

Vocabulary learning strategies of university students: the case of preparatory year students and English major students¹

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ABSTRACT: Vocabulary-learning strategies play an important role in English language learning and acquisition. This study investigated the vocabulary learning strategies (VLSs) used by Saudi university students when learning new words. The objective is to analyse the differences in using VLSs across university levels. A VLSs questionnaire and a semi-structured interview were administered to 84 university students comprising 52 first-year English Major (EFL) male, and 32 Preparatory Year Deanship (PYD) male students. The results show that there is a difference in the frequency of use of VLSs among university students. PYD students show a higher interest in using Determination strategies for learning new English language words. In contrast, EFL students prefer using Metacognitive strategies. The results also indicate that enrichment of the mental lexicon and autonomy in language learning are the main reasons for using some VLSs. The main reason for not using some VLSs is the students' unfamiliarity with those VLSs.

Keywords: vocabulary learning strategies, learners' strategies, university learners

Estrategias de aprendizaje de vocabulario de los estudiantes universitarios: El caso de los estudiantes del año preparatorio y de la carrera de inglés

RESUMEN: Las estrategias de aprendizaje de vocabulario juegan un papel importante en el aprendizaje y adquisición del idioma inglés. Este estudio investigó las estrategias de aprendizaje de vocabulario (VLSs) utilizadas por estudiantes universitarios saudíes al aprender nuevas palabras. El objetivo es analizar las diferencias en el uso de VLSs entre los diferentes niveles universitarios. Se administró un cuestionario de VLSs y se realizó una entrevista semiestructurada a 84 estudiantes universitarios, compuestos por 52 estudiantes masculinos de primer año de inglés (EFL) y 32 estudiantes masculinos del decanato del año preparatorio (Preparatory Year Deanship en inglés). Los resultados mostraron que existe una diferencia en la frecuencia de uso de las VLSs entre los estudiantes universitarios. Los estudiantes del año preparatorio muestran un mayor interés en el uso de estrategias de determinación para aprender nuevas palabras en inglés. En contraste, los estudiantes de inglés prefieren utilizar estrategias metacognitivas. Los resultados también indican que el enriquecimiento del léxico mental y la autonomía en el aprendizaje del idioma son las principales razones para utilizar

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algunas VLSs. La principal razón por la cual no se utilizan algunas VLSs es la falta de familiaridad de los estudiantes con estas estrategias.

Palabras clave: estrategias de aprendizaje de vocabulario, estrategias de los estudiantes, estudiantes universitarios.

1. INTRODUCTION

In the last few decades, research of language learning and teaching has concentrated on understanding how students acquire their second or foreign language. The SLA framework has focused on the learners' independence in acquiring the additional languages (Thamina 2023). Language is the medium to exchange information about the world (Hagoort et al., 2004), and vocabulary knowledge has been an essential factor in managing communication. Vocabulary acquisition does not only require the linking of meaning to a form. Instead, it depends on more complex cognitive processes (Augustyn, 2013), and requires various strategies. These strategies are commonly called Vocabulary Learning Strategies (VLSs).

The investigation of Vocabulary Learning Strategies (VLSs) in the Saudi context has drawn the attention of many researchers and teachers; however, studies of vocabulary learning at the university level have been rare (e.g., Al Fraidan, 2010; Al-Nujaidi, 2000; Alyami, 2011). The previous work in Saudi Arabia centred on investigating EFL students who study English as a foreign language and who invariably become English language teachers upon graduation (Alyami, 2011). The current work focuses not only on the EFL students but also on those who study English for specific purposes (i.e., Preparatory Year Students) and analyses the vocabulary learning strategies used by both groups. According to the course plan for the first year, those learning the English language as EFL and PYD students, are expected to acquire as much vocabulary as possible because their curricula are driven by the processes of English language reception and production. PYD prepares freshmen in a one year intensive English course in order to be accepted to join colleges like Medicine, Pharmacology, Law, and Business. When student fail the PYD intensive course, they are given different options, one of them is to transfer to the English Language Department. It has been an ongoing debate at King Faisal University about the PYD English intensive course. PYD claims that they are graduating students with high command of English, while the recipient colleges complain from the low level of these students in English. The authors wanted to look at a very specific area, that is learning vocabulary among two types of students studying English for two different reasons. The EFL is studying English as a major and for an academic purpose. While the PYD is studying ESP courses in order to reach an acceptable level of English to be accepted in different colleges at KFUPM.

Learning a basic level of English language vocabulary would be a key objective for students in the early stages of their university education (Al Harthi, 2007, Al-Khasawneh, 2012). Consequently, the students strive to comprehend the most effective strategies to improve their vocabulary. This requires significant research of VLSs amongst English language students and teachers. Teachers need to study the students' behaviours when learning new words to save time and effort in introducing the language. Equally, students need to be aware of the available strategies so as to choose the most effective strategies consistent with their capabilities.

It seems a sensible goal for language teachers to help students to reach a level of autonomy and make them less dependent on teachers (O'Malley and Chamot, 1995). Learners'

autonomy can be enhanced by introducing the learner to different vocabulary learning strategies which can be used in developing the learning process. In addition, vocabulary learning strategies help students to be more active and take more responsibility on their own learning (Marttinen, 2008).

It is hypothesised that Saudi university students have a similar language proficiency level and background (Al Fraidan, 2010) even if they enrol in different fields of study. Students joining universities in Saudi have gone the same study materials in schools. So it is assumed that they have similar backgrounds and vocabulary size. Despite the students' linguistic and psychological differentiation, it is also assumed that Saudi university students' preferences with regard to the strategies used in vocabulary learning would reflect their sharing of similar schooling experience. This study focuses on the EFL and PYD students' language learning and vocabulary learning strategies seeking answers to three main research questions: 1) What is the estimated size (word count) of vocabulary knowledge of PYD and first-year EFL students? 2) What are the most, and least, frequently used VLSs that PYD and first-year EFL students employ? And why? 3) Is there any significant correlation between the students' Vocabulary Knowledge Size (VKS) and VLSs?

2. LITERATURE REVIEW

The word "strategy", according to Oxford (1989) and Oxford and Cohen (1992), derives from the ancient Greek word *strategia*, which means steps or actions taken to win a war. In language learning, learning strategies (LSs) and communication strategies refer to the conscious or unconscious processes used by students in learning and using a language.

Alyami (2011) finds the Catalan (2003) definition of VLS to be inadequate. Catalan (2003) defines VLS as a mechanism (processes, strategies) used to learn vocabulary as well as steps or actions taken by students (a) to discover the meaning of unknown words, (b) to retain them in long-term memory, (c) to recall them at will, and (d) to use them in oral or written mode (p. 56). Alyami (2011) argues that this definition focuses more on the meaning and neglects other important aspects of the new word, such as examples using the new word. He links strategy to language learning, relating it to vocabulary. Therefore, he redefined VLSs as:

the strategies used for learning vocabulary, starting with the steps or actions taken by the learners to find the meaning of unfamiliar words, retain them in the long-term memory, recall them when needed, and use them in oral and written mode. (p. 26)

Research on VLSs resulted in different classification of these strategies. The Schmitt (1997) VLSs taxonomy is one of the taxonomies which has been implemented in many studies (e.g., Al-Nujaidi, 2000; Gidey, 2008; Liao, 2004; Alyami, 2011; Askar, 2014; Gang, 2014; Ghouati, 2014; Ben Kridis, 2023). According to Schmitt (1997, p. 207), VLSs are divided into two types: Discovery and Consolidation strategies. Discovery strategies encourage students to discover the meaning of unknown words (by guessing, consulting someone, and using structural knowledge). This category is divided further into Determination strategies and Social strategies. Determination strategies enhance the learning of a new word by guessing from linguistic knowledge, guessing from an L1 cognate, guessing from context, and using

reference materials. The social strategies facilitate learning through involvement in social interactions such as asking a classmate or the teacher for an L1 equivalent. Consolidation strategies reflect the student's efforts to retain the new word once it has been encountered. It is divided into four sub-strategies, viz., social strategies, memory strategies, cognitive strategies, and metacognitive strategies. Social strategies imply interaction through group work used to learn or practise vocabulary. Catalan (2003), Alyami (2011) and Ben Kridis (2023) have illustrated that social strategies in the consolidation category differ from the social strategies in the discovery category. The consolidation social strategies deal with the practices and interactions using previously discovered vocabulary with others such as classmates or native speakers of the target language. The discovery social strategies are concerned with asking for assistance from a classmate, for instance, for the meaning or L1 translation. According to Al Fraidan (2010), Alyami (2011) and Asgari & Mustapha (2011), the discovery social strategies are a prerequisite for the consolidation social strategies in terms of achieving greater communicative competence.

Vocabulary learning strategies have attracted the attention of some researchers in Saudi Arabia. Al-Nujaidi (2000) surveyed the use of VLSs by Saudi EFL first-year students using the variables of gender and educational institutions. The results showed that male and female students use various VLSs when learning the meanings of new words. While the males used more definition and word list strategies, the females used more complex contextualization strategies. Among other types of VLSs, note-taking strategies were most frequently used. Alyami (2011), in another study, found that the choice and the frequency of use of VLSs are affected by some factors such as gender, level of education, and language proficiency. Female students preferred "guessing the meaning" and "associating the new word with their experience" more frequently than males, whereas male students used the "monolingual dictionary" more frequently than females. Regarding the year of study, Alyami (2011) found that fourth-year students were interested in using "skipping the new word" and "looking up the word's grammatical category" more frequently than the first-year students. In another related study, Al-Fuhaid (2004) examined the VLSs used by Saudi EFL students majoring in English. The results showed that the students use the discovery strategies (e.g., dictionary use) and consolidation strategies more frequently than the metacognitive strategies. The results also revealed that successful students use the dictionary more flexibly and select the appropriate meaning more often than less successful students. Al-Qahtani (2005) used three instruments – a questionnaire, a semi-structured interview, and a diary to explore the Saudi school and university student use of VLSs. The results showed that male and female students use different VLSs regarding rate and number. Females used note-taking strategies more frequently than males, but males used the "writing new words in English class notebook" more than females. In addition, Al-Qahtani (2005) found that female students, more often than male students, depend on "writing example sentences using the new word", "writing down the pronunciation of the new words", "grammatical organisation of the new words", and "repeating a sentence in which the word is used". In short, the results showed that discovery and consolidation categories were more frequently used than other types of VLSs. Ben Kridis (2023) found that Tunisian university students found vocabulary memory strategies to be an effective vocabulary learning strategies and the students had positive attitudes towards them.

By a deep search into VLS research, in the Saudi context in particular, no study before compared two different types of students studying English for two different purposes. One to pursue English as a major and the other as a tool to join their prospective colleges. Furthermore, none were conducted at KFU to present initial results to resolve the debate regarding the English language instruction at PYD.

3. METHODS

The study used a mixed method combining data from the questionnaire and the semi-structured interviews. Due to limitation of space, the data from the interviews were mentioned generally.

3.1. Participants

Eighty-four students at King Faisal University-KSA randomly selected from KFU, the workplace of the authors. They were studying in two separate departments; they were intentionally divided into two groups. The first group consisted of 52 male first-year university students (EFL) learning English as a foreign language. The second group comprised 32 male Preparatory Year students (PYD) learning English as a compulsory course for future courses in different fields of study such as Engineering and Medicine. The average age of EFL students was 20.96 years ranging from 18 to 23, while the age of the PDY students ranged from 18 to 21, with an average age of 18.73 years. This study compares the two groups' use of vocabulary learning strategies because they share a similar language proficiency level and background i.e., first-year English language students (see Al Fraidan, 2010).

3.2. Instrument

This study implemented three instruments for data collection, each one being used to obtain the answer(s) to the research questions. The first tool was Nation's (2001) VKS test (full version). It was used to account for the overall estimated size of the participants' word knowledge. The Schmitt (1997) taxonomy, among other taxonomies, has been implemented in a large number of studies (e.g., Al-Nujaidi, 2000; Alyami, 2011; Askar, 2014; Ghouati, 2014; Liao, 2004). Thus, it was used to develop a VLSs questionnaire (the second tool for data collection). A five-point Likert scale VLS-Questionnaire (VLS-Q), with options ranging from Always = 5; Often = 4; Sometimes = 3; Seldom = 2; and Never = 1, was used to survey the students' frequency of use of VLSs (see appendix). The last one was semi-structured interviews to obtain some reasons about the usage of some VLS. These instruments were implemented to find answers to the following research questions:

- 1: What is the estimated size of vocabulary knowledge of PYD and first-year EFL students?
- 2: What are the most and least frequently used VLSs that are used by PYD and first-year EFL students?
- 3: Is there any significant relationship between the students' VKS and VLSs?

3.3. Data Collection

The data was gathered over four consecutive weeks. In the first week, the topic and the objectives of this work were explained to the participants, at which time they signed the consent to participate. In the second week the participants (both EFL and PYD students) were administered Nation's (2001) VKS test on two different days, and the test was scored by the end of the week. In the third week, the VLS-Questionnaire was administered. The participants were interviewed in the fourth week. The semi-structured interview questions were based on the participants' prior responses to the questionnaire.

3.4. Data Analysis

Nation's (2001) VKS test consisted of two parts: 1) the Vocabulary Levels Test² (VLT) comprising 30 items, which required the matching of words with their synonyms or short definitions, with the maximum score being 30 points. The University Word Level (UWL) contained 36 items, and the full answer to it attracted 36 points. Numerically the maximum mark for the VLT was 156 and 2) the Controlled Productive Ability (CPA) test with the maximum score 90 being and it was distributed at a 2000-word level = 18; 3000-word level = 18; 5000-word level = 18; UWL = 18; and 10000-word level = 18. Each correct answer was awarded one point. The VLS-Q consisted of three parts. The first part was designed to collect personal information (including the age, major, and year of study). The second part consisted of the 55 items to be answered. A five-point Likert scale (with options ranging from Always = 5; Often = 4; Sometimes = 3; Seldom = 2; and Never = 1) was used to obtain the respondent's answers to the VLS-Q items. The data was analysed using SPSS (Version 23). The last part was a blank page, and it was given to the participants to state any other learning strategies they used but not mentioned within the questionnaire. The interview sessions were held in Arabic as required by the participants and recorded using a modern smartphone device. The tracks of the interview sessions were scripted into Arabic and then translated into English. The authors selected 25 participants randomly and met with them individually asking them about their VLSs and in specific why they used them.

4. RESULTS AND DISCUSSIONS

This section aims to answer the three research questions of the study respectively. Starting from estimating the vocabulary sizes for both groups and then reporting the most frequently used VLSs and ending with showing the kind of relationships between the students' vocabulary size and VLS use.

² VLT employs a matching format in which the words are presented in clusters of six words and three definitions. With ten clusters containing 30 definitions at each level, the test assesses 156 target words at four word-frequency levels (2000, 3000, 5000, 10,000) and an academic vocabulary level. The test became one of the most popular tool for estimating vocabulary knowledge (Ha 2022). Based on the test taker's score, we can anticipate how many words s/he masters in the English language.

4.1. The VKS Test Scores

In answering research question 1, the descriptive analysis of Nation’s VKS test scores of the EFL and PYD students indicated that there was a gap between the students’ productive and receptive knowledge of the same words. According to the minimum, maximum, mean, and standard deviation of each frequency level of the two vocabulary tests (VLT and CPA), the students scored higher on the VLT than CPA as shown in Tables 1 and 2 below.

Table 1. *First-year students (EFL) scores on the vocabulary test*

Descriptive analysis	Vocabulary Levels Test (VLT)					Total	Vocabulary Size Test of Controlled Productive Ability (CPA)					Total
	2000	3000	5000	UWL	10000		2000	3000	5000	UWL	10000	
MAX	29	26	24	30	9	118	15	10	7	7	3	42
MINI	3	5	0	1	0	9	0	0	0	0	0	0
MEAN	18.00	13.00	5.67	12.67	1.04	50.38	4.62	1.63	1.10	1.02	0.25	8.62
SD	6.74	5.86	5.94	7.35	2.09	27.98	4.46	2.60	1.86	1.89	0.76	11.57

Table 2. *Preparatory year deanship students’ (PYD) scores in Nation’s VKS test*

Descriptive analysis	Vocabulary Levels Test (VLT)					Total	Vocabulary Size Test of Controlled Productive Ability (CPA)					Total
	2000	3000	5000	UWL	10000		2000	3000	5000	UWL	10000	
MAX	30	24	11	20	7	92	12	6	3	6	0	27
MINI	10	4	0	2	0	20	0	0	0	0	0	0
MEAN	18.69	12.41	4.06	11.53	0.84	47.53	4.97	1.50	0.56	1.06	0.00	8.09
SD	4.11	4.60	2.33	4.61	1.63	17.28	2.97	1.63	0.72	1.72	0.00	7.04

The two tables above reveal three noticeable facts about the EFL and PYD students: the difference in the results across the word levels, the difference among the students in accordance with their vocabulary knowledge, and the different abilities in using the learned word in the productive and receptive context. For the EFL students, the ANOVA analysis of the VLT showed significant differences in scores within all word levels ($F = 67.230, p = .000$) except between the 3000-word level and the UWL ($p = .790$); it also showed significant differences in scores within all word levels ($F = 21.684, p = .000$) except between the 5000-word level and the UWL (where $p = 0.881$) to the CAP test. The ANOVA analysis showed significant differences in the PYD students’ scores within all word levels ($F = 19.730, p = .000$) in accordance with the VLT test except between the academic-word level and the 3000-word level where there was no significant difference in scores ($p = .342$). The analysis also showed, in the case of the CPA test, a significant difference between the 2000-word level and other word levels ($p < .05$), and no significant difference between the 3000-word level and the UWL ($p = .313$) and the 5000-word level and the UWL ($p = .249$) and the 5000-word level and the 10000-word level ($p = .195$).

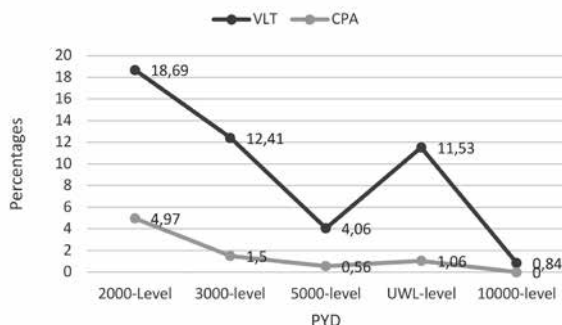


Figure 1. Mean scores of PYD on Vocabulary Level Test

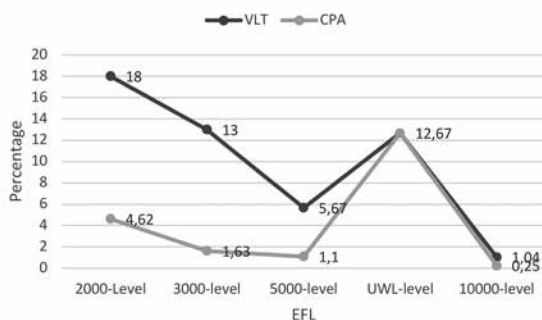


Figure 2. Mean scores of EFL on Vocabulary Level Test

Figures 1 and 2 show the decrease in students’ scores as one approaches the highest level of word knowledge acquisition. The results reveal the difference in language proficiency among the students when their receptive and productive proficiencies are compared. By comparison with EFL students, the PYD students face difficulties with some words in productive situations. This reflects the student’s inability to speak or write in their first stages of learning the new language and their struggles with speaking and writing tasks (see Al-Harthi, 2007). It is tentatively hypothesised that this arises because the students were focusing on listening and reading during the first stages of their language learning, following the way they naturally learned their first language in childhood.

From the theoretical point of view, both EFL and PYD students were expected to use receptive vocabulary better than productive vocabulary because they first learn the language as inputs, and because they are students of a foreign language therefore not using the (English) language in their daily life. According to the Krashen’s theory (1985), the students seemed to perceive and comprehend the language through its linguistic inputs before they tried to produce and express thoughts.

Table 3. *VKS tests' scores level of difference*

TEST	VLT	CPA
Mann-Whitney	783.000	708.500
Wilcoxon W	2161.000	2086.500
Z	-.452	-1.142
Asymp. Sig. (2-tailed)	.652	.253

As shown in Table 3, a Mann-Whitney U test indicates that the vocabulary size difference between EFL and PYD participants was not significant ($z = -.452, p = .652$) on the VLT, and there is no significant difference in the CPA test scores between the EFL and the PYD participants ($z = -1.142, p = .253$) as well. These results reveal that both groups (EFL and PYD) share similar word knowledge sizes, though with a slight statistical difference. As was proposed earlier, the reason for this similarity may be traced back to the two groups' learning backgrounds. It is postulated that the students would have similar linguistic knowledge since they come from the same institutional education background (having in mind that the EFL students and the PYD students had graduated from public schools where English starts at the fourth grade).

To get an accurate estimate of both groups' vocabulary sizes, Scholfield's (2005) formula, as cited in Al Fraidan (2010), was implemented to estimate the vocabulary size from Nation's test scores and the VKS test scores and to determine the actual vocabulary size of the subjects in this study. This formula, according to Al Fraidan (2010), is "reliable and valid and is a method that ensures an accurate measure of all the students' lexical proficiency level" (p. 190). The formula is:

$$\frac{\text{The mean score at a word level X Total of the words sampled at the level}}{\text{Total items tested at level}} = \text{vocabulary size}$$

Table 4 shows the results of the EFL and PYD students' scores when the foregoing formula was applied to the data. It revealed the estimated VKS when testing the students' receptive and productive abilities.

Table 4. *The estimated VKS of the EFL and PYD students*

GROUP	VLT	CPA
EFL	2,450.42	830.60
PYD	2,315.10	747.26

The results show that the estimated level of vocabulary size of the EFL students is 2,450 in the VLT, slightly higher than the PYD students' which is 2,315. The CPA test showed that the word size estimations were 830.60 and 747.26, respectively for the EFL and PYD students respectively. This initially suggests that EFL students had accumulated greater vocabulary knowledge than PYD students. However, the difference between the two groups

was not statistically significant ($z = -.452, p = .652$). Such a result is intuitively expected given the students in both groups share the same interest. That is, EFL students learn the English language because it is their major and they have to learn more words that facilitate the process of learning in their academic journey. So, all types of words are supposed to be unveiled to them including the technical ones. PYD students, on the other hand, are expected to focus more on the technical words since learning English in the preparatory year is a means to enrol in other areas of specialisation such as computer programming and engineering. Another reason for the EFL students being more interested in learning English words than the PYD students is the nature of their ultimate goals. EFL students are expected to become English language teachers, and thus need to conquer greater linguistic knowledge to be competent and effective in their ultimate employment. In contrast, the PYD students are expected to use the English language for a short-term goal, i.e., passing the exam and getting the qualification as the majority of them will not be using the English language much when they graduate.

The overall results indicate that the size of the word knowledge of the Saudi university English language students in the early stages of their learning (EFL and PYD) lies in a range from 2,000 to 3,000 words in which receptive tasks are involved. However, the size of the word knowledge accumulated, from the standpoint of production, does not reach 1,000 words. First-year English major students (with a calculated word knowledge size of 2,450) seemed to be better than preparatory-year students whose calculated word knowledge size was 2,315. However, the difference between the two groups was not statistically significant ($z = -.452, p = .652$). The calculated size of the EFL students' word knowledge in the productive test (CPA) was 830.60, while in the case of the PYD students this was 747.26. The difference between the EFL and PYD scores on the CPA was not statistically significant ($z = -1.142, p = .253$); but there was a positive correlation between the VLT and CPA among the two groups. Though the numbers are small, it was expected due to their exposure to the English language since middle school.

4.2. Vocabulary Learning Strategies Questionnaire (VLS-Q)

In answering research question 2, the Schmitt (1997) taxonomy for VLSs was administered to the participants (EFL = 52 and PYD = 32). This model has been classified into five categories: Determination Strategies (9 items); Social Strategies (8 items both discovery and consolidation); Memory Strategies (23 items); Cognitive Strategies (10 items); and Metacognitive Strategies (5 items). A five-point Likert scale with options ranging from Always = 5; Often = 4; Sometimes = 3; Seldom = 2; and Never = 1 was used to obtain the respondents' answers to the VLS-Q items (see appendix). Tables 5 and 6 show the means of their scores.

Table 5. *The distribution of the EFL participants scores on the VLS-Q*

VLS CATEGORY	DETERMINATION	SOCIAL	MEMORY	COGNITIVE	METACOGNITIVE
Items No.	9	8	23	10	5
Mean Scores (N = 52)	30.90	24.73	76.04	29.12	17.31
Percentage	68.68	61.83	66.12	58.23	69.23

Table 6. *The distribution of the PYD participants scores on the VLS-Q*

VLS CATEGORY	DETERMINATION	SOCIAL	MEMORY	COGNITIVE	METACOGNITIVE
Items No.	9	8	23	10	5
Mean Scores (N = 32)	30.28	26.16	69.56	26.63	16.31
Percentage	67.29	65.39	60.49	53.25	65.25

For the EFL students, the ANOVA analysis showed a statistically significant difference ($F = 5.755$, $p = .001$) within the five categories of the VLSs; therefore, a t-test was applied to determine the extent to which they differed from each other. The frequent use of the determination strategy was found to be significantly different ($t = 2.996$, $p = .003$) from the social category, and there is a significant difference ($t = 3.679$, $p = .003$) between the determination strategy and the cognitive category. On the other hand, there is no statistically significant difference between the determination category and the memory category ($t = 1.174$, $p = .243$), and the metacognitive category ($t = .231$, $p = .818$). In comparing the social category with the three other categories, the t-test showed that there is no statistically significant difference between the social category and the memory category ($t = 1.633$, $p = .104$) and the cognitive category ($t = 1.126$, $p = .263$), but there was a statistically significant difference between the social and the metacognitive categories ($t = 2.627$, $p = .010$). The analysis also showed that there is a statistically significant difference between the memory category and the cognitive category ($t = 2.532$, $p = .013$) but no statistically significant difference between the memory category and the metacognitive category ($t = 1.19$, $p = .257$). Finally, the t-test indicated that there is a statistically significant difference between the cognitive category and the metacognitive category ($t = 3.350$, $p = .101$).

For the PDY students, the t-test showed that there is no statistically significant difference in the use of the determination category and the social category ($t = .712$, $p = .479$), and the metacognitive category ($t = .721$, $p = .474$). However, there was a statistically significant difference between the determination category and the memory category ($t = 2.130$, $p = .008$), and the cognitive category ($t = 4.686$, $p = .000$). The t-test also showed a statistically significant difference in the use of social category strategies and the cognitive category strategies where $t = 3.740$ and $p = .001$, but there was no significant difference between the social category and the memory category ($t = 1.759$, $p = .083$) and the metacognitive category ($t = .045$, $p = .964$). The analysis also showed a statistically significant difference between the frequent use of the memory category strategies and the cognitive category strategies ($t = 2.333$, $p = .023$). But, the difference in the frequent use of the memory category is not statistically significant in comparison to the metacognitive category ($t = -1.617$, $p = .111$). Finally, the t-test showed that there is a significant relationship between the use of the cognitive category strategies and the metacognitive category strategies ($t = -3.548$, $p = .551$).

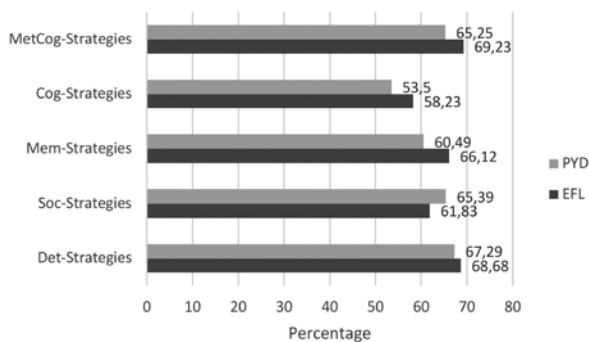


Figure 3. *EFL and PYD students' frequency of use of the VLS*

The results portrayed in Figure 3 justify our claim about the diversity of using VLSs among different students in either a different, or the same, context. This is consistent with previous research on VLSs (e.g., Schmitt, 1997, Gu, 2003; Al-Qahtani, 2005; Al-Fuhaid, 2007; Ben Kridis, 2023) revealing that language students typically use a different number of VLSs and they sometimes prefer some VLSs, but not others. The current results indicate that EFL students were in favour of using metacognitive strategies, such as “Using English language media”, “Using spaced word practice to revise vocabulary”, and “Studying the word over time”, more frequently than other types of strategies. As they reported in the interviews, students are trying to develop their autonomy in learning. These results are consistent with the studies conducted by Al-Buainain (2010), Mokhtar et al. (2009) and Xodjiyeva & Abdugaffarova (2023) who found that the majority of the participants in their studies preferred using metacognitive strategies rather than other types of strategies. The students use metacognitive strategies to evaluate their own learning for better outcomes (Alyami, 2001). The least frequently used category of VLSs used by EFL students was cognitive strategies within which “writing the new word several times and taking notes during classes” was the strategy of choice while “Listening to tapes of word lists”, “Using flashcards with the representation of the word”, and “Writing words on papers and sticking them on walls” were the least frequently used strategies. EFL students always focus on strategies that are based on communication skills as a result of their attitudes toward the importance of the pronunciation and spelling of new words. They elaborated during the interview that they have trouble in using the meaning of the new words in productive situations and they sometimes quickly forget the meaning when words are learned in isolation. According to McDermott (1999), complexity is realised when multiple meanings of words need to be understood in the context of other words in the sentences and paragraphs of text.

Although Figure 3 shows no significant differences in the use of the VLSs categories ($t = .674, p = .503$), the analysis indicated a statistically significant difference in the frequency of use in each category. As we noticed, the EFL students and the PYD students almost have the same number of VLSs, but they had ranked them in two distinctive ways. While EFL students prefer using metacognitive strategies more frequently than the other strategies, and they used cognitive strategies less frequently, PYD students preferred the use of Determination strategies such as “Using the internet to check the word’s meaning”,

“Guessing the word’s meaning from the text/context” and “Looking for the word’s meaning in a bilingual dictionary” over other strategies. Table 7 represents the difference among the groups (EFL and PYD) regarding the preference for the use of the VLSs categories. The preference for DETERMINATION strategies was also found in other studies such as those of Schmitt (1997), Liao (2004), Bernad and Gonzale (2009), Mokhtar et al. (2009), Aljdee (2011), Al-Khasawneh (2012), and Heshmatifar (2013), Nirattisai and Chiramanne (2014), and Al-Gouati (2014). PYD students are less frequent users of COGNITIVE strategies than EFL students, and the reasons as indicated by the students identified their unfamiliarity with these types of strategies. Table 7 below shows how the EFL and PYD students have ranked the VLSs in order of their preference.

Table 7. *EFL and PYD students’ frequency of use of VLSs’ categories*

EFL		Order of Frequency	PYD	
%	category		category	%
21.36	Metacognitive	1	Determination	21.59
21.19	Determination	2	Social	20.98
20.40	Memory	3	Metacognitive	20.94
19.08	Social	4	Memory	19.41
17.97	Cognitive	5	Cognitive	17.09

4.3. The relationship between VLSs on VKS

This study also aimed to analyse whether the students’ use of the VLSs correlates with their VKS, which is the concern of research question 3. In order to do so, a Pearson’s r data analysis was used and revealed a significant correlation ($r = -.282, p = .043$) between the VKS test scores and the VLSs frequency of use as shown in Table 8. Consistent with Easterbrook’s (2013) work, it is clear that the use VLSs plays a role in EFL students’ actual VKS. These results also support Al Fraidan’s (2011) assumption that the high use of various strategies is associated with high scoring on tests.

Table 8. *Correlations between VKS test scores and VLSs: EFL students*

	DETERMINATION	SOCIAL	MEMORY	COGNITIVE	METACOGNITIVE
Pearson Correlation	-.309*	-.370**	-.126	-.273	-.197
sig.	.026	.007	.372	.051	.162
N	52	52	52	52	52

Note: *, ** indicates statistical significance at the 0.05 and 0.01 levels (2-tailed), respectively.

The relationship between VKS scores and determination strategies was significant ($r = -0.309, p = 0.026$). The results also showed a significant relationship between social strategies and VKS scores ($r = -0.370, p = 0.007$). Yet, there was no significant relationship between VKS test scores and memory, cognitive and metacognitive strategies.

However, for the PYD students, Pearson’s r data analysis indicated that there was not a significant correlation ($r = -.234$, $p = .198$) between VLSs and VKS. Unlike the EFL students, PYD students’ use of VLSs does not affect their VKS. This, again, demonstrates the existence of the students’ individual differences in language learning. It could be that PYD is motivated to learn vocabulary related to their future subjects of study. While EFL are seeking to learn wide range of vocabulary to master their specialisation. It also shows that the choice and the frequency of use of VLSs are affected by other factors such as motivation, purpose of study and other factors that should be investigated in further studies.

Table 9. *Correlations between VKS test scores and VLSs: PYD students*

	DETERMINATION	SOCIAL	MEMORY	COGNITIVE	METACOGNITIVE
Pearson Correlation	-.294	-.124	-.216	-.207	.022
sig.	.103	.498	.235	.256	.907
N	32	32	32	32	32

Note: *, ** indicates statistical significance at the 0.05 and 0.01 levels (2-tailed), respectively.

In the case of PYD students, as the table shows, there was not a significant correlation ($r = -.234$; $p = .198$) between VLSs and VKS, yet, the PYD students stated in interview that they could memorise more words using repetition and they could gain confidence in using their own vocabulary especially when they practised with native speakers.

It is worth noting that the study investigated some of the reasons behind using some of the VLSs. The semi-structured interviews indicated that enrichment of the mental lexicon and autonomy in language learning are the main reasons for using some VLSs.

5. CONCLUSION

The objective of this study was to investigate the actual VKS of university students in the Kingdom of Saudi Arabia, their frequency use of VLSs, and additionally, to examine the relationship between the students’ use of different VLSs and their VKS.

The findings indicated that there is a similarity in the size of vocabulary knowledge of Saudi university students at the early stages of their education. The similarity in the VKS supports the hypothesis that Saudi university students have similar linguistic backgrounds and experience. Regarding vocabulary learning strategies, the results showed consistency with other previously conducted research in Saudi Arabia. There is, however, a difference in the frequency of use of VLSs among university students. For instance, PYD students showed a higher interest in using Determination strategies for learning new English language words. In contrast, first-year EFL students preferred using Metacognitive strategies. This could be justified by that PYD students need to learn more specialised vocabulary related to their future majors in the university, which cause them to use more determination strategies.

The evidence of this work contributes to the field of SLA as it supports the previous findings of the research in a similar context (i.e., Saudi university students). This work also validates Nation’s (2001) VKS Test and Schmitt’s (1997) Vocabulary Learning Strategies Classification, representing applicable tools for other works on VLSs. Pedagogically, the find-

ings in this study are meant to be inspiring to second/foreign language teachers and students. They go in line with previous findings such as Al-Fuhaid (2004) and Alyami (2011), who are Saudi English language teachers, assuredly seeking more trusted and practical methods for introducing the English language. Thus, the findings related to the students' VLSs preferences might indicate ways to develop new approaches to teaching. Seemingly, language students can benefit from such findings as they present ready-made strategies for mastering the most essential language component, that is, vocabulary (Al Fraidan, 2010). Either this can be achieved by the students' reading on language learning or by the reliance on the language teacher's constant searching for more applicable methods. The evidence presented here regarding the usage of different types of vocabulary learning strategies can also be linked to the importance of learner's autonomy as they highly correlate (Tilfarlioglu, 2018).

One more thing to be noted here is that this study was limited to students' types and levels, gender and context. There are different ways to take this research further. One of them is by looking at students from different contexts and backgrounds or by introducing gender and educational level as other variables. Another option is to investigate more regarding the non-significance of the correlation between VLS and VKS by looking at reasons behind this or by looking at the teachability of some VLS which may lead to an increase of VKS. Another suggestion is to implement new evidence-based ways to calculate vocabulary size tests in stead of the old ways used in the VLS tests (McLean, 2021; McLean & Stoeckel 2021).

The findings from this research is not only helpful to teachers and educators, but also to researchers interested in investigating VLS use. This area is growing in almost consistent results which give more valid and reliable conclusions towards the field of vocabulary learning and acquisition.

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7. APPENDIX: THE TAXONOMY (QUESTIONNAIRE) OF THE CURENT STUDY

1. Determination Strategies (*DET*)

- 1 I analyse the parts of speech (. verb, noun, adjective) to help me know its meaning.
- 2 I analyse the word affixes and roots (un-predict-able = unpredictable).
- 3 I check for an Arabic cognate (similar word in form and meaning)
- 4 I try to guess the word's meaning from the text/context.
- 5 I look for the word's meaning in a bilingual (English/Arabic or Arabic/English) dictionary.
- 6 I look for the word's meaning in a monolingual (English/English) dictionary.
- 7 I use the Internet to see the word's meaning.
- 8 I make my own lists of new words.
- 9 I learn the meaning of the word from flashcards shown by the teacher.

2. Social Strategies (*SOC*)

- 10 I ask the teacher for translation into Arabic.
- 11 I ask the teacher for a paraphrase/ synonymy of the new word.
- 12 I ask the teacher for a sentence including the new word.
- 13 I ask my classmate for the meaning of the word.
- 14 I learn the new meaning of the word through group work.
- 15 I study and practice meaning in pairs/groups in class and outside class.
- 16 I try to use the new word when interacting with native speakers.
- 17 I try to use the new word when I speak with my classmates.

3. Memory Strategies (*MEM*)

- 18 I make an image in my mind of the new word's meaning.
- 19 I connect the word meaning to a personal experience. (e.g., connecting the word ticket with a journey by train or plane).
- 20 I associate the word with its coordinate. (e.g., apples with oranges, peaches, etc.).
- 21 I connect the word to its synonyms and antonyms.
- 22 I use semantic maps (word trees) by drawing a web to connect the meaning of the new word.
- 23 I use "scales" for gradable adjectives, verbs, etc. (e.g. huge, big, medium, and small).
- 24 I use the Peg Method. (Rhyming e.g. 12. Shelf, Elf; 1. Sun, fun, gun; Aiding, Waiting, etc.)
- 25 I use the Loci Method. I associate new words with locations such as rooms of my house.
- 26 I group words together spatially on a page, notebook, etc. to study them.
- 27 I use the new word in an English sentence.
- 28 I group words together within a storyline.
- 29 I study the spelling of the word carefully.
- 30 I study the sound of the word carefully.
- 31 I say the word aloud when studying.
- 32 I image word's form.

- 33 I underline the word form or the initial letter of the word.
- 34 I use the Key Word Method. Using this strategy involves finding an Arabic word sounding like the English word, then creating an image combining the two concepts.
- 35 I try to remember the word affixes and roots.
- 36 I try to relate the word to its part of speech to remember it.
- 37 I paraphrase the word's meaning. I am learning in another way.
- 38 I learn words of an idiom together as if they were one word.
- 39 I use physical action to learn a new word.
- 40 I use semantic feature grids. I use my prior vocabulary knowledge to understand the meaning of new words.