Online Learning amid COVID-19 Pandemic: A Case Study of Vocabulary Learning Strategies

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Abstract
The outbreak of Coronavirus disease (COVID-19) has led countries to implement measures to prevent its spread. One of these measures included shutting down schools and universities. Consequently, the teaching, learning and assessment processes were entirely shifted from face-to-face to online. The current study aimed to investigate online vocabulary learning strategies (VLSs) amid COVID-19 pandemic used by Saudi EFL students. It attempted to find out the online strategies Saudi EFL students use to get the meaning of new vocabulary, the strategies they use to study new vocabulary and the strategies they follow to revise the learned vocabulary and keep them as part of their repertoire. The sample of the study was 119 male and female English and non-English majors. The study modified Kulikova’s (2015) questionnaire. This study was conducted at the University of Bisha, Saudi Arabia, during a fully online learning period in September and October 2020 at the time of COVID-19 outbreak. The data were collected via a self-administered questionnaire form. It was distributed via teachers of the English Department. The study found out that English majors used vocabulary learning strategies more than non-English majors. It also showed that students do not ask their teachers about the meaning of new vocabulary (77%), they also do not ask their classmates (92%), nor they ask their friends (85%), which could be attributed to online study and due to social distance during coronavirus pandemic (COVID-19).

Keywords: COVID-19 pandemic, online learning strategies, Saudi EFL students, vocabulary learning strategies

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1. Introduction

In order to stop the spread of the coronavirus disease (COVID-19), it was rational to close the institutes of education globally (Mahyoob, 2020; Syahrin & Salih 2020). As a result, schools and universities in Saudi Arabia transferred entirely online. Studying via different learning management systems such as Blackboard, Moodle, Zoom, Cisco, YouTube, Instagram, etc., force learners to learn new vocabulary that enhances vocabulary acquisition and allow students to practice them (Dincer, 2020). Mobile phones, online games, and blended learning were found as a good opportunity for students to acquire new vocabulary (Mahdi, 2018; Al Masri, 2020 & Bin-Hady, 2021).

It is a complex process to learn vocabulary through formal instruction as it is influenced by several factors such as the teacher’s attitude towards the notion of acquiring vocabulary and the students' readiness to learn vocabulary. Vocabulary learning is also influenced by the interaction of other factors such as the linguistic features of vocabulary; mother tongue and second/foreign language interference; the nature of vocabulary development; the ability of memory to encode, store, and then recall acquired or learned vocabulary; development of the second language (L2) mental lexicon and its organization; vocabulary input; individual differences; the teacher and teaching strategies; presentation of new words; and integration of lexical items in the mental lexicon (Takac, 2008). Vocabulary acquisition is also affected by learning strategies followed by learners. Yunhao (2011) put it: "The use of vocabulary learning strategies is one crucial factor that affects the success of foreign vocabulary acquisition" (p. 1).

English Vocabulary is important for English learners to listen, speak, read and write. Without vocabulary, English students cannot comprehend listening and reading skills and cannot produce any writing and speaking activity. It is found that English as a foreign language (EFL) learners who study English at schools cannot adequately express themselves neither in speaking nor in writing (Al-Nasser, 2015). Therefore, the current study is going to investigate the VLSs used by EFL students while studying English online. It attempts to answer the following questions:

1. What are the most and least VLSs used by EFL students during COVID-19 outbreak?
2. Is there a significant difference concerning the use of strategies between English and non-English majors?
3. Is there a significant difference with regard to the use of strategies between higher and lower GPA students?

2. Review of Literature

Recent studies, during the breakout of COVID-19, on Saudi students' VLSs have been conducted. Alghamdi and Elyas (2020) proved the positive effect of electronic flashcards on promoting learners' vocabulary. Alhadiah (2020) demonstrated a positive attitude towards the use of Quizlet program for learning vocabulary. Alamer (2020) examined the influence of Blackboard (Bb) on vocabulary acquisition. The study showed that Bb had a little effect on the performance of King Khalid University (KKU) students in vocabulary learning. Alharthi, Bown and Pullen (2020) reviewed the literature concerning the use of social media platforms for learning vocabulary. They found that out of 50 studies, only fifteen were relevant to using social media platforms for vocabulary learning. It has been acknowledged that social media platforms
are effective in the development of vocabulary. Concerning VLSs used by undergraduate students, Alahmad (2020) found that Saudi female undergraduate English major students used seventeen strategies, out of which nine cognitive and five metacognitive with high frequency in the vocabulary learning process. Her study also revealed that they used twenty-eight and ten strategies with medium and low frequencies, respectively. A similar study by Al-Khresheh and Al-Ruwaili (2020) proved that the most and the least preferable strategies used by the Saudi undergraduate learners were memory and cognitive strategies, respectively.

a. Vocabulary Learning Strategies

Many researchers and theorists provide definitions of learning strategies. Oxford (1990) call them "actions" that learners use to facilitate the learning process (as cited in Macaro, 2001, p.17). Cohen (2014) defined language learning strategies as "thoughts and actions, consciously chosen and operationalized by language learners, to assist them in carrying out a multiplicity of tasks from the very onset of learning to the most advanced levels of target-language performance" (p. 7). Learning strategies, as defined by O'Malley and Chamot (1990), refer to "the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" (p. 1). Prior to these definitions, Rubin (1975) had offered a comprehensive definition of learning strategies as "the techniques or devices which a learner may use to acquire knowledge” (p. 43). Therefore, language learning strategies can be described as a set of methods, techniques, actions, steps, thoughts, or behaviors that learners use to facilitate the learning process.

VLSs can be regarded as an integral part of language learning. They refer to all “actions that learners take to help themselves understand and remember vocabulary” Cameron (as cited in Yunhao, 2011, p. 7). According to Oxford (2017) "L2 vocabulary learning strategies are teachable, dynamic thoughts and behaviors that learners consciously select and employ in specific contexts to improve their self-regulated, autonomous L2 vocabulary development for effective task performance and long-term proficiency” (p. 244). Learning a word doesn't mean knowing its meaning only. According to Hurd and Lewis (2008), it is a cumulative process that depends on identifying the word's form, meaning, and its usage in different circumstances.

Hatch and Brown (2000) explained five steps to learning new words: encountering the word, identifying the word form, identifying its meaning, associating the word form to its meaning, and using it. From the point of view of VLS use, Schmitt (2000) classified VLSs into two main categories: strategies for the discovery of new word meaning and others for consolidating a new word meaning after it has been discovered. The former category subsumes two subcategories, determination strategies, and social strategies. The latter category includes social strategies, memory strategies, cognitive strategies, and metacognitive strategies. O'Malley and Chamot (1990) classified language learning strategies used by foreign language students into three categories: metacognitive strategies, cognitive strategies, and social/affective strategies. Concerning strategies used for learning vocabulary.

On the basis of Ming Wei's (2007) classification of strategies, Yunhao (2011) listed seven VLSs: dictionary use, guessing, perceptions, encoding, activation, management, and sources. VLSs are important for vocabulary learning and acquisition Takac (2008).
On the basis of VLSs proposed by Schmitt (2000), Khair (2017) investigated VLSs used by Sudanese English major students at the University of Al-Fashir. The study revealed that using VLSs had a positive effect on the development of vocabulary. It also showed that metacognitive strategies were most frequently used (75%) by the participants and then cognitive strategies. However, social strategies were the least used by them. Patahuddin, Syawal, and Taher (2017) verified strategies employed by learners of junior high school in Parepare, Indonesia, for enhancing their English vocabulary. The results of the study showed that learners used different methods such as dictionaries, reading English books and advertisements, playing games, the internet, listening to songs, and watching movies to acquire vocabulary. Alqarni (2018) conducted a study on the impact of training students to raise their awareness of VLSs. The participants were 29 Saudi male English majors in the College of Languages and Translation at King Saud University. The results of the study showed the impact of this training in the increased use of VLSs by the participants and their use in reading and grammar courses as well. To explore the development of vocabulary by using WhatsApp, Bensalem (2018) conducted a study at Northern Borders University in Saudi Arabia. Forty students participated in the study. They were divided into two groups, experimental and control. The experimental group was asked to use the new vocabulary in sentences and submit their assignments via WhatsApp, and the control group was asked to submit hard copies of their assignments. The results of the study showed that the experimental group, which also proved a positive attitude for learning vocabulary via WhatsApp, outperformed the control group in the vocabulary test. Yaacob et al. (2019) explored the use of VLSs by students at Saudi School Malaysia. The findings of the study revealed that the participants used five stages of strategies (encountering the new word, getting the word form, getting the word meaning, consolidating word form and meaning in memory, and finally using the word) at a medium level and almost at a close range.

Other studies on the use of VLSs by students of other academic majors were conducted. Seddigh and Shokrpour's study (2012) investigated the use of VLSs by medical students and found out that guessing and dictionary strategies were the most frequently used strategies while social and study preference were the least used by the subjects of the study. This is not in line with Hashemi and Hadavi's (2015) study, which investigated the use of VLSs by students of Medical Sciences at Rafsanjan University. The results of the study showed that 57.6% of the participants used dictionaries. Guessing and social strategies were the most used strategies. However, autonomy and note-taking strategies had the least obtained scores. The results also showed significant differences pertaining to students' majors. Social strategies were more frequently used by paramedical and nursing students, while study preference and selective attention strategies were used by medical and dentistry students. Female students preferred social strategies, but males used autonomy and note-taking strategies more. Boonnoon, (2019) explored the use of VLSs by students of four different academic majors (Business, Engineering, Agriculture and Health Science) at a comprehensive university in the northeast of Thailand and examined if there was a significant difference in strategy use pertaining to their academic major. The results of her study revealed a significant difference in the use of five categories - study preferences, selective attention, autonomy, social, and memory. However, the results did not show any significant difference for the other three categories (guessing, dictionary and note-taking) among the participants. The results also proved that health science students used VLSs more frequently than others.

b. Significance of Vocabulary for Language Proficiency
Being acquainted with vocabulary is vitally important for acquiring second and foreign languages and mastering receptive and productive language skills (Viera, 2017). Vocabulary knowledge is vitally important for language comprehension and production (Seddigh & Shokrpour, 2012; Patahuddin, Syawal & Taher, 2017). VLSs play an essential role in developing the four language skills (Patahuddin, Syawal & Taher, 2017; Boonkongsaen, 2012). Without sufficient vocabulary knowledge, learners cannot communicate. According to Oxford (2017) "grammatical competence is needed, along with competence in using vocabulary, for optimal communication" (p. 243). Yaacob et al. (2019) said, "In all linguistic skills, vocabulary takes its role in developing a student's language proficiency" (p. 3). Boonnoon (2019) stated, "To master the language, learners need to pay utmost attention to all details pertaining to the language knowledge including grammatical structure, vocabulary, and register" (p. 902). Learning vocabulary is considered as the most urgently required thing that people need to learn another language (Laufer & Sim 1985, as cited in Hashemi & Hadavi, 2015). Khan, Radzuan, Shahbaz, Ibrahim and Mustafa (2018) conducted a study on the role of vocabulary knowledge in the development of speaking skills which revealed that vocabulary knowledge and speaking proficiency are strongly correlated. Learners who know VLSs find it easy to learn new vocabulary because VLSs facilitate the learning process of new vocabulary (Boonkongsaen, 2012). Adam (2016) undertook a study on the role of VLSs in the development of learners' performance which proved the necessity of having a good stock of vocabulary for language skills mastery. In addition, vocabulary teaching and learning strategies promote both learners' writing and communication abilities.

Thus, one of the main factors as to why language learners might not be able to communicate is their insufficient vocabulary knowledge that can be regarded as the crucial need to improve their language proficiency. The wider the vocabulary, the more proficient learners are.

c. Factors Affecting Vocabulary Acquisition

Boonkongsaen (2012) discussed twelve factors that affect learners' VLS use: belief, attitude, motivation, and language learning experience; the field of study, course type, class level, gender, and language learning environment; language achievement, language proficiency, and vocabulary knowledge. She categorized them into three main categories: learners' individual differences that include the first four factors, situational and social factors that cover the next five, and learners' learning outcome, which encompasses the last factors. You (2011) conducted a study on factors that contribute to vocabulary acquisition while reading. Her study revealed that factors such as explanation, repetition, and translation into L1 are significantly more effective for vocabulary acquisition. Other factors such as marginal glosses and dictionary use help learners acquire meanings of new words. In addition, factors like additional oral and visual inputs affect the retention of new words positively. She found out that learners vary in their vocabulary acquisition due to individual differences such as motivation and language proficiency.

Yaacob et al. (2018) proved that motivation is one of the most significant factors that affect vocabulary learning among Saudi students at Saudi School in Malaysia. It also showed that learners' attitudes and beliefs and learning environment also affect vocabulary learning. A leaning environment motivates students to have a positive attitude towards learning English. Lin-Fang (2013) studied the factors that affect students' use of VLSs at Fooyin University in Taiwan.
Motivation was proved to have the greatest effect on VLS. Proficient learners with high motivation participated more than students with low motivation in self-initiated learning activities. Learners whom their family members tutored showed more proficiency than others. The study showed that the effort spent on learning didn't affect VLS. According to Knez (2018) learners' perceptions influenced VLS. In other words, learners who think that English is easy to use more incidental VLS. However, gender and level of education do not affect vocabulary choice.

Our study is different from the studies mentioned in the literature with regard to its focus on VLSs by Saudi undergraduate learners amid the outbreak of COVID-19, which none of these recent studies have touched upon.

3. Methodology

This section is dedicated to present the methodology that is followed to conduct the current study.

a. Participants

The sample of the study consists of 119 students from the University of Bisha, Saudi Arabia. The participants are English majors (79) and non-English majors (40) who study English online during COVID-19 outbreak. Forty-six participants are male and 73 are female. The students' GPA was one of the variables of the study. The background information of participants is presented in the following table.

| Variables   | Category         | N   |
|-------------|------------------|-----|
| Gender      | Male             | 46  |
|             | Female           | 73  |
| Level       | 1 or 2 (Year 1)  | 16  |
|             | 3 or 4 (Year 2)  | 31  |
|             | 5 or 6 (Year 3)  | 26  |
|             | 7 or 8 (Year 4)  | 46  |
| Major       | English Majors   | 79  |
|             | Non-English majors | 40 |
| GPA         | Higher (3.5-5)   | 58  |
|             | Lower (< 3.5)    | 61  |

b. Instruments and Data collection

The researchers distributed a questionnaire on vocabulary learning strategies to the students of English. The questionnaire was of two sections. The first section was a background information. It elicits students, gender, GPA and levels. The second section used Kulikova's (2015) modified questionnaire. It was divided into three categories: the strategies that students use to get the meaning of new vocabulary, the strategies that learners use to study new vocabulary and the strategies that learners follow to revise vocabulary to keep them in their repertoire. Before distributing the questionnaire, it was sent in an online form to 9 university teachers to referees them. Then they were asked to write their suggestions for modification if suggested. The questionnaire was finally updated according to the comments given by referees.
To avoid the questions' misunderstanding, the questionnaire was translated into Arabic and distributed to students in English and Arabic.

The questionnaire was designed in Google Format and the link was sent to the chairperson of the English Department. He sent the link to the English teachers' group in Telegram in September 2020, requesting them to distribute it to their students. The students were informed that the questionnaire is for research purpose and it will be confidential. They were also informed that they would not get or lose any mark because of responding to the questionnaire. The participants were not asked to write their names in the questionnaire to avoid the bias responses.

c. Data Analysis

SPSS package 24 was used to analyze the frequencies and percentages of vocabulary learning strategies followed by English and non-English majors. It was also used to analyze the Chi-Square to find out the significant differences between the study variables.

4. Results and Discussion

To answer the research questions of the current study, the students' responses were analyzed, presented and discussed in this section.

4.1 Vocabulary strategies used to get the meaning of new vocabulary

The only significant difference between English-majors and non-English majors was that English majors were more likely to rely on a bilingual dictionary (Chi-square = 8.10, p<.005) as shown in Table 2.

| Table 2, Chi-square test: the difference between English and non-English majors in using a bilingual dictionary |
|--------------------------------------------------|-----------------|-----------------|-----------------|
| Pearson Chi-Square                               | 5.212           | 1               | 0.022           |
| Continuity Correctionb                           | 4.353           | 1               | 0.037           |
| Likelihood Ratio                                 | 5.364           | 1               | 0.021           |
| Fisher's Exact Test                              |                 |                 | 0.030           |
| Linear-by-Linear Association                     | 5.168           | 1               | 0.023           |
| N of Valid Cases                                 | 119             |                 |                 |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.81.
b. Computed only for a 2x2 table
However, Table 3 displays the students' frequencies and percentages when trying to get the meaning of a new word. Looking at the raw numbers, English majors were less likely to ask a classmate (8%) than others (13%) and more likely to use all other strategies than non-English majors. This suggests that English majors have a wider range of strategies for finding the meaning of a new word than do non-English majors. For non-English majors, the most-used strategy was to guess the meaning from context (53%), a strategy that was also common for English majors (65%). However, the most common strategy for English majors was to look up the word in a bilingual dictionary (73%), a strategy used less frequently by non-English majors (45%). Another interesting result is that only 24% of English-majors use monolingual dictionaries (English-English dictionaries). This is in line with Alhaisoni (2020) who found that bilingual dictionary is the most used one and monolingual dictionary is less frequent. However, 73% of the English-majors use bilingual dictionary. This might indicate the students' keenness to know the meaning in their native language.

Table 3. Frequencies and percentages of vocabulary strategies followed to get the meaning of a new vocabulary

| Vocabulary strategies                                           | Non English-major | English-major |
|-----------------------------------------------------------------|-------------------|---------------|
|                                                                | F    | %    | F    | %    | F    | %    | F    | %    |
| "No a dictionary to get the meaning of a new word"             |      |      |      |      |      |      |      |      |
| I look it up in a bilingual dictionary (English-Arabic dictionary). | 22   | 55%  | 18   | 45%  | 21   | 27%  | 58   | 73%  |
| I look it up in a monolingual dictionary (English-English dictionary). | 33   | 83%  | 7    | 18%  | 60   | 76%  | 19   | 24%  |
| I search for it in Google to find its meaning in different dictionaries. | 22   | 55%  | 18   | 45%  | 39   | 49%  | 40   | 51%  |
| I ask the teacher to translate it.                             | 34   | 85%  | 6    | 15%  | 61   | 77%  | 18   | 23%  |
| I ask my classmates to translate it.                          | 35   | 88%  | 5    | 13%  | 73   | 92%  | 6    | 8%   |
| I ask my friends via WhatsApp group or other social media devices to translate it | 36   | 90%  | 4    | 10%  | 67   | 85%  | 12   | 15%  |
| I guess its meaning from context.                             | 19   | 48%  | 21   | 53%  | 28   | 35%  | 51   | 65%  |

4.2 Vocabulary strategies used to study new vocabulary

As in Table 4, the Chi-square test shows a significant difference between English majors and non-English majors regarding the strategy of writing the newly learned vocabulary
repeatedly. English majors were more likely to write them repeatedly (Chi Square = 5.21, p<.030).

Table 4. Chi-square test: the difference between English and non-English majors in writing learned vocabulary repeatedly

| Vocabulary strategies | Value   | df  | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|-----------------------|---------|-----|-----------------------------------|----------------------|----------------------|
| Pearson Chi-Square    | 5.212a  | 1   | 0.022                             |                      |                      |
| Continuity Correction | 4.353   | 1   | 0.037                             |                      |                      |
| Likelihood Ratio      | 5.364   | 1   | 0.021                             |                      |                      |
| Fisher's Exact Test   |         |     |                                    | 0.030                | 0.018                |
| Linear-by-Linear Association | 5.168 | 1   | 0.023                             |                      |                      |
| N of Valid Cases      | 119     |     |                                    |                      |                      |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.81.
b. Computed only for a 2x2 table

Table 5 shows that English majors were also more likely to write example sentences for new words. Writing rather than orally repeating seems to be a strategy more often used by English majors though it does not show any significant difference between the English and the non-English majors.

Table 5. Frequencies and percentages of vocabulary strategies followed to study new vocabulary

| Vocabulary strategies                  | Non English-major | English-major |
|---------------------------------------|-------------------|---------------|
|                                       | F | %     | F | %     | F | %     | F | %     |
| To study the new vocabulary by        |    |        |    |        |    |        |    |        |
| reviewing the newly learned terms with my classmates | 32 | 80% | 8 | 20% | 68 | 86% | 11 | 14% |
| repeating them aloud                  | 22 | 55% | 18 | 45% | 46 | 58% | 33 | 42% |
| repeating them silently               | 31 | 78% | 9 | 23% | 63 | 80% | 16 | 20% |
Table 6 shows a significant difference between high grade and low-grade students regarding connecting new words to their synonyms and/or antonyms. Students with high GPA are more likely to use this strategy than students with low GPA, Chi-Square = 6.85, p<.02. This item showed that students with high GPA have enough vocabulary in their repertoire, allowing them to connect the learned words to synonyms and antonyms, but students with low GPA do not have enough vocabulary to follow this strategy.

Table 6, Chi-square test: the difference between high grade and low grade students in connecting the learned vocabulary to their synonyms/antonyms

| Writing strategy                                               | Value | df  | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|----------------------------------------------------------------|-------|-----|-----------------------------------|----------------------|----------------------|
| writing repeatedly.                                            | 29    | 73% |                                   |                      |                      |
| connecting the word to its synonyms/antonyms.                  | 26    | 65% |                                   |                      |                      |
| grouping words into categories (e.g., drama, novel, poetry) to remember them. | 34    | 85% |                                   |                      |                      |
| translating them into Arabic in the course book.               | 28    | 70% |                                   |                      |                      |
| writing example sentences for the new words.                   | 25    | 63% |                                   |                      |                      |

- **Pearson Chi-Square**
  - Value: 6.580
  - df: 1
  - Asymptotic Significance (2-sided): 0.010

- **Continuity Correction**
  - Value: 5.610
  - df: 1
  - Asymptotic Significance (2-sided): 0.018

- **Likelihood Ratio**
  - Value: 6.704
  - df: 1
  - Asymptotic Significance (2-sided): 0.010

- **Fisher's Exact Test**
  - Value: 0.011
  - df: 1
  - Asymptotic Significance (2-sided): 0.009

- **Linear-by-Linear Association**
  - Value: 6.525
  - df: 1
  - Asymptotic Significance (2-sided): 0.011

- **N of Valid Cases**
  - Value: 119

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a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.52.
b. Computed only for a 2x2 table
4.3 Vocabulary strategies used to make the learned vocabulary part of students' repertoire

Table 7 shows the strategies used to make the learned vocabulary part of the students' repertoire. The results show that there is no significant difference among the variables (major/non-major, male/female, and high grade/low grade) in this regard.

Looking at the raw numbers, it is clear that the English and non-English majors' strategies are similar. The only strategy that shows higher frequency than others is the use of the learned vocabulary in their speaking and writing. The other strategies are not commonly used by the majority of either the English or the non-English majors. This might lead to the inability of students to use appropriate vocabulary in their performance.

Table 7. Frequencies and percentages of vocabulary strategies followed to make the learned vocabulary part of their repertoire

| Vocabulary strategies                                      | Non English-major | English-major |
|------------------------------------------------------------|-------------------|---------------|
| To make the new vocabulary part of my repertoire           | F | % | F | % | F | % | F | % |
| I keep lists of learned words and revise them regularly.   | 24 | 60% | 16 | 40% | 51 | 65% | 28 | 35% |
| I use newly learned words as much as possible when I write | 16 | 40% | 24 | 60% | 32 | 41% | 47 | 59% |
| or speak.                                                  |                  |               |    |     |    |     |    |     |
| I write the new words of flash cards and hang on the wall.  | 36 | 90% | 4 | 10% | 69 | 87% | 10 | 13% |
| I keep a vocabulary notebook and review continuously.      | 25 | 63% | 15 | 38% | 52 | 66% | 27 | 34% |
| I make vocabulary cards and study them every now and then. | 34 | 85% | 6 | 15% | 57 | 72% | 22 | 28% |

5. Conclusion and Recommendation
The current study aimed to investigate online vocabulary learning strategies used by Saudi EFL students who study English at the University of Bisha, Saudi Arabia, during COVID-19 outbreak. The current study results showed that English majors used vocabulary learning strategies to get the meaning of the new vocabulary and study the learned vocabulary. Concerning strategies to make the learned vocabulary as part of their repertoire, the study did not find significant differences among the variables (major/non-major, high grade/low grade, and male/female). Students reported that they did not highly use strategies of asking teachers, classmates, and friends. However, they used bilingual dictionaries, Google Translate, or they guessed the meaning. This might be attributed to online learning during the pandemic, which encouraged self-learning. It was found that the students of English and non-English majors were
different with regard to using strategies to get the meaning of new vocabulary and to study them, but not with regard to strategies to keep the learned ones as part of their repertoire.

The researchers recommend a further study to investigate the impact of online learning on self-regulated learning as learning vocabulary online might enhance online self-regulated learning. The researchers also recommend that EFL students be taught vocabulary learning strategies in the university's first semester. Furthermore, they recommend that students be taught how to use dictionaries and know what dictionaries provide users with.

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