



An Investigation into Vocabulary Learning Strategies and Their Relation to Vocabulary Size among EFL Learners

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Abstract

This study investigated vocabulary learning strategies (VLSs) and their relation to vocabulary size among Saudi female EFL learners at Taibah University. The research employed a descriptive-correlational design to explore the types of VLSs most frequently used by learners, vocabulary size levels, potential differences based on academic disciplines, and whether there was a statistically significant relation between the overall VLS and the vocabulary size. The sample consisted of 186 undergraduate EFL female students from four colleges at Taibah University (Humanities and Arts, Computer Science and Engineering, Science, and Business Administration) who completed a Vocabulary Learning Strategies Survey (VLSS) based on a VLS taxonomy and a shortened version of the Vocabulary Size Test (VST). Key findings revealed that EFL participants were high users of vocabulary learning strategies. Cognitive strategies were the most frequently used, followed by memory and determination strategies, while metacognitive and social strategies were less common. Also, participants exhibited a moderate vocabulary size level, with the highest scores obtained by Computer Science and Engineering students. There were no statistically significant differences in vocabulary size across disciplines, but statistically significant differences emerged in the use of social, cognitive, and metacognitive strategies. There was no statistically significant correlation between the overall vocabulary learning strategies usage and vocabulary size level. Still, a statistically significant correlation was found between discovery strategies and vocabulary size among participants from the Computer Science and Engineering College.

Keywords: *vocabulary learning strategies, vocabulary size, EFL learners.*

1. Introduction

Vocabulary is a complex element in learning a second or foreign language. Despite this complexity, vocabulary acquisition remains elusive in second language learning; Schmitt (2000) stated that words are not easily acquired, particularly for adult learners. A word can be challenging for various reasons, such as irregular spelling patterns, difficult phonemic features, unfamiliarity, a lack of a clear connection between form and meaning, the necessity for conceptual knowledge, unpredictable grammatical patterns, specific collocations, or usage constraints, like being limited to a particular dialect (Webb & Nation, 2017). Consequently, communication problems arise due to the inappropriate use of lexical items (Qian & Lin, 2020). Thus, Vocabulary Learning Strategies are employed to facilitate vocabulary learning for EFL learners. These strategies, also referred to as Language Learning Strategies, are processes intentionally selected by learners that can lead to actions aimed at improving the acquisition or application of a second language (L2) by storing, recalling, and using information regarding that language (Cohen, 1998). Several researchers (e.g., Gu & Johnson, 1996; Oxford, 1990; Schmitt, 1997) have proposed various classifications of Vocabulary Learning Strategies. For instance, Schmitt (1997) built upon Oxford's (1990) framework, identifying five distinct Vocabulary Learning Strategies aimed at discovering new word meanings and solidifying knowledge of words previously encountered: determination (e.g., utilizing dictionaries or inferring from context), social (e.g., consulting with teachers or peers), memory (e.g., visualizing word meanings or employing actions), cognitive (e.g., practicing repetition or making notes), and metacognitive (e.g., engaging with English-language media). While understanding VLS categories is important, it is equally essential to consider how their usage is reflected in learners' vocabulary knowledge. Measuring vocabulary size alongside VLS is essential for assessing learners' lexical competence. Vocabulary size is a quantifiable attribute requiring a specific unit of measurement. Vocabulary size research operates on the basic premise that the total number of words a person is familiar with—the breadth of their vocabulary stock—serves as a measure of vocabulary knowledge (Harrington, 2018). It is suggested that a strong relationship exists between text coverage (e.g., vocabulary size) and comprehension (Milton, 2009). Furthermore, Milton stated that a learner needs to be familiar with at least 95% of the text to comprehend it fully. Oxford



and Nyikos (1989) emphasized that the academic major can influence mental behavior preferences. Although previous research has highlighted Vocabulary Learning Strategies, few studies have examined their relationship to vocabulary size or analyzed the differences based on specialty variables. So, this study aimed to investigate Vocabulary Learning Strategies used by Saudi EFL female learners at Taibah University, the level of vocabulary size of these learners, the differences in terms of specialty variable, and the relationship between the use of VLSs and vocabulary size among Saudi EFL female learners at Taibah University. Despite widespread recognition of the role of VLS in SLA, few studies have explored how these strategies vary by academic discipline or how they relate to vocabulary size in the Saudi context, especially among non-English majors. Existing research shows that there are considerable contextual limitations in examining the connection between VLS and vocabulary size. Although various studies have taken place across different ESL and EFL environments, the Saudi context remains largely unexplored, particularly at Taibah University. Moreover, current Saudi research (e.g., Alahmad, 2020; Alsharif, 2022) primarily targeted English-major students, neglecting the needs and challenges of freshman year or non-English majors—a vital group frequently facing difficulties in acquiring foundational vocabulary. This limited perspective restricted the applicability of the findings to wider university settings where English is used as a medium of instruction, rather than a field of study. Therefore, it is important to investigate how VLSs vary across different colleges and their relationship to vocabulary size.

So, this research will answer the following questions:

- R. Q.1 What Vocabulary Learning Strategies do Saudi EFL female learners at Taibah University use?
- R. Q.2 What is the level of vocabulary size among Saudi EFL female learners?
- R. Q.3 What are the differences among participants in vocabulary usage and size in relation to the specialty variable?
- R. Q.4 How does the use of Vocabulary Learning Strategies by Saudi EFL female learners at Taibah University relate to their vocabulary size?

2. Review of Literature

2.1 Vocabulary Learning Strategies

Gu and Johnson (1996) stated that, “vocabulary is no longer thought of as acquired as separate items; it is an integral part of discourse and is developed along with reading strategies such as contextual guessing” (p. 646). Vocabulary Learning Strategies are considered a subset of LLS, which themselves fall under the umbrella of general learning strategies. Research on VLSs often echoes findings from studies on general LLSs, particularly in emphasizing learners’ active roles in the learning process as Schmitt (1997) highlighted that the increased focus on learning strategies signals a shift toward learner autonomy—a key concept in second language acquisition, where learners take control over their vocabulary learning and employ strategies to regulate their own learning processes. Schmitt categorized VLS into two main types: discovery strategies and consolidation strategies. Discovery strategies are used when learners encounter unfamiliar vocabulary, typically in incidental learning contexts, including determination and social strategies. In contrast, consolidation strategies are employed to reinforce and retain previously encountered words, aligning more with deliberate learning, including social, memory, cognitive, and metacognitive strategies.

2.2 Vocabulary Size

The term ‘word’ is commonly used for convenience, but it encapsulates specialized definitions, including types, tokens, lemmas, and word families (Milton, 2009). The terms ‘types’ and ‘tokens’ differentiate two kinds of counts. Tokens indicate the total number of words in a text or corpus, whereas types represent the count of distinct words regardless of how often they occur (Harrington, 2018; Lieber, 2009). A lemma, or lexeme, consists of all regularly inflected forms sharing the same stem and belongs to a single word family. As defined by Hirsh and Nation (1992), word family refers to inflected and regularly derived forms of a known base word. The concept suggests that if learners are familiar with the affixes, these variations can also be considered known words. The term “family” serves as an especially suitable framework for examining vocabulary recognition in a second language, as it primarily focuses on meaning and the potential of meaning (Nation, 2006). Harrington suggested that the fundamental premise is that if a person understands the meaning of a base word, they will likely grasp the different inflections and derivatives in which that word appears, at least to some extent. This premise has proven valuable in connecting an individual’s vocabulary size to using



a second language (L2), but it is not an absolute rule. The notion that a learner familiar with the meaning of “build” will recognize the meaning of “builder” upon first encounter is based on probability rather than certainty. According to Webb and Nation (2017), vocabulary assessment acts as a diagnostic instrument to pinpoint words learners struggle with and gauge their proficiency in acquiring vocabulary, ensuring that students learn high-value words while enhancing their vocabulary acquisition skills. The Vocabulary Size Test (VST) is an effective tool for measuring receptive vocabulary breadth among various assessments. Initially created by Nation and Beglar in 2007 to evaluate knowledge of up to 14,000 words, it has been updated to include assessments of up to 20,000 words, making it appropriate for assessing advanced learners nearing native-like proficiency.

2.3 Vocabulary Learning Strategies in Relation to Vocabulary Size

In EFL context, numerous studies have explored VLS and vocabulary size, yet few have established a correlation between them. Alahmadi, Shank, and Foltz (2018) investigated the differences between undergraduate and postgraduate learners regarding VLS and vocabulary size. Undergraduate learners often employed simpler strategies compared to their postgraduate counterparts. Additionally, those who utilized a greater variety of strategies typically possessed a larger vocabulary. Alahmad (2020) examined the correlation between undergraduate learners and revealed a positive correlation. Alsharif (2022) conducted a study with undergraduate students that found a positive correlation between certain VLSs and vocabulary size. Notably, it emphasized metacognitive strategies as categorized by Schmitt (1997). Research consistently highlights positive relationships, often related to learner proficiency and strategy training. Alahmadi et al. (2018) observed that undergraduates employing a variety of strategies exhibited a larger vocabulary size. Alahmad (2020) and Alsharif (2022) further highlighted the significance of metacognitive strategies and the status of advanced learners (e.g., senior English majors), suggesting that contextual and proficiency-related factors play a crucial role in this context. These studies suggest a lack of generalizability due to variations in participants’ characteristics and teaching contexts.

3. Methodology

This study aimed to investigate vocabulary learning strategies and vocabulary size, their relationship, and possible differences in academic disciplines among EFL undergraduate learners at Taibah University. The study used a descriptive-correlational design, which is appropriate for examining existing conditions and the statistical relationship between measured variables.

3.1 Population and Sample

The population of this study consisted of female learners at Taibah University from four colleges who were enrolled in EFL courses for the 2024/2025 academic year. Taibah University learners typically have EFL courses as a part of their program study plan, making them a relevant group to investigate vocabulary learning strategies and vocabulary size. The sample of the study consisted of 186 EFL female learners from four colleges at Taibah University: College of Humanities and Arts, College of Management and Business Administration, College of Computer Science and Engineering, and College of Science. The study employed a convenience sampling method, a type of non-probability sampling. This sampling method was chosen due to the extensive nature of the survey conducted in this study and the timing of response collection, when a limited pool of students was available for selection. While this method limits the sample’s representativeness and constrains generalizability (Creswell, 2014), the inclusion of participants from four distinct academic backgrounds provided a diverse basis for analyzing variation in vocabulary learning strategy use.

3.2 Instruments

This study employed two research instruments: the Vocabulary Learning Strategies Survey (VLSS) and the Vocabulary Size Test (VST). The first instrument, the VLSS, is based on Schmitt’s (1997) taxonomy. The second instrument, the VST, was adapted from Nation and Beglar (2007).

3.2.1 VLSS



The VLSS was based on Schmitt's (1997) taxonomy. The survey consisted of 58 items divided into two broad categories: discovery strategies and consolidation. There are subcategories within each of these two categories. The determination strategies fall under discovery strategies, along with some social strategies. The memory, cognitive, and metacognitive strategies belong to the consolidation category. The rating scale for the items utilized a Likert scale from 1 to 5, where one means never, two means rarely, three means sometimes, four means usually, and five means always. The researcher translated it into Arabic and revised it with an assistant professor in translation to ensure accuracy and prevent misunderstandings. Additionally, a demographic section was added before the VLSS section to collect background information about participants' ages, year of enrollment, study levels, colleges, departments, and academic disciplines.

3.2.2 VST

This study adapted the Vocabulary Size Test (VST) developed by Nation and Beglar (2007), reducing the original 100-item version to 40 items. The purpose of reducing the test was to avoid making the survey lengthy and tedious for participants, which may have resulted in their loss of interest in completing it. This test measured word families of 20 words. In the original 100-item version, every five questions assess a word family. In the reduced version, the 40-item test, every two questions assess a word family. Each word family represents 1,000 English words. The scoring method for the 100-item test involved multiplying participants' scores by 200 to determine their vocabulary size, which is equivalent to 20,000 words. In the shortened version, participants' scores should be multiplied by 500 to ascertain their vocabulary size from 20,000 words.

3.3 Data Analysis

The program utilized for analysis in this study is SPSS. Below are the analyses in detail:

- Descriptive Statistics: to calculate measures of central tendency (Mean Score), and measures of variability (Standard Deviation, Minimum, and Maximum Variables).
- One-way Analysis of Variance (ANOVA Test): to determine whether there are any statistically significant differences between the means of the four groups of participants regarding the use of VLSS and VS.
- Pearson Correlation Coefficient: to measure the relationship between vocabulary learning strategies and vocabulary size.

4. Results

To answer the first research question, the most frequently used type of vocabulary learning strategies by Taibah University EFL female students is cognitive strategies ($M=3.6828$), followed by memory strategies ($M=3.5916$), and determination strategies ($M=3.5305$). The least frequently used type of vocabulary learning strategies is metacognitive strategies ($M=3.4484$) and social strategies ($M=3.3878$).

To answer the second research question, the vocabulary size test was divided into five levels according to test scores (see Table 1). The obtained statistics were frequencies, mean, standard deviation, and vocabulary size level (see Table 2). EFL female participants at Taibah University had a moderate vocabulary size level. The largest vocabulary size level at Taibah University was obtained by EFL female students at the College of Computer Science and Engineering ($M=19.0667$), followed by EFL students at the College of Business and Administration ($M=18.0667$), and then by EFL students at the College of Science ($M=17.0811$). The lowest vocabulary size was among learners in the College of Humanities and Arts ($M=15.5763$).

Table 1. Levels of VST & Their Interpretation

Score	Level	Number of Words
0 – 7	Very Low	0-3,500
8 – 15	Low	4,000-7,500
16 – 24	Moderate	8,000-12,000
25 – 32	High	12,500-16,000
33 – 40	Very High	16,500-20,000



Table 2. Descriptive Statistics of Vocabulary Size Test

College	VST	N	Minimum	Maximum	Mean	Std. Deviation	level
College of Arts and Humanities	Scores of VST	59	4.00	36.00	15.5763	8.01336	Moderate
College of Computer Science and Engineering	Scores of VST	60	7.00	40.00	19.0667	8.53679	Moderate
College of Science	Scores of VST	37	7.00	40.00	17.0811	8.01865	Moderate
College of Business Administration	Scores of VST	30	5.00	36.00	18.0667	8.51746	Moderate
Total	Scores of VST	186	4.00	40.00	17.4032	8.32540	Moderate

To answer the third research question, there were no statistically significant differences among EFL participants at Taibah University in the Vocabulary Size Level in relation to the specialty variable.

To answer the fourth research question, there was no statistically significant correlation between the overall vocabulary learning strategies usage and the vocabulary size level of EFL female participants at Taibah University. To further investigate the correlation between individual vocabulary learning categories and vocabulary size level, separate Pearson correlations were computed. It turned out that there was a weak, positive, statistically significant correlation at the level of (0.05) significance between the usage of determination strategies and vocabulary size level. Determination strategies were identified as a positive predictor of vocabulary size level. There was a negative statistically significant correlation at the level of (0.01) significance between the usage of metacognitive strategies and vocabulary size level. There was no statistically significant correlation between the usage of social, memory, and cognitive strategies and vocabulary size levels. Additionally, correlation coefficients were computed between the main categories of VLS and vocabulary size across different colleges revealing a positive statistical significant correlation at the level of (0.01) significance between the usage of discovery strategies and the level of vocabulary size among EFL participants in the College of Computer Science and Engineering, a negative statistical significant correlation at the level of (0.05) significance between the usage of Consolidation strategies and the level of vocabulary size among EFL participants in the College of Business Administration, and no statistical significant correlation between the usage of VLS categories and the level of vocabulary size among EFL participants in the colleges of Arts and Humanities and Science.

5. Discussions

The findings indicated that Saudi EFL learners at Taibah University relied mainly on cognitive strategies, consistent with Oladini, Mazlum, and Dasta (2024), who also found cognitive strategies to be most frequent. However, the results differ from Huang (2023), who reported that determination strategies were most commonly used among Taiwanese learners. This difference could stem from several factors: rigid textbooks that favor a teacher-centered approach, misconceptions about students' readiness for higher-order thinking skills, the fact that they are non-majors, and limited contact hours. These constraints reduce opportunities for language practice outside the classroom, making students hesitant to utilize more indirect strategies.

Participants demonstrated a moderate vocabulary size, which aligned partly with previous studies on Saudi EFL learners (Alsalamah, 2011; Kader, 2018). However, their higher average scores may be attributed to generational factors, shorter test versions, or differences in test design.

Similar to the second question, several studies investigated the vocabulary size of Saudi EFL learners (Alsalamah, 2011; Kader, 2018). Both studies utilized Nation and Beglar's (2007) vocabulary size test, which measured up to 14,000 word families. The results indicated different results, ranging from very low to low vocabulary size level. This considerable difference could stem from various factors, including the different versions of vocabulary size tests used, generational factors, and the adaptation of a shortened 40-question test instead of the standard 100-question test.

The absence of significant differences across specializations supports Oxford and Nyikos's (1989) view that learners' strategic preferences can vary by academic major, but these variations are often minimal at early stages of study. Similar findings were reported by Afshar, Moazam, and Arbabi (2014) and Gu (2002), who did not find any significant differences in VLS use across different disciplines.

Although there was no overall significant correlation was found between VLS use and vocabulary size, determination strategies showed a weak positive relationship. This is inconsistent with previous



studies. There are many studies investigated the relation between VLSs and vocabulary size, yet very few have addressed non-English major learners. In the EFL context, some studies revealed a significant positive correlation between VLSs and vocabulary size, while others did not. Nirattisai and Chiramanee (2014) highlighted significant correlations between VLS and vocabulary size across diverse undergraduate EFL learners. Abid (2019) reported no significant correlation among undergraduates; however, Tian (2020) found significant correlations when examining VLSs and vocabulary size. Several studies in the Saudi EFL context concluded that there was a positive correlation between utilizing VLSs and vocabulary size (Alahmad, 2020; Alahmadi et al., 2018; Alsharif, 2022). In a recent study by Alnan and Halim (2024), Syrian EFL learners showed a positive correlation between social and metacognitive strategies to vocabulary size. Differently, this study suggested that learners who actively use problem-solving and discovery-based approaches may acquire vocabulary more effectively. The negative correlation with metacognitive strategies could reflect limited self-regulation or strategy awareness among first-year students.

6. Conclusion

This study investigated the vocabulary learning strategies and vocabulary size of Saudi EFL learners at Taibah University. The findings revealed that cognitive strategies were the most frequently used, while metacognitive and social strategies were the least used. The participants showed a moderate vocabulary size level, with no significant differences across different majors. Although the overall correlation between strategy use and vocabulary size was not statistically significant, determination strategies showed a weak positive predictor. Future research is recommended to explore these relationships among larger samples, including both genders, and across different academic contexts.

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