



Exploring the Correlational Relationship between Vocabulary Size and Learning Strategies among Iraqi EFL Students

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Abstract

It is an obvious fact that second language learners always have different encounters with vocabulary learning right from their early stage and this task appears to be a never-ending experience. Therefore, an investigation centered on students' vocabulary learning strategies is both theoretically and practically interesting to be able to uncover how students use vocabulary learning strategies and what is the effectiveness of these strategies in equipping students to be proficient in second language learning. This study explores the vocabulary learning strategies used by 120 Iraqi students studying in secondary public schools. It aims to investigate whether there is a significant relationship between vocabulary size and vocabulary learning strategies. An adapted questionnaire for vocabulary learning strategies and a vocabulary size test were used as the instruments for the data collection. The findings indicated that there is a moderate use of learning strategies by the participants. With the cognitive strategy being the most frequently used, the outcome of the research revealed that the participants had a low vocabulary size. Furthermore, the correlational analysis shows a positive and significant relationship between vocabulary size and vocabulary learning strategies, indicating that both cognitive and memory had more contribution to the vocabulary size than the other learning strategies. The findings of this research are expected to have a profound impact on educational policymakers on issues related to learning outcomes and the overall development of students' English proficiency.

Keywords: Correlational, Relationship, Vocabulary Size, Learning Strategies, Iraqi EFL Students

استكشاف العلاقة الارتباطية بين حجم المفردات واستراتيجيات التعلم لدى الطلبة العراقيين الدارسين للغة الانكليزية كلغة اجنبية

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من البديهي أن متعلمي اللغة الثانية يواجهون دائماً تجارب مختلفة مع تعلم المفردات منذ مراحلهم الأولى، ويبدو أن هذه المهمة تجربة لا تنتهي. لذلك، يُعدّ البحث الذي يركز على استراتيجيات تعلم المفردات لدى الطلاب أمراً مثيراً للاهتمام من الناحيتين النظرية والعملية، إذ يُمكن من كشف كيفية استخدام الطلاب لهذه الاستراتيجيات، ومدى فعاليتها في تأهيلهم لإتقان تعلم اللغة الثانية. تستكشف هذه الدراسة استراتيجيات تعلم المفردات التي يستخدمها 120 طالباً عراقياً يدرسون في المدارس الثانوية الحكومية. وتهدف إلى التحقق من وجود علاقة دالة إحصائية بين حجم المفردات واستراتيجيات تعلمها. تم استخدام استبيان مُعدّل لاستراتيجيات تعلم المفردات بالإضافة إلى اختبار حجم المفردات كأدوات لجمع البيانات. أشارت النتائج إلى وجود استخدام



متوسط لاستراتيجيات التعلم من قبل المشاركين. حيث كانت الاستراتيجية المعرفية هي الأكثر استخدامًا، كشفت نتائج البحث كذلك أن المشاركين لديهم حجم مفردات منخفض. علاوة على ذلك، يُظهر التحليل الارتباطي علاقة إيجابية ودالة إحصائيًا بين حجم المفردات واستراتيجيات تعلمها، حيث أظهرت الدراسة أن كلاً من الإدراك والذاكرة كان لهما مساهمة أكبر في حجم المفردات مقارنةً باستراتيجيات التعلم الأخرى. ومن المتوقع أن يكون لنتائج هذا البحث تأثير عميق على صناع السياسات التعليمية بشأن القضايا المتعلقة بنتائج التعلم والتطوير الشامل لكفاءة الطلاب في اللغة الإنجليزية.

الكلمات المفتاحية: العلاقة الارتباطية، حجم المفردات، استراتيجيات التعلم، الطلاب العراقيون الذين يدرسون اللغة الإنجليزية كلغة أجنبية

Introduction

Language learners whether second or foreign appeared to be the most likely to recognize the importance of vocabulary in every learning experience (Tseng & Schmitt 2008). Vocabulary poses challenges to non-native language users in their quest to find suitable words or expressions to communicate both verbally and in written forms (Grabe & Stoller, 2018). Lack of appropriate words or expressions is also detrimental to both reading and listening. Findings from previously published literature have stressed the importance of vocabulary knowledge and its connection to the ability to read and write (Gardner, White-Farnham, 2013, Nation, 2019).

Vocabulary stands for a word collection that humans accumulate over time; it's believed that humans have a mental lexicon that is responsible for storage and information retrieval, the information, and words stored are called vocabulary (Gu & Johnson, 1996). Nakatake (2011) sees vocabulary as the total number of expressions or words acquired by a foreign language learner. Acquisition of sufficient vocabulary is a fundamental part of language ability and serves as the foundation of the human capacity to read, write, and listen in any language (Boonkongsan, 2012). Therefore vocabulary mastery is considered to be a key element to all language skills as it is a prerequisite that learners need to know for general and educational needs. Having a limited vocabulary will render a person less effective in a language as he will not be able to read, write, and understand effectively (Bai, 2018).

Previously published literature indicated a wide gap of consensus among scholars on the appropriate numbers of vocabulary or appropriate learning strategies one should have or follow to be considered a sufficient speaker of a language.(Alshammari, 2020; Amirian, & Heshmatifar, 2013: Alnan, & Abd Halim, 2024; Settar Abid, 2017;) explored the vocabulary learning strategies among second language user in different domains. According to Laufer, Aviad-Levitzky (2017) for one to be proficient in reading comprehension he needs to



acquire at least 3000 – a word level (three thousand) as this figure may stand between 90-95% of most comprehension texts. Other researchers opined that a 5000-word level could be an appropriate number of vocabularies.

Teaching approaches that addressed divergent learning methods could potentially enhance vocabulary knowledge and could trigger academic progress (Sullivan & Brown, 2014). This idea is supported by Nation (2006) who stressed that vocabulary learning approaches might help in obtaining a significant number of vocabulary knowledge. Therefore, understanding strategists that are used in learning and their relationship to vocabulary acquisition is very crucial, as they could potentially influence learners' decisions as well as learning responsibility (Ghazal, 2007).

Review of Related Studies

Gu and Lornklang (2021) view strategic vocabulary learning as a deliberate or self-motivated interactive process for the effective and even pleasant learning of vocabulary. Learning to be proficient in vocabulary strategically entails that one has to be aware of relevant evidence-based strategies, be familiar with their usage, and evaluate their application and sustainability. Such a self-directed vocabulary learning approach allows learners to be accurate and acquire only relevant vocabulary instead of dwelling on or picking from whatever comes their way in dictionaries or other language inputs. (Schmitt & Schmitt 1993) Effective utilization of vocabulary learning strategies empowers learners to know when and where the most relevant vocabulary could be obtained, and which methods suited the learners most. Furthermore, sufficient awareness of vocabulary learning strategies prepares students to evaluate their learning continuously and improve their overall general outcome.

Evidence from the previously published literature indicated that attempts have been made to categorize the vocabulary-learning strategist into several taxonomies (Ghalebi, Sadighi & Bagheri, 2020) One such taxonomy was proposed by Schmitt (1999) in which vocabulary-learning strategies were classified into two broad categories consisting of several sub-categorizations. Exploration of how to locate the meaning of new words and expressions is referred to as discovery in Schmitt's (1999) taxonomy, however, the strategy that strengthens the forms of new words and their meaning is known as consolidation (Wahyudin, Pustika & Simamora, 2021).



The discovery as a strategy was further subdivided into “determination” a strategy that concentrates on exploring and analyzing unfamiliar words their contextual use and elements of constituents or resorting to a dictionary for meaning determination (Taka, 2008). It also involves strengthening the need for learners to discover meaning themselves either through the identification of part of speech or using contextual clues to guess meaning (Asgari & Mustapha, 2011). Social strategies, on the other hand, involve associative means through working with teachers, classmates, or native speakers to determine the meaning of a word.

Four different sub-categorizations of strategies were mentioned under “consolidation” These sub-categories include metacognitive, cognitive, memory, and social. The metacognitive strategy entails making decisions by taking into cognizance the entire learning process through planning, monitoring, and evaluating the most suitable learning process either by considering others' speech or using media to improve one's vocabulary. Using this strategy, learners could evaluate their learning outcomes for significant improvement (Zhang & Lu, 2015). when using the cognitive process, learners focus more on the mechanical aspect of vocabulary learning by using word repetition either orally or written, using a notebook, highlighting words, and identifying physical objects (Chiew & Ismail, 2021). It also entails having an overview of the process of learning focusing more on the best way to learn for effective outcomes. Paying more attention to how others use the language either through media or other means (Asyiah, 2017).

Using memory as a strategy signifies using strategies that will help learners to recall the encountered words like using word and their referent images, synonyms, and antonyms, considering pronunciation or spelling of words, analyzing both the morphological and syntactic components of the words they come across (Catalan, 2003). It involves using existing knowledge to relate to the newly encountered words using grouping or imaginary means. The social means incorporates an associative approach in which learners work with other colloques, teachers, and L2 students for appropriate learning or incorporation of new vocabulary.

Among the most cited taxonomies in the literature on vocabulary learning strategies is the one presented by Gu and Johnson (1996) whose taxonomy was used to evaluate students of English as a foreign language in China. Their taxonomy initially contains 108 items; many scholars have hugely criticized it for being lengthy and incorporating unnecessary items, which called for its revision and modification (Hamzah, Kafipour & Abdullahi, 2009). After undergoing several modifications, the taxonomy was grouped into two having currently 62 items in general (Gu, 2018). The first group is termed “beliefs” which contains 10



items on whether students should prioritize memorization or words should be learned through use. The second group has 52 items ranging from metacognitive strategies, inferencing, dictionary use, note-taking, rehearsal strategies, encoding strategies, and activation strategies (Gu, 2018).

Selective attention is favored in the metacognitive category, it involves the identification of important words by learners and paying much attention to them where this will help them to be proficient in the second language without necessarily depending on the words presented in the class (Gu, 2003). The use of logic and contextual clues is categorized as inferencing, here learners guess the meaning of encountered words using background knowledge (Astika, 2016). Understanding the meaning of lexical items through sorting to dictionaries for more information on the use, origin, and pronunciation is categorized under the dictionary use. The note-taking strategy, however, refers to putting down words in the record with all their information. The constant use of oral or visual repetition to contextualize new words refers to rehearsal strategies; it encompasses creating words' images in one's mind, seeking words with similar sounds, and considering their syntactic and morphological structure. The activation as a strategy denotes learners' actual use of the words in making their sentences.

A new taxonomy was later developed by Schmitt (2000) as an upgrade of his former taxonomy and at the same time describing the other aforementioned taxonomies as faulty and not exhaustive for their inability to provide a full diverse of strategies that learners could lay their hand on. In his attempt to develop this taxonomy, Schmitt (2000) referred to Oxford's (1990) classification of the language acquisition process. The current research is potentially designed to validate Schmitt's (2000) taxonomy questionnaire by evaluating the strategies used by the participants in their learning process.

Past Studies on the Effects of Vocabulary Learning Strategies on Other Variables

Findings from previously published literature indicated that there are huge scholarly works on the effects of learning strategies on other variables. The study of Zhang and Lu (2015) is one such study in which the relationship between vocabulary learning strategies and vocabulary knowledge was investigated. The instruments that were used in collecting the data from 150 Chinese undergraduate students include Qian and Lin's (2019) depth of vocabulary knowledge test, Schmitt's (1997) VLS taxonomy and Schmitt, Schmitt, and Clapham's (2001) vocabulary Level Test or VLT. The structural equation model was the method employed to analyze the data. The findings of the research indicated that using



word forms and their associative meaning as a strategy has a tremendous effect on both the vocabulary breadth and depth of knowledge. It also indicated that some strategies do have effects on recalling meaning and meaning recognition. Some of the limitations of the study were that the instrument only captured meaning recognition and meaning recall as two levels of vocabulary breadth neglecting other fundamental components of language production.

Another scholarly work in this regard with added variables was where Gu and Johson's (1996) questionnaire was used to correlate with vocabulary size test scores and evaluate the relationship between knowledge of vocabulary, the use of vocabulary learning strategies, and language proficiency. Multiple regression analysis was used as the method of data analysis. In striking similarity with the results of Zhang and Lu (2015), the findings indicated several strategies predicted vocabulary size, the same way multiple predicted language proficiency, however, the most predicted factors for proficiency were found to be selective attention and self-initiation. In a more recent study conducted by Fan (2020) gender, discipline, and proficiency level were correlated with the use of learning strategies and the size of vocabulary knowledge. Four hundred and nineteen (419) participants took part in the study using the Words Association Test (WAT) and vocabulary learning strategies questionnaire. The structural equation model was used to analyze the data. The findings indicated a correlation between vocabulary learning strategies and vocabulary knowledge. The result also displayed a negative relationship between socializing and vocabulary breadth and depth. On the other hand repetition, note-taking, dictionary use, and association were also found to be not correlated with vocabulary knowledge. Guessing and attention were found to be related to language proficiency.

Other studies in this direction include that of Mohmoud and Arslan (2017) who used 118 Iraqi EFL to investigate the relationship between vocabulary learning strategies and vocabulary size. Schmitt's (1997) questionnaire and Schmitt et al.'s (2001) VLT were used as the instruments for the data collection. Their findings indicated more frequent use of consolidation as a strategy than discovery as a vocabulary learning strategy. In addition, it was also discovered that the students favor using sounds to remember when compared with working in a group as a strategy. The result further illustrated that the students' use of vocabulary learning strategies accounts for 28.4% of the variance in vocabulary learning test scores which signifies that there is a strong relationship between vocabulary learning strategies and vocabulary size. This finding is more pronounced in the literature than otherwise e.g. (Gu & Johnson, 1996; Zhang & Lu 2015). A similar study was conducted at Egyptian University by Kassem (2010) who explored the students'



use of vocabulary learning strategies. An adapted questionnaire from Gu and Johnson (1996), and Fan's (2003), and language proficiency test were used in the data collection procedures. It was found that the strategies of rehearsal and guessing were among the most frequently used strategies. The finding further illustrated a rare use of dictionary, activation, and management strategies by the participants. However, a significant positive linear relationship was found between language proficiency and vocabulary learning strategies. The criticism attached to Kassem's (2010) study is that of insufficient sample size and use of invalidated language proficiency tests. Therefore, the present research used validated instruments in the data collection.

Problem Statement and Research Questions

Learning to acquire vocabulary is very crucial for the professional development of second language users. However, persistence problems and difficulties have been observed to have been affecting second language users (Bello, Yap, Chan & Nimehchisalem, 2020; Chang, Li, & Lu, 2021; Wahyudin, Pustika, & Simamora, 2021), especially due to the lack of sufficient vocabulary to navigate in the second language effectively. One such problem is how to commit a considerable amount of second-language words for daily use. This problem has an adverse effect on the choice of vocabulary learning strategies. Failure to correctly and effectively choose vocabulary learning strategies could jeopardize learning, as second language users are not able to extract words and expressions as quickly as possible to communicate. Environments as well as first language influence are also among the non-neglecting factors in second language vocabulary acquisition. Based on the above-prevailing issues in second language learning, this research is designed to evaluate the use of vocabulary learning strategy by Iraqi EFL students through the guidance of the following questions.

- Which types of vocabulary learning strategies are explored more by the Iraqi EFL students in learning new English vocabulary?
- What are the ranges of vocabulary size accumulated by the Iraqi EFL students?
- Is there any significant positive relationship between vocabulary size and vocabulary learning strategies?

Methodology

The methods used in collecting as well as analyzing the data were expatiated. The research procedures and the instruments used in the research, the characteristics and homogeneity of the participants were all explained below.

Participants



The research used a purposive sampling technique to select one hundred and twenty (120) students to partake in the research. The selected students were all secondary students from public schools in Iraq. They are a homogeneous group of participants who share similar characteristics of educational background and age. Their age ranges between 16-17 years of age comprising both males and females. The voluntary participation procedure was employed in such a way that the participants have the right to participate or not based on their willingness.

Research Instruments

This research makes use of two different instruments for its data collection; the first instrument is a questionnaire on vocabulary learning strategies which was developed by Schmitt (2000). It was used in the research to determine the specific vocabulary learning strategies employed by the participants in their quest to be proficient in the English language. The second instrument is a test of vocabulary developed by Beglar and Nation (2013) known as VST (Vocabulary Size Test) an elaborate discussion of these instruments is presented below.

Table 1. Schmitt's (2000) Vocabulary learning strategies

S/No.	Schmitt' (2000) VLSQ	Details
1	Memory	This involves the ability to store words using mental images and previous experiences in students' long-term memory.
2	Determination	Students employed this as a strategy by using contextual information of words or consulting a dictionary for further clarification and consolidation of meaning.
3	Social	It refers to the consultation of close mates or teachers for seeking clarifications and meaning of words.
4	Cognitive	Repetition of words or loudly uttering them for retention and familiarization. It also involves using a notebook for



recording newly encountered words for future reference.

- 5 Metacognitive Resorting to self-control either through listening to the radio, watching movies, reading new papers, or any other related activities is known as metacognitive strategy.

This questionnaire has forty (40) items and previous scholarly works indicated its suitability for students across different academic backgrounds. It also has a five-point scale in which participants were asked to indicate their preferred option when learning new vocabulary. These five-point scales include 1= never, 2 seldom, 3=sometimes, 4= often, 5= always. Based on the scale, higher strategy use is indicated by higher scores, lower use of strategy is however indicated by lower scores.

Vocabulary Size Test

The assessment tool used to evaluate the vocabulary size of the participants was proposed by Beglar and Nation (2013). It was meant to gauge the participants' written receptive vocabulary size in the English language. The primary objective of the assessment is to estimate whether the participants possess sufficient vocabulary to competently undertake a given task. The test potentially compares students' vocabulary size from the same educational level. 14- word families were used in the test which is categorized into high, mid, and low frequency. Based on the proposal of Beglar and Nation (2013) word ranges from 1000-2000 are considered to be within high word frequency, and word ranges between 3000 to 9000 are believed to be in mid frequency, however, words exceeding 10000 are regarded as low –frequency. Each word frequency family is composed of 10 questions to assess the understanding of the participants on ten 10 specific words.

This study will limit itself to high-frequency words as well as mid-frequency words. This limitation was found to be effective in previously published work (Alahmadi, Shank & Foltz, 2018). To be precise, the research favors the word families that fall within the range of 1000-4000. Therefore, the total number of questions used will be forty (40). The time factor is one of the rationales behind this limitation, additionally; findings from other published literature on vocabulary knowledge have suggested that Arab EFL students are less expected to have a vocabulary range of 4000 or above, (Daaboul& Nimehchisalem, 2017). It has also been indicated that speakers from non-native English backgrounds may tend to



have a range of vocabulary word sizes from 3000 to 6000-word families (Nation, 2013).

Research Procedures

The VLSQ and VST were distributed to the participants, and a brief but concise explanation of how to carry out the task was presented to the participants. They were made to know that there is no wrong or right attempt. Their identity and responses are purely for academic purposes and they would be confidentially treated. Though there was no time limitation given to the participant to complete the questionnaire as well as the test it took them an average of 45 minutes to complete all the tasks.

Data Analysis

A quantitative approach was used to analyze the data using means and standard deviation, inferential analysis was also conducted to reveal the relationships between the variables. Prior to this analysis, an exploratory data analysis was conducted to screen the data from any outliers; it was done by looking at the mean scores and standard deviation of the participants. The outcome of the analysis indicated that any z score above 2.5 is outside the range of the mean scores of the other participants. None of the participants was removed because the z scores found were between 1 and 2. The data was also found to meet the assumption of the normality test.

Findings

Using Schmitt's (2000) questionnaire that contains five different types of vocabulary learning strategies, the Iraqi students' ability to use different learning strategies was gauged in their quest to learn new English words. The descriptive analysis of the responses of the students on each learning strategy is presented in Table 2 below.

Table 2. Means score and SD of vocabulary learning strategies by Iraqi EFL students

S/No.	Schmitt' (2000) VLSQ	Means	Standard Deviation
1	Cognitive	3.21	.80



2	Memory	2.98	.77
3	Social	2.93	.95
4	Determination	2.88	.76
5	Metacognitive	2.69	.77

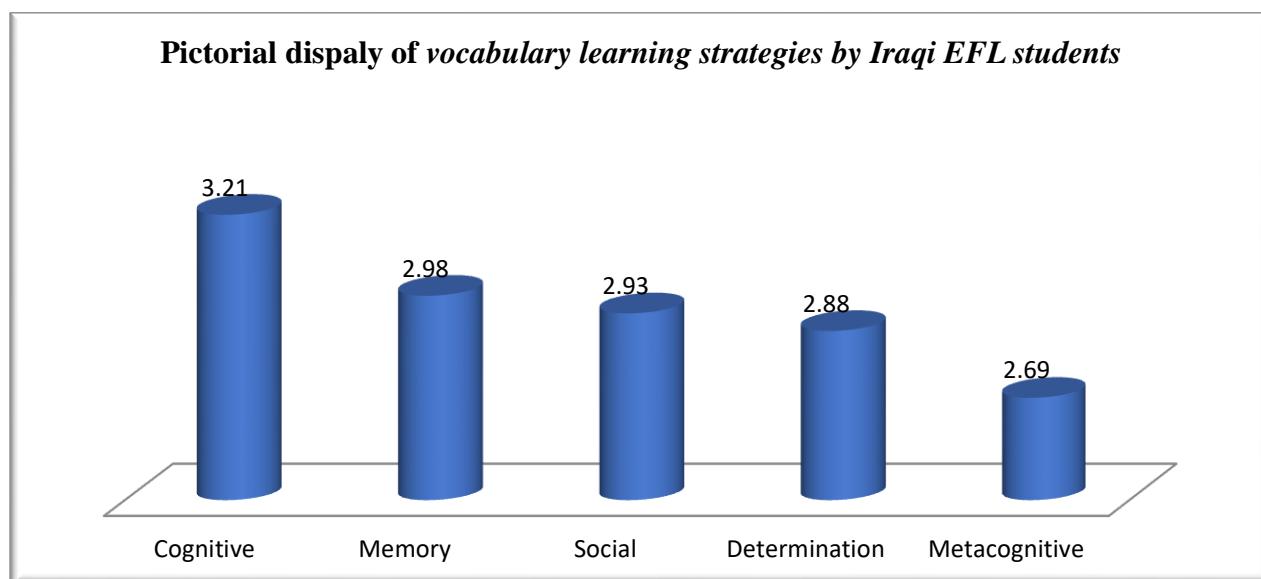


Figure 1. *Vocabulary learning strategies by Iraqi EFL students*

The result above from both Table 1 and Figure 1 portrays the preferences and choices of Iraqi EFL students when acquiring enough English vocabulary to be able to navigate the language successfully. It shows that the students employ more cognitive strategies ($M = 3.21$, $SD = .80$) when compared with memory ($M = 2.98$, $SD = .77$), Social ($M = 2.93$, $SD = .95$), determination ($M = 2.88$, $SD = .76$) and metacognitive strategy ($M = 2.69$, $SD = .77$). To buttress the result more, item based analysis was conducted to as the above result provided limited information on individual approaches. The results of the item-based analysis are presented below.

Table 3. *Frequency of Cognitive strategy employed by Iraqi EFL students*

Cognitive strategy		Mean	SD	Level
1	I rely on word repetition orally for mastery of new	3.55	1.35	Moderate



vocabulary

2	In learning new lexical items I compare words with their physical referent for meaning.	3.39	1.32	Moderate
3	I often consider revision of my previous class notes to consolidate meaning.	3.38	1.38	Moderate
4	Vocabulary CDS are my favorites in learning new vocabulary items.	3.37	1.37	Moderate
5	I use a vocabulary notebook with exemplary notes.	2.21	1.47	Moderate
6	I use flashcards with the meaning of lexical items in learning new vocabulary.	3.12	1.43	Moderate
7	I use new words repeatedly to construct several sentences.	2.89	1.28	Moderate
8	I practice words with their meaning orally.	2.82	1.65	Moderate

Notes: any scores ranging from 3.68 and above are considered high, from 2.34 to 3.67 are moderate, and 1.00 to 2.33 are defined as low.

The above table reveals that the utilization of cognition as a strategy by the participants falls within the moderate range. The highest technique is oral repetitions of newly encountered words for mastery ($M = 3.55$, $SD = 1.35$), followed by using vocabulary CDS by watching or listening to develop familiarizations ($M = 3.37$, $SD = 1.37$).

Table 4. *Frequency of memory strategy employed by Iraqi EFL students*

	Memory strategy	Mean	SD	Level
1	I use pictorial information to match meaning with lexical items.	3.32	1.31	Moderate
2	I use the grouping of words as a strategy to comprehend the meaning.	3.23	1.33	Moderate
3	I categorize words into their parts of speech for comprehension and internalization.	3.20	1.34	Moderate
4	I repeatedly utilized new words to make sentences.	2.95	1.26	Moderate



5	I apply prefixes and suffixes to the stem of words to generate new vocabularies.	2.82	1.20	Moderate
6	I matched new words with their synonyms or antonyms.	2.81	1.20	Moderate
7	I frequently use semantic maps to learn new words.	2.71	1.19	Moderate
8	I consider grouping new words based on spelling and pronunciation.	2.65	1.40	Moderate

Using memory as a strategy is demonstrated in Table 4, above. Based on the table it is clear that employing memory as a strategy in the acquisition of new vocabularies by the participants is at a moderate level. Memory strategy is considered by Schmitt (2000) as one of the consolidation strategies that offer students the benefits of accumulating a bunch of words through memorization. As indicated by the result students achieved this strategy through pictorial information to match meaning with lexical items for consolidation of new words ($M = 3.32$, $SD = 1.31$). Followed by grouping words ($M = 3.23$, $SD = 1.33$).

Table 5. *Frequency of Social Strategy Employed by Iraqi EFL Student*

	Social Strategy	Mean	SD	Level
1	In my attempt to acquire and expand the meaning of new words, I openly discuss with my classmates.	3.04	1.28	Moderate
2	I used to resort to the internet for more explanation and highlight new vocabulary.	2.95	1.32	Moderate
3	I use vocabulary games and puzzles using group work activities	2.85	1.25	Moderate
4	I use a communicative approach to interact with my lecturer using the English language.	2.70	1.42	Moderate
5	I used to converse with students of English as a second or foreign language through different social handles to master new English vocabulary.	2.70	1.42	Moderate
6	I used to communicate with my lecturers to discuss the meaning of new lexical items.	2.60	1.13	Moderate



7	I make group practice on the meaning of new vocabulary as my daily routine.	2.55	1.25	Moderate
8	I use translation and transliteration of new vocabulary into my L1 language.	1.90	1.22	Low

It can be inferred from the above table that the student's utilization of social strategy ranges from moderate to low. One of the most preferred strategies under the category of "social" is an open discussion with classmates using English ($M = 3.04$, $SD = 1.28$), which is followed by resorting to the internet for more explanation and highlight on new vocabulary, ($M = 2.95$, $SD = 1.32$). The third most used strategy is using vocabulary games and puzzles ($M = 2.85$, $SD = 1.25$). These findings show the students' convictions of the effectiveness of these strategies. However, the students' use of translation and transliteration of new vocabulary into their L1 language is found to be low. This finding may be stimulated by the lack of a relationship between English and the student's local language.

Table 6. *Frequency of determination strategy employed by Iraqi EFL student*

	Determination	Mean	SD	Level
1	I use contextual clues to guess the meaning of new words.	3.50	1.24	Moderate
2	I use guessing to discover the meaning of new words through other classes of words such as verbs, nouns, adjectives, etc.	3.00	1.30	Moderate
3	I use a monolingual dictionary (English – English) to check the meaning of new words.	2.89	1.45	Moderate
4	I use sentence grammatical structure to find out the meaning of new words.	2.82	1.25	Moderate
5	I use the aural features of words to guess their meaning, such as intonation, pronunciation, and stress.	2.72	1.23	Moderate
6	I use a bilingual dictionary (English-Arabic) to uncover the meaning of new words.	2.68	1.46	Moderate
7	I use a bilingual dictionary (Arabic- English) to	2.67	1.48	Moderate



uncover the meaning of new words.

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|---|--|------|------|----------|
| 8 | I guess the meaning of new words through analyzing the structure of the words. | 2.65 | 1.27 | Moderate |
|---|--|------|------|----------|

Table 6 reveals that the participants exhibit moderate usage of determination as a strategy. It has also been found that the most frequently used strategies are that of using contextual clues to guess the meaning of new words ($M = 3.50$, $SD = 1.24$) and guessing through classes of words ($M = 3.00$, $SD = 1.30$). When employing this strategy of “*determination*” students use their intuitive knowledge to evaluate the meaning of newly encountered words with the help of contextual clues or guessing through classes of words (Schmitt, 2000). Furthermore, preferences for using monolingual over bilingual dictionaries have been also found to be relevant to the students in their learning strategies, monolingual ($M = 2.89$, $SD = 1.45$), bilingual, ($M = 68$, $SD = 1.46$), ($M = 2.67$, $SD = 1.48$) English- Arabic and Arabic English respectively.

Table 7. *Frequency of metacognitive strategy employed by Iraqi EFL student*

Metacognitive	Mean	SD	Level
1 I use subtitles in English-speaking movies to learn new words.	3.69	1.47	High
2 I used to compare newly encountered vocabularies with previously learned ones for comprehension.	3.46	1.31	Moderate
3 I incorporate English songs to enhance learning new vocabulary.	3.45	1.57	Moderate
4 Written signs, advertisements, and notices are among the sources of my new vocabulary.	3.13	1.52	Moderate
5 My extra curriculum on textbooks, the internet, and journal articles enhance my knowledge of lexical items.	2.73	1.43	Moderate
6 Reading magazines, brochures, and articles expands my knowledge of lexical items.	2.57	1.46	Moderate
7 I listen to English radio programs to learn new vocabularies.	2.51	1.32	Moderate



8 I use word lists to test my vocabulary knowledge.	2.42	1.47	Moderate
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Table 7 shows how the metacognitive technique is employed by the participants in its different manifestations. The findings reveal how the students use subtitles in English-speaking movies to enhance their learning outcomes. The student's high use of subtitles when watching English-speaking movies is a strategy for augmenting mastery of new vocabulary ($M = 3.69$, $SD = 1.47$). Moderate use of metacognitive techniques was also discovered in other subcategories of metacognitive approach, for example, when comparing new encountered vocabularies with the previously learned ones for comprehension ($M = 3.46$, $SD = 1.31$), when incorporating English songs to enhance learning new vocabularies ($M = 3.45$, $SD = 1.67$), incorporating written signs, advertisements and notices are among the sources of new vocabularies was also found to be in moderate level ($M = 3.13$, $SD = 1.52$). The result of this nature is believed to be interesting as it portrays the students' self-reliance in their quest to be successful in learning (Antia, Catalano, Rivera & Creamer, 2021).

The Level of Vocabulary Size of Iraqi EFL Students

The analysis of the participant's vocabulary size is the second objective of this study. The vocabulary size is the total number of vocabulary that a student possesses in their mental repertoire for effective use or comprehension. To achieve this, the Vocabulary Size Test of Beglar and Nation (2013) was used. There were 40 questions in the test; the score of 0 is the minimum achievement while 40 is the maximum achievement score. The result of the exploratory analysis indicated that on average the participants had scored 18.2 out of 40 ($M = 18.30$, $SD = 7.88$). 6 and 39 were the minimum and the maximum scores respectively obtained by the participants. To have a better understanding of the performances of each participant, the scores were categorized into 'very low' scores of 1-8, the low scores range from 8.1-16, while 16-24 as intermediate scores, high scores are attached to the scores ranging from 24.1-32, and lastly the scores from 32.1 to 40 are considered to be very high scores. Figure 2, below depicts the distribution of the participants in the above-mentioned categories.

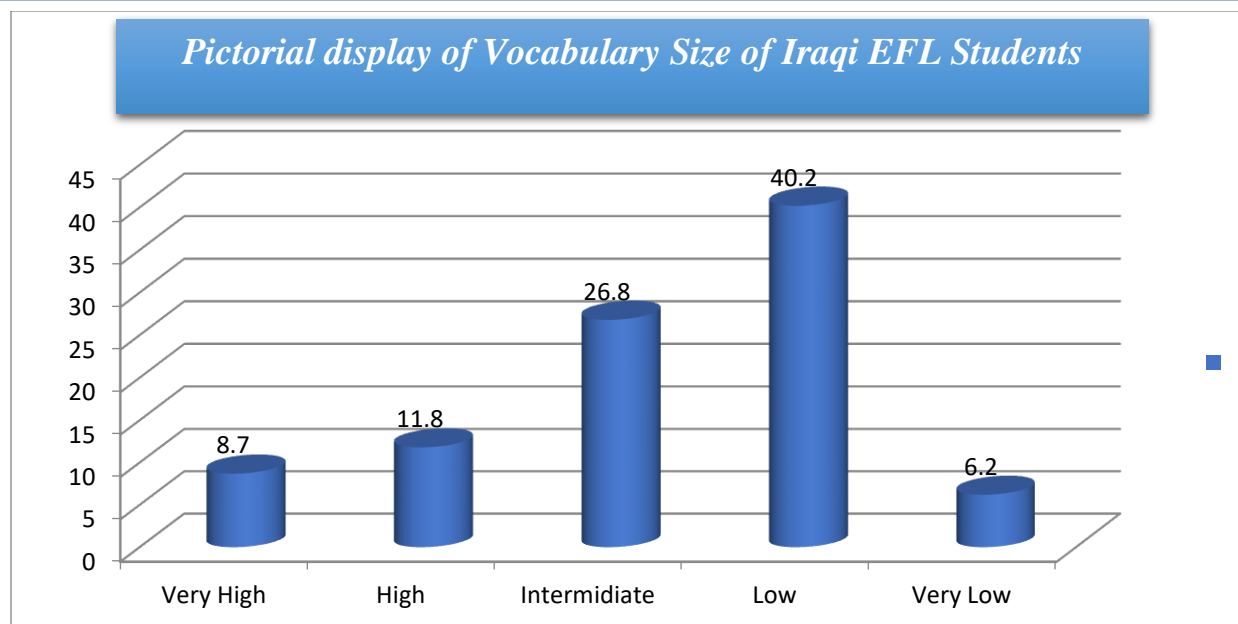


Figure 2. *The Level of Vocabulary Size of Iraqi EFL Students*

The finding concerning the Iraqi EFL student's level of vocabulary size within the ranges of 1000-4000, shows that a significant number of the participants were found to have low vocabulary size levels (40.2%). Less than the halves were found to fall within the intermediate vocabulary size level (26.8%). However, very insignificant numbers were found to fall within the high and very high vocabulary size levels (11.8%), and (8.7%) respectively. This result implies that the majority of the participants do have a limited lexical knowledge of English vocabulary. This finding may have been stained by the fact that English is not commonly used by the participants in their daily conversation

The Relationship between Vocabulary Size and Vocabulary Learning Strategies

The relationship between vocabulary size and vocabulary learning strategies is the third objective of this research. To achieve this goal, regression analysis was conducted to establish the relationship. This is meant to uncover which of the learning strategies significantly contributes to the participants' vocabulary size. In the analysis, the strategies of Determination, Social, Cognitive, Memory, and Metacognitive were used as the independent variables while the vocabulary size test scores served as the dependent variable. The result is presented below.

Table. 8. Relationship between vocabulary size and vocabulary learning strategies



Predictor	<i>B</i>	<i>SE</i>	β	Sig
(Constant)	3.578	3.031		.226
Cognitive	3.253	1.065	.331	.001
Memory	- 2.857	.833	-.383	.002
Social	2.385	.882	.300	.006
Determination	1.658	9.44	.165	.76
Metacognitive	.008	.865	.001	.995

$R^2 = .33$; $F\text{-test} = 11.317$ ($p < .002$)

Based on the outcome of the analysis it has been found that the model was highly significant ($F(5,119) = 11.317, < .002$). The usage of the learning strategies accounts for 34% of the variation in vocabulary size. The result further indicated that there is a positive relationship between cognitive strategy ($t(119) = 3.40, p < .01$) and memory strategy ($t(119) = 2.76, p < .02$) with the students' vocabulary size. However, a negative relationship was found among the strategies of social, determination and metacognitive with the students' vocabulary size as their p values are greater than the alpha at ($> .005$) as illustrated in the table. This result implies that certain strategies immensely contributed to the students' success in enhancing their lexical knowledge of English vocabulary.

Discussion of the Findings

This study was meant to assess the frequency of the students' usage of vocabulary learning strategies, the size of their English vocabulary, and the relationship between the students' vocabulary size and the usage of these learning strategies in their quest to be successful in the English language. The Vocabulary Size Test of Beglar and Nation (2013) was used to test the students' vocabulary size. The questionnaire on vocabulary learning strategies developed by Schmitt (2000) was also used in gauging the students' preferred vocabulary learning strategies.

The findings of the results indicated that the students preferred the strategy of cognitive more than the other strategies when trying to acquire English vocabulary. It indicated that word repetition loudly uttered for retention and familiarization is favored by the participants. They also rely on using a notebook for recording



newly encountered words for future reference to enhance their vocabulary learning. This finding is consistent with what was reported by Aravind and Rajesekaran (2018), their findings show that cognitive strategy is employed by the participants through note-taking and repetitions. In yet another study, Jun-Eon Park (2001) investigated the use of vocabulary learning strategies by Korean EFL students. Their findings indicated that the students use more cognitive strategies than other strategies.

The strategy of memory was the second most used by the participants. This indicated that the students do have the ability to store words using mental images and previous experiences in their long-term memory. This finding conforms with the previously published findings reported in Kron-Sperl, Schneider, and Hasselhorn (2008) where students' use of memory strategy was investigated among students in the process of language learning. Their result shows significant differences between the students that used memory as a strategy and those that do not use it. It's agreed that memory strategy is more effective on students' ability to recall. In yet another study by Resches, Junyent, Fernandez_Flecha, Blume & Kohan-Cortada, (2023), memory strategy was found to boost students' capacity to learn new vocabulary. The participants believed that memory strategy helps retain English vocabulary; it creates mental linkages which help to organize information in such a way that it is going to be easier to recall when the need arises. In their studies, Yum, Lee, Jang, Kim, Kim, and Joo (2021) revealed the suitability of creating mental linkages when learning a second language. Therefore, the strategy of memory is found to promote positive behavioral changes in the process of learning by captivating students' attention and fostering the spirit of learning (Al-Khresheh & A-I Ruwaili, 2020).

The students were also found to significantly use social strategy in their learning process. This is an indication that collaborative learning activities are favored by the students. They rely more on their teachers' feedback and guidance rather than only learning strategies. This finding is reported in a study conducted by Daaboulis et. al., (2018) in which the use of vocabulary learning strategies by Syrian EFL students was investigated, the students were found to rely on social strategy for mastery of English vocabulary. One of the reasons for students' preferences for social strategy may be related to their low level of English proficiency. Therefore resorting to active communication with teachers and colleagues may pave the way for them to seek clarifications on unfamiliar words and ask questions for highlights which will in turn enhance their lexical knowledge of the English language. A similar finding was recently reported by Jamali Kivi et al. (2021) where students who engaged teachers and colleagues were found to be significantly different from other groups in vocabulary knowledge and reading comprehension.



On average, the findings indicate a low level of vocabulary size by the participants, a significant number of them showcase proficiencies of words ranging from 2000 to 3000. Beglar and Nation (2013) opined that words ranging from 1000 to 2000 constitute high-frequency words, while words ranging from 3000 to 9000 fall within the mid-frequency words, and above 10000 words are considered low-frequency words. The study of Milton and Treffers-Daller (2013) suggested that there are certain vocabulary sizes that students need to be able to navigate in English language effectively. The findings stressed the significance of the acquisition of vocabulary, to effect this it is recommended that different teaching methods that are tailored to meet the different needs of learners should be incorporated into the learning process.

Conclusion

This research is meant to identify and analyze the most common vocabulary learning strategies used by Iraqi EFL students in learning to master the vocabulary of the English language. Their vocabulary size was also investigated. The relationship between the strategies and the students' vocabulary was also explored. Based on the outcome of the research it was discovered that the students fall within the moderate usage of vocabulary learning strategies. This finding implies that the students need to be encouraged or motivated by enacting educational policy that will help the students to be able to achieve mastery of English vocabulary. The result of students' vocabulary size further indicated that they had little knowledge of English vocabulary. However, a positive relationship was discovered between the strategies and the students' vocabulary size. This implies that students' lexical knowledge could improve by the use of different vocabulary learning strategies. Therefore, the more students use the learning strategies frequently the greater vocabulary size they will possess and vice versa. In line with the suggestions provided by Zhou and Abd Halim (2022) it is suggested that support from both teachers and classmates could be advantageous to the participants of this study. These supports will serve as an encouragement for students to be actively engaged in daily communication in English which in turn could lead to improved vocabulary knowledge. It is also suggested that the integration of digital tools and resources, such as online dictionaries, language games, and language learning apps, could opportune the participants to widen their vocabulary scope.

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