language learners at different stages of the learning process, specifically focusing on the utilization of metacognitive strategies by students at SMP N 12 Semarang. Limited research has been conducted on the investigation of metacognitive strategies in vocabulary learning among students in this context. The study is specifically designed for eighth-grade students at SMP N 12 Semarang.

Methodology

This study aimed to investigate the use of metacognitive strategies in vocabulary learning among eighth-grade students at SMP N 12 Semarang. The survey method was employed to gather quantitative data, following a research design classified as survey research. Griffee (2012) defines survey design as a data collection approach that allows the researcher to inquire about factual or opinion-based information from a sample of a population in order to make

generalizations to the larger population. The use of surveys in vocabulary learning strategies research is well-established, as supported by Schmitt (1997) and Takač (2008), and typically employs descriptive statistics. The questionnaire used in this study consisted of 42 closed-ended items and 1 open-ended item, with participants responding using a Likert scale ranging from "1-never" to "5-always." The questionnaire was adapted from Schmitt's VLS taxonomy, with modifications made to the metacognitive strategies section.

Nonprobability sampling was utilized by the researcher to select participants, as described by Griffee (2012). Nonprobability sampling involves the selection of certain individuals by the researcher without extending the opportunity to others. The participants in this study were eighth-grade students from the 2022/2023 academic year, with a total population of 94 students. Due to time constraints, the researcher selected a sample of 40 participants, including 15 females and 25 males. All participants had been studying English for six years, and their ages ranged from 12 to 15 years old. Additionally, their English grades from the last semester ranged from 78 to 100, with an average grade of 84.

A questionnaire was chosen as the research instrument due to its practicality, ability to collect data from a large number of individuals in a short amount of time, effectiveness, efficiency, and capacity to ensure response accuracy and specificity (Griffee, 2012). The questionnaire was developed by adapting Schmitt's VLS taxonomy and was written in Indonesian to ensure participants' understanding and accurate implementation of the items.

Validity and reliability are crucial considerations for the questionnaire as a research instrument (Taherdoost, 2018). Various validity tests, including face validity, content validity, construct validity, and criterion validity, are recommended for questionnaires, depending on the type of research (Taherdoost, 2018). In terms of reliability, the Cronbach's Alpha coefficient is commonly used, indicating a reliable and valid measure for assessing the questionnaire instrument (Gay and Airasian, 2012). The instrument used in this study demonstrated high reliability, with a Cronbach's Alpha coefficient value of 0.874, as presented in Table 1.

Table 1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.874	.870	42

The researcher obtained permission from the English teacher to administer the questionnaires to the participating classes. With the collaboration of the English teachers and class leaders, the questionnaires were distributed to three classes. The vocabulary learning strategy questionnaire was administered through Google Forms. This digital platform allowed students to access and complete the questionnaire using their computers or smartphones. Prior to completing the questionnaire, participants were provided with a comprehensive explanation of the study's main objectives and their significance in the realm of language learning and education, as outlined in the questionnaire.

The first step in analyzing data was processing the data obtained from the questionnaire. The data collected from a close-ended questionnaire were analyzed using Microsoft Excel and IBM SPSS 25. The researcher looked out for the score of each item in the questionnaire. Table 2 presents the Likert Scale and the converted scores used to measure students' VLS.

Table 2: The Converted Score of the Frequency

Frequency	The converted Score

Never	1
Rarely	2
Sometimes	3
Often	4
Always	5

The score ranged from 1 to 5. Here is the formula, as follows:

$$Score = \frac{\sum[(F.1] + (F.2) + (F.3) + (F.4]}{\sum N}$$

Notes:

F : The number of students based on the degree of frequency

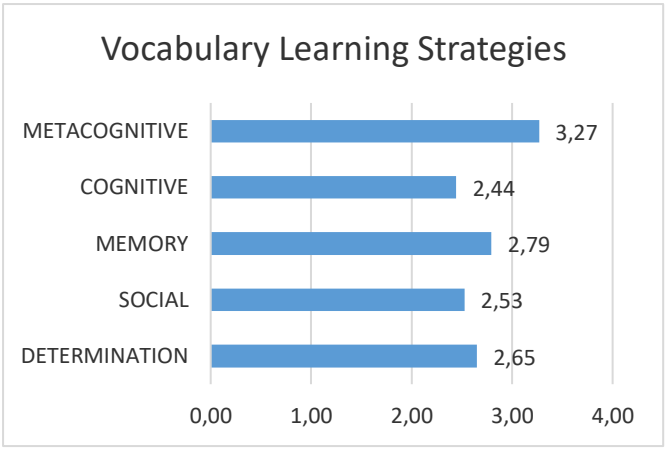
$\sum N$: The number of total participants

The questionnaire consisted of items categorized into five distinct strategies: determination, social, memory, cognitive, and metacognitive strategies. To facilitate a clear understanding of the findings, the statistical data was analyzed and presented in written form, allowing both the researcher and readers to comprehend the results effortlessly. To assess the participants' utilization of each strategy, an evaluation score system was devised, classifying individuals into five categories based on their scores: low (1-2.4), moderate (2.4-3.5), and high (3.5-5). Through this scoring system, the average score for each category, as well as the overall strategy usage, was calculated.

Finding and Discussion

The study yielded reliable results with a Cronbach's Alpha coefficient of 0.88, indicating a high level of reliability. Average scores were calculated for each of the five categories of vocabulary learning strategies addressed in the survey. The data collected from the closed-ended questionnaire, consisting of forty-two items, and the open-ended questionnaire were analyzed quantitatively. These results were utilized to address the two research questions regarding the most frequently used vocabulary learning strategies and the extent of metacognitive strategy utilization among eighth-grade students at SMP N 12 Semarang.

Figure 1: Overall Results of Vocabulary Leaning Strategies



As depicted in Figure 1, all scores obtained for the vocabulary learning strategies fall within the moderate range, with a mean value exceeding 2.9 for all strategies. This indicates that all participants can be classified as high users of vocabulary learning strategies. The overall standard deviation is 1.2, and since the mean value is greater than the standard deviation, it suggests a favorable outcome. The standard deviation reflects a relatively low level of deviation, indicating that the data is normally distributed and free from bias. Among the five types of strategies, metacognitive strategies obtained the highest mean score (3.27). Memory strategies ranked second with a mean score of 2.79, followed by determination strategies (2.65) and social strategies (2.53). Finally, cognitive strategies received the lowest mean score (2.44).

These findings differ from those of Hasnali et al. (2016), who reported that

Iranian students predominantly utilized memory strategies. Additionally, the results contrast with Astika's (2016) findings, which highlighted the prominence of determination strategies among participants. In the subsequent sections, the average scores for each strategy will be further examined, presenting them in descending order based on frequency of usage.

The results of the questionnaire indicate that students predominantly utilized metacognitive strategies in their vocabulary learning, as evidenced by the highest mean score of 3.27. Mitsea and Drigas (2019) describe metacognitive strategies as involving conscious monitoring, sequential processes for controlling learning, higher-order executive skills, and decision-making before, during, and after learning. This finding aligns with Schmitt's (1997) assertion that students employ metacognitive methods to monitor and evaluate their own learning by gaining an overview of the learning process.

Table 3 illustrates the use of metacognitive strategies by learners, ranging from 4.43 to 2.20. The corresponding standard deviations for these scores range from 0.93 to 1.57, suggesting a high overall utilization of these strategies. The closed-ended questionnaire provided a range of self-regulated methods in relation to metacognitive strategies, including the use of English-language media, consistent studying of words over time, skipping unfamiliar words or employing spaced word practice, as well as preparation, presentation, evaluation, and expansion techniques. Among these methods, the highest mean score was obtained for using English-language media to learn new words, while the lowest mean score was observed for writing new words while watching TV and films.

Table 3: Descriptive analysis of metacognitive strategies

No.	N	Min	Max	Sum	Mean	Std. Dev.
Q25	40	1	5	177	4.43	0.96
Q32	40	1	5	165	4.13	1.11
Q30	40	1	5	158	3.95	1.18
Q27	40	1	5	154	3.85	1.21
Q28	40	2	5	149	3.73	0.99
Q34	40	1	5	141	3.53	1.45
Q31	40	1	5	140	3.50	1.43
Q41	40	1	5	135	3.38	1.46
Q39	40	1	5	135	3.38	1.25
Q37	40	1	5	132	3.30	1.11
Q40	40	1	5	127	3.18	1.24
Q33	40	1	5	126	3.15	1.49
Q35	40	1	5	120	3.00	0.93
Q42	40	1	5	112	2.80	1.24
Q26	40	1	5	101	2.53	1.34
Q38	40	1	5	97	2.43	1.36
Q36	40	1	5	96	2.40	1.22
Q29	40	1	5	88	2.20	1.57
Valid N (listwise)	40	Average Score			3.27	1.25

Memory strategies involve techniques such as associating the target word with previously learned information, using imagery, and grouping words (Schmitt, 1997). The mean values for memory strategies, which ranged from 1.90 to 3.80, with an average score of 2.79. The standard deviations for these scores varied from 0.87 to 1.43, indicating moderate levels of utilization of memory strategies.

Among the memory strategies, connecting words to personal experiences obtained the highest score of 3.80. This finding aligns with Schmitt's (1997) observation that associating new words with personal experiences enhances vocabulary acquisition. Another effective strategy was recalling words with the help of pictures, which received a score of 3.45. This finding is consistent with Schmitt's (1997) research, which suggests that learning new words through visual aids, such as pictures, is more effective than

relying solely on the learner's native language.

On the other hand, relating words to synonyms and antonyms had the lowest score of 1.90. This indicates that most students did not prefer to associate words with their synonyms or antonyms. Similarly, saying new words aloud while studying and focusing on word spelling were not significantly favored by the learners.

Determination strategies involve approaches to infer the meaning of unfamiliar words by utilizing contextual clues, analyzing structural information, and employing reference materials (Schmitt, 1997). In the questionnaire results, determination strategies ranked third, with an average score of 2.5 and a standard deviation of 1.18.

The closed-ended questionnaire included four specific techniques related to determination strategies, namely text-based guessing, bilingual dictionary usage, monolingual dictionary usage, and word lists. The findings revealed that guessing words from the textual context received a higher score of 3.65 compared to using a bilingual dictionary, which obtained a score of 3.00. This suggests that learners found the process of deducing word meanings from the surrounding context more valuable and effective than relying on a bilingual dictionary.

Social strategies involve learning new words through interactions with peers and others, such as seeking assistance from individuals who possess knowledge of the word (Schmitt, 1997). In the overall ranking of strategies, social strategies occupied the fourth position. The utilization of social strategies is presented in Table 6. The findings indicate that the implementation of social strategies falls within the moderate range and exhibits relatively lower scores compared to other vocabulary learning strategies. The scores ranged from 3.13 to 1.68, displaying significant variation among the results. However, the standard deviation for these scores ranged from 1.14 to 0.89. The highest-scoring strategy within this category was item 7, which pertained to asking classmates for the meaning of new words, receiving a score of 3.13. Conversely, the lowest mean value of 1.68 was attributed to the strategy of asking the teacher for synonyms of new words.

Cognitive strategies, as described by Schmitt (1997), involve learners making connections and utilizing various methods to determine the meaning of words. These strategies encompass practices such as repetition, using mechanical techniques to acquire vocabulary, maintaining a vocabulary notebook, creating flashcards, and constructing wordlists. The average score for cognitive strategies was found to be 2.44, with standard deviations ranging from 1.29 to 0.71. Cognitive strategies received the lowest scores among all the vocabulary learning strategies, indicating that they were the least preferred by the learners. However, within this category, certain strategies garnered higher values, ranging from 3.15 to 2.60. On the other hand, the lowest mean values of 2.25 and 1.43 were attributed to making a small dictionary of new words with translations in the learners' native language and creating flashcards for new words. It is worth noting that some researchers have identified positive implications of using flashcards in the process of learning new words (Agus & Syafei, 2016; Ardiyanti et al., 2018; Chien, 2015; Hamer & Rohimajaya, 2018; Hidayat, 2016).

Conclusions

The primary objective of this study was to address two research questions: 1) What are the most and least commonly used vocabulary learning strategies among eighth-grade students at SMP N 12 Semarang? 2) To what extent do these students employ metacognitive strategies in vocabulary learning? The findings of the study revealed that learners consistently utilized strategies from all

categories outlined in Schmitt's taxonomy (1997). Metacognitive strategies emerged as the most preferred overall, with a mean score of 3.27, while cognitive strategies were reported to be the least utilized, with a mean score of 2.44. Memory strategies, determination strategies, and social strategies fell in the middle, with mean scores of 2.79, 2.65, and 2.53, respectively.

In general, the results indicated that students exhibited a strong interest in employing metacognitive strategies when learning new vocabulary. Within the realm of metacognitive techniques, students engaged in activities such as using English media, dedicating time to consistent word study, selectively skipping and revisiting unfamiliar words, engaging in preparatory steps, evaluating their own progress, presenting new words, and expanding their understanding. The findings align with the high scores observed in each subcategory of metacognitive strategies.

Based on the comprehensive analysis and discussions, this research has provided valuable insights into the vocabulary learning strategies employed by EFL students at SMP N 12 Semarang to enhance their English vocabulary. Additionally, it shed light on the barriers they encounter in proximity and effective solutions to overcome these challenges. The study underscored the benefits of metacognitive strategies in vocabulary enrichment. Students should be exposed to a range of vocabulary learning strategies, along with a thorough understanding of the advantages and disadvantages associated with each strategy. This knowledge can assist students in optimizing their learning processes, adapting strategies according to their preferences and abilities. It is recommended to incorporate vocabulary learning strategies into elementary and intermediate levels, accompanied by activities such as online vocabulary games and independent evaluation.

Further studies are warranted to promote vocabulary learning as a valuable strategy for both teachers and students in language acquisition. This awareness is crucial for policymakers, curriculum designers, and developers. Enhancing the knowledge of students and teachers regarding vocabulary learning strategies necessitates further research. It is important to note that this study only focused on the vocabulary learning strategies employed by SMP N 12 Semarang students. Therefore, additional research is needed to explore the implications of vocabulary acquisition in different contexts. The researcher suggests that future studies utilize qualitative and quantitative research designs. Interviews and observations can be employed to collect data for qualitative investigations. Moreover, vocabulary size tests (e.g., Beglar, 2010) can be utilized to measure vocabulary knowledge in quantitative studies. Additionally, researchers can examine and investigate vocabulary learning across different genders, age groups, and proficiency levels to gain a comprehensive understanding of the subject matter.

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