

The Relationship between Vocabulary Learning Strategies and Vocabulary Level among Malaysian English Major Undergraduates

Arni Nurul Syuhadah Omor Khan

Academy of Language Studies
Universiti Teknologi MARA Selangor, 40450 Shah Alam, Selangor, MALAYSIA

***Kamisah Ariffin**

Academy of Language Studies
Universiti Teknologi MARA Pahang, 26400 Bandar Tun Abdul Razak Jengka, Pahang,
MALAYSIA

email: syuhadahkhan@gmail.com,, kamsisah@uitm.edu.my

**Corresponding author: Kamisah Ariffin*

Received: 30 March 2023 **Accepted:** 26 June 2023 **Published:** 30 June 2023

To cite this article (APA): Omor Khan, A. N. S., & Ariffin, K. (2023). The Relationship between Vocabulary Learning Strategies and Vocabulary Level among Malaysian English Major Undergraduates. *AJELP: Asian Journal of English Language and Pedagogy*, 11(1), 82–96. <https://doi.org/10.37134/ajelp.vol11.1.6.2023>

Abstract: As the heart of our language learning, vocabulary knowledge is pivotal and even more crucial for the students who major in English. However, previous studies revealed that vocabulary size and level of English major students is subpar from what is expected. Therefore, efforts must be made to identify the best strategies that would facilitate their vocabulary learning and acquisition. This study aimed to identify the vocabulary size and level of Malaysian English major undergraduates and their use of VLS, as well as to analyse the relationship between VLS employment and vocabulary level and size. The research was done quantitatively, utilising a questionnaire as the primary source of data. With the use of Vocabulary Learning Strategies (VLS) and Laufer and Nation's Productive Vocabulary Levels Test (1999) as the instruments, the data were collected and further analysed by using descriptive statistic tests and Pearson correlation tests. The findings revealed that despite most of the students acquired 2000-word level, only a small number successfully passed UWL and 10000-word level. Metacognitive strategy was the most employed VLS, whereas cognitive strategy was the least preferred. In general, the correlation test demonstrated no significant relationship between VLS and vocabulary level, but specifically, the findings revealed a positive relationship between VLS and the strategy of linking words with mental image. Therefore, this study could suggest some insights as to what strategies should the students employ or minimise to facilitate their vocabulary learning.

Keywords: English major students, vocabulary knowledge, vocabulary size and level, vocabulary learning, vocabulary acquisition

INTRODUCTION

Vocabulary, as defined by Clouston (2021, p. 2), is “the words of a language, including single items and phrases or chunks of several words which convey a particular meaning to the way individual words do”. In simpler words, vocabulary means the words of a language known and used by a person. Vocabulary knowledge refers to knowing the definition and how to use the words correctly, and it is an integral part of language learning (Hasnine & Wu, 2021).

Educational policy in Malaysia practises a bilingual system which incorporates the use of Bahasa Melayu and English, consequently making English compulsory for all levels of education (Darmi & Albion, 2013). Therefore, Malaysian students are expected to have good command of English, especially those who major in English. Vocabulary Levels Test developed by Laufer and Nation (1999) has been used widely to measure one’s L2 lexical knowledge and according to it, tertiary level students should have acquired University Word Level (UWL) for Productive Vocabulary Size Test (Webb et al., 2017). However, several studies have revealed that only a small number of English major undergraduates acquired UWL. 2000-word level, on the other hand, is achieved by the majority of the students (Alqarni, 2018; Wero et al., 2021). This lack of vocabulary size needed would pose some difficulties on the university learners, such as in understanding and writing academic papers. Hence, the learners have to employ effective strategies to facilitate their language learning (Kok & Canbay, 2011; Tilfarlıoğlu & Bozgeyik, 2012). Schmitt (1997) has proposed the Taxonomy of Vocabulary Learning Strategies (henceforth VLS) for vocabulary learning and acquisition. There are 5 categories which are determination, social, memory, cognitive and metacognitive.

Vocabulary size of Malaysian undergraduates and their employment of VLS have been researched to date (Abdul Rahman & Nasri, 2020; Baharudin, 2019; Bava Harji et al., 2015). A study has also compared the use of VLS by high and low proficient Malaysian pre-university students (Benedict & Shabdin, 2021), yet not much has been done to investigate the relationship between VLS and vocabulary size among Malaysian English major undergraduates, presumably due to the assumption that they would possess extensive English vocabulary.

Therefore, this study aimed to identify the level and vocabulary size, and the employment of VLS by Malaysian English major undergraduates, along with the relationship between VLS and vocabulary mastery.

LITERATURE REVIEW

Vocabulary Learning Strategies (VLS)

Vocabulary knowledge refers to knowing the definition and how to use the words correctly. As the heart of comprehension of a language (Beck et al., 2002), it is an inseparable element of one’s language development (Hasnine & Wu, 2021). Limited vocabularies would limit the learners in understanding and also in producing the right words which would subsequently pose difficulties to the language learners (Afzal, 2019; Heng, 2011).

Vocabulary Learning Strategies (VLS) is integral in language learning (Ahmad Shamsan et al., 2021). The taxonomy of VLS was developed through phases, and among them is Vocabulary Learning Strategies Taxonomy proposed by Schmitt (1997) which offers the most extensive and comprehensive classification of VLS (Al-Faris & Jasim, 2021) as can be seen in Figure 1. Two major categories of VLS are discovery strategy and consolidation strategy.

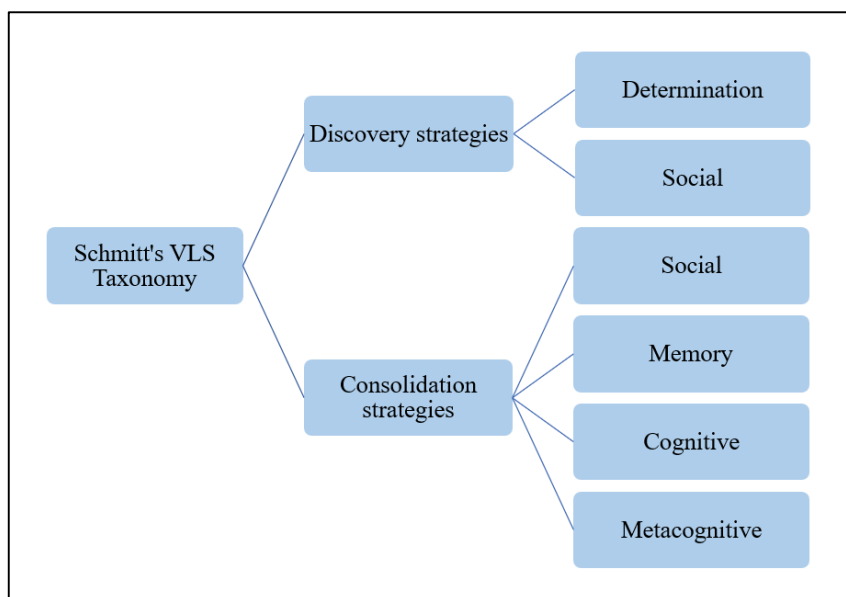


Figure 1: The classification of Vocabulary Learning Strategies Taxonomy (Schmitt, 1997, p. 205-210)

In the discovery strategy, the learners are in the process of finding out the definition of the words. The learners employ either determination strategy where they have their own alternatives to find out the definition of the unfamiliar words without referring to other people, or they employ social strategy by asking another person who would know the definition.

As for the consolidation strategy, the learners are in the process of consolidating the knowledge of the words, both definition and how to use the word correctly, after they encounter it. Social, memory, cognitive and metacognitive strategies belong to this category. Social strategy is when they refer to or discuss with other people to remember and understand unfamiliar words faster. Memory strategy is used when the learners relate the words with their existing knowledge and current context, whereas cognitive strategy refers to manipulating or transforming the language. Last but not least, metacognitive strategy is when the learners plan their vocabulary learning, monitor their progress and identify the best ways possible.

Vocabulary Level and Size of Malaysian Learners

Laufer and Nation (1999) developed Productive Vocabulary Levels Test to measure one's L2 lexical knowledge which has been used widely by previous studies and is recommended for diagnostic purposes (Bava Harji et al., 2015). According to Laufer and Nation (1999), tertiary level students should have achieved University Word Level (UWL) for Productive Vocabulary Levels Test (P-VLT) and Academic Word Level (AWL) for Receptive Vocabulary Levels Test (R-VLT) (Al-qarni, 2018; Webb et al., 2017; Wero et al., 2021).

A study by Bava Harji et al. (2015) investigated vocabulary level and size of first year undergraduates by utilising Version A of P-VLT (Nation & Laufer, 1999). The study revealed that most of the students had achieved 2000-word level, yet only a small number of them acquired UWL. According to the study, "their vocabulary knowledge is insufficient to cope with the reading text and possibly with the studies at the university" (Bava Harji et al., 2015, p. 119). Similar results were also observed by Ab Manan et al. (2016) which measured both receptive and productive vocabulary level of first year undergraduates from a public university in Malaysia. The use of VLT Version 1 by Nation (1990) and VLT by Laufer and Nation (1999) had revealed that most of the undergraduates achieved 2000-3000 words and majority of them failed to pass 5000-word level and AWL. However, Yunus et al. (2016) revealed different

findings as the majority of Malaysian English major undergraduates had gone beyond 2000-3000 word lists. Although they had successfully acquired 4000-6000 word lists, only a small number reportedly achieved AWL.

According to Wong et al. (2019), many studies have been done to investigate the vocabulary size and level of tertiary level students, hence they aimed to investigate those of secondary school students. The findings showed that most students excelled in 2000-word level test, but they did not master vocabulary proficiency beyond the level which could seriously affect the students' ability to comprehend academic texts at both secondary and tertiary levels. All in all, most Malaysian learners only reached 2000-word level, and only a small number is reported to have successfully achieved beyond the said level. That being said, this study aimed to identify vocabulary size and level of Malaysian English major undergraduates.

The Relationship between VLS and Vocabulary Level and Size

As suggested by Nirattisai and Chiramanee (2014, p. 274), "vocabulary learning strategies have been shown to help learners develop their vocabulary knowledge". Benedict and Shabdin (2021) investigated the use of VLS by Malaysian pre-university students by utilising VLS Questionnaire (Schmitt, 1997). The findings revealed that high proficient students used metacognitive strategy the most. Specifically, they relied on English language media to consolidate their vocabulary. On the other hand, low proficient students preferred social strategy, with classmates are their main reference. Another study by Asyiah (2017) discovered that students who used determination strategy tended to score higher than those who employed social strategy, and the employment of metacognitive was revealed to enhance the students' vocabulary size as compared to the use of cognitive and social strategies.

A study by Kok and Canbay (2011) attempted to identify the effects of consolidation strategy training on vocabulary size and level. The study used VLT by Nation (1990) and adapted Vocabulary Consolidation Strategy Inventory from Far (2003), Gu and Johnson (1996) and Schmitt (1997). It was revealed that those who received vocabulary consolidation strategy training achieved better vocabulary size and level, contrary to the students who did not receive the training. Engku Ibrahim et al. (2013) explored the relationship between metacognitive strategy and vocabulary size of ESL students. There was no significant relationship found although the students were moderate users of metacognitive strategy. Comparing this to previous studies by Rasekh and Ranjary (2003) and Zhao (2009) which trained their participants with metacognitive training, Engku Ibrahim et al. (2013) concluded that the absence of metacognitive training in their study could be the reason why there was no significant relationship between the use of metacognitive strategy and vocabulary size of the students. Hence, the study proposed that training on the use of VLS could facilitate the students' vocabulary learning, which would subsequently enhance their vocabulary size and level.

METHODOLOGY

This study aimed to investigate the relationship between VLS and vocabulary mastery among Malaysian English major undergraduates. The specific objectives of the research are as follows:

- 1) To identify the level and vocabulary size of English major undergraduates.
- 2) To discover the VLS employed by English major undergraduates.
- 3) To investigate the relationship between VLS and vocabulary mastery.

The data were collected from 52 major English undergraduates of a public university in Malaysia. The research was done quantitatively by using a questionnaire. Al-Bidawi's (2018) VLS Questionnaire, which was derived from Schmitt's Vocabulary Learning Strategies Taxonomy, was adapted for the study to identify the VLS employed by the students. This study also adopted Version A of Productive Vocabulary Levels Test by Laufer and Nation (1999) to find out the vocabulary size and level of the students. For each level, the threshold is 83% (Laufer & Nation, 1999). SPSS Statistics V28.0 for Windows was utilised to analyse the data. Descriptive statistic tests were performed to calculate the mean and standard deviation for vocabulary size and level, and the use of VLS. Following this, Pearson correlation tests were carried out to examine the relationship between each of the VLS and vocabulary size and level of the respondents. Cronbach's Alpha Test was carried out and the score was 0.853.

RESULTS AND DISCUSSIONS

Vocabulary Size and Level of Malaysian English Major Undergraduates

As can be seen in Table 1, the findings revealed that majority of the students had successfully achieved 2000-word level and only a small number passed UWL and 10000-word level. This also suggests that the vocabulary mastery of these English major undergraduates are somewhat on average level, and is consistent with previous studies by Bava Harji et al. (2015), Engku Ibrahim et al. (2016) and Ab Manan et al. (2016) which revealed most of the undergraduate students do not acquire UWL. Consequently, this shows that Malaysian English major undergraduates still have not possessed the required academic vocabulary.

Table 1: Descriptive statistics of the respondents' vocabulary size and level

Vocabulary size & level	N	Frequency	Percent (%)	Mean	SD
2000	52	50	96.15	92.80	7.11
3000	52	31	59.62	79.65	14.27
5000	52	22	42.31	74.76	16.64
UWL	52	17	32.69	69.50	19.03
10000	52	11	21.15	55.39	22.79

A downward trend is apparent and it can be concluded that most of the respondents faced difficulties in the later levels. This corroborates the findings of Sudarman and Chinokul (2019) and Wero et al. (2021). A possible explanation would be the students are already exposed to 2000- and 3000-word level as both are high frequency words used in general and needed to function effectively in English, yet they have not mastered 5000-word level onwards which are for reading advanced academic texts (Hirsh & Nation, 1992 as cited in Kristanto, 2015; Nation, 1990).

The Employment of VLS by Malaysian English Major Undergraduates

The scoring system developed by Oxford (1990) proposed that the scores below 2.5 are considered as 'low strategy use', whereas scores between 2.51 and 3.5 are 'medium strategy use' and finally scores from 3.51 and above are classified as 'high strategy use'. As reported in Table 2, generally, the use of VLS among English major undergraduates in Malaysia is medium, except for metacognitive strategy which can be considered as highly used. Metacognitive

strategy ($M=3.68$, $SD=.810$) was the most preferred VLS, whereas cognitive strategy ($M=2.99$, $SD=.689$) was the least employed.

Table 2: Descriptive statistics of the respondents' use of VLS

Strategy	N	Mean	SD	Degree of use
Determination	52	3.42	.586	Often
Social	52	3.31	.734	Sometimes
Memory	52	3.02	.679	Sometimes
Cognitive	52	2.99	.689	Sometimes
Metacognitive	52	3.68	.810	Often

These findings corroborate Asyiah (2017), Baharudin (2019), Mustapha and Hatta (2018), and Safian et al. (2014). According to Ghalebi et al. (2020), English major postgraduates also preferred metacognitive strategy to others. Metacognitive strategy allows the students to fully control and monitor their language learning, and to choose their preferred learning media, which simultaneously boosts their motivation to learn and ease the consolidation of the new vocabulary (Asyiah, 2017).

On the other hand, cognitive strategy was the least used by the students whereas social strategy was used moderately. Similarly, a previous study by Alqarni (2018) found cognitive and memory strategies as the least preferred by Saudi English major undergraduates. The study proposed these strategies are no longer favoured by the students because they are becoming more independent in their language learning process thus they avoid rote learning. In addition, Al-Omairi (2020) revealed Iraqi students of English as a Foreign Language (EFL) and English for Academic Purposes (EAP) used cognitive strategy in moderation while social strategy was the least preferred.

The Employment of Determination Strategy

Looking deeper into each category, the study investigated the use of strategies of each category. The employment of determination strategy by the respondents can be seen in Table 3.

Table 3: Descriptive statistics of the respondents' use of determination strategy

Strategy	N	Mean	SD	Degree of use
I use an English-Malay dictionary to find out the meaning of new vocabulary	52	2.69	1.292	Sometimes
I check if the same word is used in my first language	52	3.02	1.244	Sometimes
I use a monolingual English-English dictionary to find out the meaning of the new vocabulary	52	4.00	1.268	Often
I use the context clues to find out the new words	52	4.15	.872	Often
I illustrate pictures in the textbook to find the meaning of the words	52	2.94	1.243	Sometimes
I use grammatical structures to guess the meaning	52	3.69	1.020	Often

The respondents preferred using context clues ($M=4.15$, $SD=.872$) the most, thus corroborating Al-Omairi (2020). Both Malaysian and Iraqi English major students preferred using textual context to find out the definition of the words. On the contrary, referring to English-Malay dictionary ($M=2.69$, $SD=1.292$) was the least used which is different from what Al-Bidawi (2018) found. Saudi EFL students reportedly relied on English-Arabic dictionary to find out the meaning of the new vocabulary. This difference can be attributed to the fact that

Malaysian government has always emphasised English language proficiency and the status of English itself as the second official language in Malaysia (Yunus et al., 2016).

The Employment of Social Strategy

As shown in Table 4, the most unfavourable strategies are asking native speakers to explain the new vocabulary ($M=2.15$, $SD=1.227$) and relying on their lecturers and friends. However, they reportedly often used internet facilities and applications to discover the definition of the words ($M=3.69$, $SD=.415$). It was propounded that mobile technology could enhance one's vocabulary development (Nisbet & Austin, 2013), and since technology has integrated into our lives and has become a necessity (Merzifonluoglu & Tulgar, 2022), the inclination towards utilising technology as compared to relying on the teachers and friends is understandable.

Table 4: Descriptive statistics of the respondents' use of social strategy

Strategy	N	Mean	SD	Degree of use
I cooperate with my friends to find out the meaning of word	52	3.52	1.129	Often
I ask native speakers to explain the definition	52	2.15	1.227	Seldom
I ask my teacher to compose the new word in a sentence	52	2.46	1.475	Seldom
I ask my teacher to clarify the meaning	52	3.13	1.469	Sometimes
I listen and watch films, songs, and TV programmes to list the new words	52	3.75	1.297	Often
I use internet facilities and applications to get the meaning	52	3.69	.415	Often

The Employment of Memory Strategy

Table 5 presents the use of memory strategy in consolidating their knowledge of the newly learned vocabulary.

Table 5: Descriptive statistics of the respondents' use of memory strategy

Strategy	N	Mean	SD	Degree of use
I classify new words according to their synonyms and antonyms	52	3.21	1.486	Sometimes
I classify new vocabulary according to similar pronunciation and spelling	52	2.56	1.195	Seldom
I use rhymes to remember new words	52	2.25	1.100	Seldom
I make repetition to learn words	52	3.27	1.285	Sometimes
I draw an image in the form of word in mind	52	2.67	1.294	Sometimes
I connect the newly learned English words with life situation and experiences	52	4.13	.991	Often

Memory strategy is employed by connecting the new vocabulary with prior knowledge, either by association, imagery or grouping (Kobayashi & Little, 2018). The findings of the present study revealed that connecting the newly learned vocabulary with own life situation and experiences ($M=4.13$, $SD=.991$) is the most employed memory strategy. This confirms Falih (2020) which showed the strategy was always employed by the students. Having said that, the results of the present study also differ from Falih (2020) as the current research showed the students rarely classified new words according to similar pronunciation and spelling ($M=2.56$, $SD=1.195$). The respondents of the previous research explained the strategy makes

them feel more confident to say the word correctly and to remember easier. From this, we can infer that the students from both studies have different views in regards to memory strategy employment.

The Employment of Cognitive Strategy

From Table 6, it is apparent that guessing the meaning of words from available information in context ($M=4.23$, $SD=.854$) was the most preferred strategy among other VLS. On the other hand, the use of notebooks ($M=1.96$, $SD=1.236$) and making word lists with their definition and examples ($M=2.63$, $SD=1.329$) were the least used by the respondents. The findings corroborated Mokhtar et al. (2009) as the strategies were the least used by adult ESL learners. Although these strategies have been suggested and proven to be beneficial (Waring, 2002), the students somehow have contrasting preferences. They favoured the strategy of relying on available information in context, which is reported as the most frequent cognitive strategy employed.

Table 6: Descriptive statistics of the respondents' use of cognitive strategy

Strategy	N	Mean	SD	Degree of use
I make lists of words with meaning and examples	52	2.63	1.329	Sometimes
I keep notebook of new words	52	1.96	1.236	Seldom
I repeat the word with its meaning	52	3.00	1.299	Sometimes
I link word items with images and pictures in mind	52	3.02	1.350	Sometimes
I guess the meaning of words from available information in context	52	4.23	.854	Always
I switch the words from English to my first language	52	3.10	1.192	Sometimes

The Employment of Metacognitive Strategy

Last but not least, a further investigation on metacognitive strategy generated the findings as presented in Table 7.

Table 7: Descriptive statistics of the respondents' use of metacognitive strategy

Strategy	N	Mean	SD	Degree of use
I monitor my English vocabulary comprehension when I communicate with people	52	4.06	.938	Often
I am conscious of various vocabulary strategies	52	3.52	1.146	Often
I revise the new words when writing e-mails, articles or short story	52	3.69	1.076	Often
I self-evaluate my use of the words	52	3.90	1.015	Often
I assess my use of the words according to the context	52	4.04	.949	Often
I practise the new words when I play online games	52	2.85	1.406	Sometimes

It was revealed that the students frequently monitored their English vocabulary comprehension when communicating with people ($M=4.06$, $SD=.938$), thus confirming Sidhu and Mohamad Nor (2017). A participant of the previous research reasoned they could learn and understand better from the communication. Contrariwise, the findings of the present study showed the least favoured metacognitive strategy is practising the new words when playing online games ($M=2.85$, $SD=1.406$). This, however, diverges from Hamat and Amran (2021)

which proposed online games were frequently employed and could facilitate the students' vocabulary learning and acquisition. This disparity could be attributed to the gender of the participants. The majority of the participants of this study is female students, whereas 70% of the respondents in Hamat and Amran (2021) are male. A study by Veltri et al. (2014) showed that indeed, men play online games more than women, hence this could lead to the difference between the present study and Hamat and Amran (2021). Had more male students participated in this study, the inclination toward the employment of practising new vocabulary while playing online games would have been observed.

The Relationship between VLS and Vocabulary Mastery

Table 8 presents the results of a Pearson test which implied generally, there is no significant relationship between all VLS and vocabulary mastery of the students. Regardless of the VLS employed, it will not improve nor impede the students' vocabulary level and size. This is in line with SettarAbid (2017). A plausible explanation would be the participants of this research are of English academic background hence they are always exposed to English and frequently use the language.

Table 8: The relationship between VLS and vocabulary size and level

VLS	Pearson Correlation	Sig. (2-tailed)
Determination strategy	-.179	.204
Social strategy	-.009	.947
Memory strategy	-.144	.308
Cognitive strategy	-.172	.224
Metacognitive strategy	.082	.562

Note. **.Correlation is significant at the 0.01 level (2-tailed)

*.Correlation is significant at the 0.05 level (2-tailed)

The Relationship between Determination Strategy and Vocabulary Size and Level

The study then investigated further, analysing the correlation between each substrategy and vocabulary size and level.

Table 9: The relationship between determination strategy and vocabulary size and level

Determination strategy	Pearson Correlation	Sig. (2-tailed)
I use an English-Malay dictionary to find out the meaning of new vocabulary	-.437	.001
I check if the same word is used in my first language	-.301	.030
I use a monolingual English-English dictionary to find out the meaning of the new vocabulary	-.048	.736
I use the context clues to find out the new words	.047	.740
I illustrate pictures in the textbook to find the meaning of the words	.101	.478
I use grammatical structures to guess the meaning	.200	.155

Note. **.Correlation is significant at the 0.01 level (2-tailed)

*.Correlation is significant at the 0.05 level (2-tailed)

As can be seen in Table 9, only the strategies of using English-Malay dictionary ($r=-.437$, $p=.001$) and finding out if the same word is used in Malay ($r=-.301$, $p=.030$) reported negative relationships which could be inferred as relying more on the first language would hinder one's

vocabulary mastery. This confirms Citrayasa et al. (2022) and Chumworatayee and Pitakpong (2017), yet contradicts Asyiah (2017) which revealed the more the students employ these strategies, the better their English vocabulary size and level would be. As for other determination strategies, all reported no significant relationship.

The Relationship between Social Strategy and Vocabulary Size and Level

Table 10 presents the relationship between the subcategories of social strategy and vocabulary size and level.

Table 10: The relationship between social strategy and vocabulary size and level

Social strategy	Pearson Correlation	Sig. (2-tailed)
I cooperate with my friends to find out the meaning of word	-.013	.928
I ask native speakers to explain the definition	-.063	.658
I ask my teacher to compose the new word in a sentence	.071	.615
I ask my teacher to clarify the meaning	.112	.430
I listen and watch films, songs, and TV programmes to list the new words	.180	.202
I use internet facilities and applications to get the meaning	.033	.814

Note. **.Correlation is significant at the 0.01 level (2-tailed)

*.Correlation is significant at the 0.05 level (2-tailed)

From Table 10, it can be deduced that there is no significant relationship between all social strategies and vocabulary size and level. Hence, none of the social strategies employed would boost nor impede the students' vocabulary mastery. The findings of Hamzah et al. (2009) suggested otherwise as there is a significant relationship between using English media and vocabulary size and level. The study proposed listening to and watching English songs and films would enhance the students' vocabulary acquisition.

The Relationship between Memory Strategy and Vocabulary Size and Level

As reported in Table 11, only repetition has a significant relationship with vocabulary size and level ($r=-.303, p=.029$). It can be concluded that the students who used repetition to learn new vocabulary frequently, scored lower in VLT. This corroborates Srimanee et al. (2021) as the study discovered the high achieving students did not use this strategy often, unlike the low achieving students who employed this strategy regularly.

Table 11: The relationship between memory strategy and vocabulary size and level

Memory strategy	Pearson Correlation	Sig. (2-tailed)
I classify new words according to their synonyms and antonyms	-.148	.296
I classify new vocabulary according to similar pronunciation and spelling	-.123	.386
I use rhymes to remember new words	-.215	.125
I make repetition to learn words	-.303	.029
I draw an image in the form of word in mind	.213	.129
I connect the newly learned English words with life situation and experiences	.131	.356

Note. **.Correlation is significant at the 0.01 level (2-tailed)

*.Correlation is significant at the 0.05 level (2-tailed)

The Relationship between Cognitive Strategy and Vocabulary Size and Level

Table 12 presents the relationship between cognitive strategy and vocabulary size and level.

Table 12: The relationship between cognitive strategy and vocabulary size and level

Cognitive strategy	Pearson Correlation	Sig. (2-tailed)
I make lists of words with meaning and examples	-.246	.079
I keep notebook of new words	-.236	.093
I repeat the word with its meaning	-.165	.244
I link word items with images and pictures in mind	.289	.038
I guess the meaning of words from available information in context	.190	.177
I switch the words from English to my first language	-.362	.008

Note. **.Correlation is significant at the 0.01 level (2-tailed)

*.Correlation is significant at the 0.05 level (2-tailed)

The correlation analysis results demonstrate significant relationships between two of the cognitive strategies and vocabulary size and level. First, there is a weak positive relationship between linking words with mental image and vocabulary mastery ($r=.289$, $p=.038$) which can be interpreted as the more the students linked the words with images in mind, the higher their vocabulary size and level. This contradicts Kalajahi and Pourshahian (2012), yet provided a support for Zahedi and Abdi (2012) which compared the performance of students who were trained to link the words with their mental image to those who did not receive any training. The results showed the former group performed better than the latter as the newly learned vocabulary retained longer and was understood better by the students.

On the other hand, there is a weak negative relationship between switching the words from English to native language and one's vocabulary size ($r=-.362$, $p=.008$). Therefore, students who often switched the words from English to their first language scored lower in VLT. This could further support the notion proposed earlier. Depending too much on the first language would disrupt the students' vocabulary mastery thus limiting their vocabulary size and level.

The Relationship between Metacognitive Strategy and Vocabulary Size and Level

The findings for correlation analysis between the subcategories of metacognitive strategies and vocabulary size and level are presented in Table 13.

Table 13: The relationship between metacognitive strategy and vocabulary size and level

Metacognitive strategy	Pearson Correlation	Sig. (2-tailed)
I monitor my English vocabulary comprehension when I communicate with people	-.011	.939
I am conscious of various vocabulary strategies	.061	.669
I revise the new words when writing e-mails, articles or short story	-.050	.724
I self-evaluate my use of the words	.084	.146
I assess my use of the words according to the context	.182	.197
I practise the new words when I play online games	.053	.712

Note. **.Correlation is significant at the 0.01 level (2-tailed)

*.Correlation is significant at the 0.05 level (2-tailed)

Metacognitive strategy was the most employed VLS, yet no significant relationship between the strategy and vocabulary level was found. This supports Engku Ibrahim et al. (2013)

as the study also found no correlation although the students used metacognitive strategy moderately. The study further suggested training on the use of VLS might facilitate the students' vocabulary learning and acquisition, which in return, would enlarge their vocabulary size and level. For instance, Kok and Canbay (2011) demonstrated that VLS training would boost one's vocabulary mastery, as compared to those who did not receive training. The need to acknowledge the importance of VLS training was proposed by Zahedi and Abdi (2012) too.

CONCLUSION

The present study investigated the relationship between VLS and vocabulary size and level among Malaysian English major undergraduates. Most of previous research involved undergraduate students of other courses, thus making this study significant and could contribute to the body of knowledge of bilingualism and VLS, as the present research involved English major undergraduates. Although the findings revealed no significant relationship in general, further investigations demonstrated several relationships between substrategies and vocabulary level. The findings suggest several strategies to be employed or minimised in order to enhance their vocabulary learning and acquisition. To support this, both English educators and Malaysian Ministry of Education may improve their pedagogical instruments and the English syllabus, such as including more academic words in the syllabus of secondary schools to equip the learners before they dive into tertiary level of education.

REFERENCES

- Abdul Rahman, Z. I., & Nasri, N. F. (2020). Vocabulary Learning Strategies among undergraduate ESL learners in tertiary education. *International Journal of Modern Languages and Applied Linguistics*, 4(4). 14-32.
- Afzal, N. (2019). A study on vocabulary-learning problems encountered by BA English majors at the university level of education. *Arab World English Journal*, 10(3). 81-98.
- Ahmad Shamsan, M. A., Mohammed Ali, J. K., & Hezam, T. A. (2021). Online learning amid Covid-19 pandemic: A Case Study of Vocabulary Learning Strategies. *Arab World English Journal*. 281-294.
- Al-Bidawi, S. A. (2018). Vocabulary Learning Strategies (VLSs) preferred by Saudi EFL students. *English Language Teaching*, 11(12). 211-220.
- Al-Faris, S. S., & Jasim, B. Y. (2021). Memory strategies and Vocabulary Learning Strategies: Implications on teaching and learning vocabulary. *Journal of Humanities and Social Sciences Studies*. 11-21.
- Al-Omairi, M. (2020). The use of Vocabulary Learning Strategies by EFL and EAP undergraduate university learners in the Iraqi context. *Arab World English Journal*. 111-120.
- Alqarni, I. R. (2019). Receptive vocabulary size of male and female Saudi English major undergraduates. *International Journal of English Linguistics*, 9(1). 111-119.
- Asyiah, D. N. (2017). The vocabulary teaching and vocabulary learning: Perception, strategies, and influences on students' vocabulary mastery. *Jurnal Bahasa Lingua Scientia*, 9(2). 293-318.
- Baharudin, S. N. (2019). The use of Vocabulary Learning Strategies among ESL undergraduates. *International Journal of Humanities, Philosophy and Language*, 2(7). 66-79.

- Bava Harji, M., Balakrishnan, K., Bhar, S. K., & Letchumanan, K. (2015). Vocabulary levels and size of Malaysian undergraduates. *English Language Teaching*, 8(9). 119-130.
- Beck, I., Mc Keown, M., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York: The Guilford Press.
- Benedict, M. C. & Shabdin, A. A. (2021). A Comparison of the Vocabulary Learning Strategies employed by high and low proficient pre-university students in Malaysia. *LEARN Journal: Language Education and Acquisition Research Network*, 14(2). 222-246.
- Chumworatayee, T., & Pitakpong, T. (2017). The relationships between the use of Vocabulary Learning Strategies and their usefulness as perceived by English major students in a Thai university. *LEARN Journal: Language Education and Acquisition Research Network Journal*, 10(2). 155-167.
- Citrayasa, V., Marsella, E., & Nernere, M. S. (2022). Strategies of Vocabulary Learning Strategies employed by low-frequency-word level students in international class. *Journal on English as a Foreign Language*, 22(1). 97-116.
- Clouston, M. L. (2021). *Teaching vocabulary, revised*. English Language Teacher Development. TESOL Press.
- Darmi, R. & Albion, P. (2013, July 3-July 4). *English language in Malaysian education system: its existence and implication*. [Paper presentation]. 3rd Malaysian Postgraduate Conference (MPC2013), Sydney, New South Wales, Australia.
- Engku Ibrahim, E. H., Sarudin, I., & Muhamad, A. J. (2016). The relationship between vocabulary size and reading comprehension of ESL learners. *English Language Teaching*, 9(2). 116-123.
- Falih, A. (2021). A case study of Vocabulary Learning Strategies used by male and female students in Mtsn 1 Pati. [Master thesis, Universitas Muhammadiyah Surakarta]. Institutional repository, Universitas Muhammadiyah Surakarta.
- Ghalebi, R., Sadighi, F., & Bagheri, M. S. (2020). Vocabulary learning strategies: A comparative study of EFL learners. *Cogent Psychology*, 7(1). 1-12.
- Hamat, A., & Amran, M. F. I. M. (2021). The use of Vocabulary Learning Strategies in an MMORPG among Southeast Asian ESL players. *Language, Linguistics, Literature The Southeast Asian Journal of English Language Studies*, 27(4). 72-84
- Hamzah, M. S. G., Kafipour, R., & Abdullah, S. K. (2009). Vocabulary Learning Strategies of Iranian undergraduate students and its relation to their vocabulary size. *European Journal of Social Sciences*, 11(1). 39-50.
- Hasnine, M. N., & Wu, J. (2021). Wordhyve: A context-aware language learning app for vocabulary enhancement through images and learning contexts. *25th International Conference on Knowledge-Based and Intelligent Information and Engineering Systems*.
Elvesier B. V.
<https://www.sciencedirect.com/science/article/pii/S187705092101855X>
- Heng, K. (2011). *Effective Vocabulary Learning Strategies: Perspectives from Cambodian students and teachers*. [Master thesis, Royal University of Phnom Penh].
- Kalajahi, S. A. R., & Pourshahian, B. (2012). Vocabulary Learning Strategies and vocabulary size of ELT students at EMU in Northern Cyprus. *English Language Teaching*, 5(4). 138-149.
- Kobayashi, K., & Little, A. (2018). Explicit instruction of Memory Vocabulary Learning Strategies in an ESP context. *Journal of Second Language Teaching and Research*, 6.20-49.
- Kok, I. & Canbay, O. (2011). An experimental study on the vocabulary level and vocabulary consolidation strategies. *Procedia – Social and Behavioral Sciences*, 15. 891-894.
- Laufer, B., & Nation, P. (1999). A vocabulary size test of controlled productive ability. *Language Testing*, 16(1). 33-51.

- Merzifonluoglu, A., & Tulgar, A. T. (2022). Are digital technologies effective for the improvement of L2 vocabulary at tertiary level? *The Reading Matrix: An International Online Journal*, 22(1). 56-72.
- Mustapha, A. A., & Hatta, S. A. M. (2018). The use of Vocabulary Learning Strategies by pre-diploma students in UiTM. *Malaysian Journal of Social Sciences and Humanities*, 3(2). 65-76.
- Nirattisai, S., & Chiramanee, T. (2014). Vocabulary Learning Strategies of Thai university students and its relationship to vocabulary size. *International Journal of English Language Education*, 2(1). 273-287.
- Nisbet, D., & Austin, D. (2013). Enhancing ESL vocabulary development through the use of mobile technology. *Journal of Adult Education*, 42(1). 1-7.
- Oxford, R. (1990). *Language Learning Strategies: What every teacher should know*. New York: Newbury House.
- Safian, N. H., Malakar, S., & Kalajahi, S. A. R. (2014). Exploring Vocabulary Learning Strategies used by UPM TESL undergraduates. *Advances in Language and Literary Studies*, 5(5). 1-4.
- Schmitt, N. (1997). Vocabulary Learning Strategies. In Schmitt, N., & McCarthy, M. (Eds.), *Vocabulary: description, acquisition and pedagogy*. Cambridge: Cambridge University Press.
- SettarAbid, R. A. (2017). A study of Vocabulary Learning Strategies and vocabulary size of Iraqi EFL learners. *Iraqi Academic Scientific Journals*. 356-371.
- Sidhu, G. K., & Mohamad Nor, N. K. (2017, December 06-07). *Tertiary students' usage of Vocabulary Learning Strategies: A case study*. [Paper presentation]. 4th International Conference on Science & Social Research. The Pines, Malacca, Malaysia. 06-07 December 2017.
- Srimanee, J., Ruangnoi, K., & Zainol Abidin, M. J. (2020). A study of Vocabulary Learning Strategies in EFL reading of high, middle and low vocabulary achievers of Thai tertiary students. *International Journal of Linguistics, Literature and Translation*, 4(2). 27-34.
- Sudarman, & Chinokul, S. (2018). The English vocabulary size and level of English department students at Kutai Kartanegara University. *English, Teaching, Learning and Research Journal*.
- Tilfarlioglu, F. F. Y., & Bozgeyik, Y. (2012). The relationship between Vocabulary Learning Strategies and vocabulary proficiency of English language learners. *International Journal of Applied Linguistics and English Literature*, 1(2). 91-101.
- Veltri, N. F., Krasnova, H., Baumann, A., & Kalayamthanam, N. (2014, August). *Gender differences in online gaming: A literature review*. [Paper presentation]. Twentieth Americas Conference on Information Systems. Savannah.
- Waring, R. (2002). Basic principles and practice in vocabulary instruction. *The Language Teacher*, 26(7).
- Webb, S., Sasao, Y., & Balance, O. (2017). *The updated Vocabulary Levels Test*. John Benjamins Publishing Company.
- Wero, Y. T., Machmud, K., & Husain, N. (2021). The study on students' vocabulary size. *Jambura Journal of English Teaching and Literature*, 2(1). 22-34.
- Wong, E. M. Y. (2015). A case study of the Vocabulary Learning Strategy use of twenty Chinese ESL learners in Australia. [Thesis, Griffith University]. Repository, Griffith University. https://research-repository.griffith.edu.au/bitstream/handle/10072/367486/Wong_2015_02Thesis.pdf?sequence=1

- Yunus, K., Mohamed, M., & Waelateh, B. (2016). The breadth of receptive vocabulary knowledge among English major university students. *Journal of Nusantara Studies*. 7-17.
- Zahedi, Y., & Abdi, Mortaza. (2012). The impact of imagery strategy on EFL learners' vocabulary learning. *Procedia-Social and Behavioral Sciences*, 69. 2264-2272.