Investigating English Vocabulary Learning Challenges among Chinese EFL Students

Cao Panpan[1], Suwaree Yordchim [2], Suphat Sukamolson [3], Sarada Jarupan[4] and Kirk Person[5]
Suan Sunandha Rajabhat University, Thailand[1,2]
Maejo University, Chiang Mai, Thailand[3,4,5]
Corresponding Author, Email: suwaree.yo@ssru.ac.th

****

Abstract

In the EFL context, most Chinese learners are frustrated with vocabulary learning, but few studies focus on first-year English majors from different ethnic groups. This study investigated their vocabulary learning challenges, including vocabulary learning beliefs (VLB) and vocabulary learning strategies (VLS), vocabulary size, vocabulary depth, vocabulary learning difficulties and needs. A mixed research method was used. The quantitative data measured students' VLB, VLS, and vocabulary knowledge from size and depth and qualitative method explored students' ideas of their vocabulary learning difficulties and needs. Data were collected from 45 students by systematic random sampling. The research instruments included an adapted VLS Questionnaire, Vocabulary Levels Test (version 2), Word Part Levels Test (Easy Level) and a semi-structured interview. The qualitative data was analysed by using Hyper Research 4.5.4 and the quantitative data was analysed by using SPSS 26. The results revealed that: 1) in VLB, students strongly believed in memorizing vocabulary rather than learning through interaction, mother-tongue, or vocabulary apps. 2) in VLS, social strategies were rarely used, while dictionary strategies and contextual guessing were frequently used; visual and semantic encoding were mostly neglected. 3) in vocabulary size, students knew 80.73% of the 2,000-word level, 60.53% of the 3,000-word level, and 22.6% of the 5,000-word level, falling short of curriculum standards. 4) in vocabulary depth, there was a need for further improvement in their comprehension of affix forms and meaning compared with their understanding of affix categories. 5) Top key difficulties included forgetfulness, trouble with long spellings, and poor pronunciation. Students most need instruction on prefixes, suffixes, memorization methods, word formation, and usage. The results indicated important implications for enhancing vocabulary teaching and learning.

Keywords: Vocabulary learning beliefs; vocabulary learning strategies; vocabu lary size; vocabulary depth; Vocabulary learning difficulties; learning needs

[*] Received: October 31 2024; Revised: November 29 2024; Accepted: November 16 2024

Introduction

Vocabulary plays a very important role in language learning. Without vocabulary, nothing can be conveyed (Wilkins, 1972). Vocabulary is essential for language comprehension (Ahrabi Fakhr, Borzabadi Farahani, & Khomeijani Farahani, 2021). Vocabulary skills are crucial to nearly every aspect of language proficiency for students (Meara, 1996). In China, the English curriculum standards stipulate the vocabulary requirements for students ranging from elementary school to university level. High school students should reach the basic level of knowing 2,400 to 2,500 English words by graduation (Ministry of Education of the People's Republic of China, 2017). English majors should have 2,000 receptive and 1,200 productive words upon admission, 10,000-12,000 receptive and 5,000-6,000 productive words by the end of their four-year study (English Group of the Teaching Guiding Committee for College Foreign Language Majors, 2000), which means that students need to increase their vocabulary at the speed of 2,000 to 2,500 annually.

However, Chinese EFL students often struggle with vocabulary learning due to rote memorization, wrong ideas on vocabulary learning, ineffective strategies, and limited knowledge in vocabulary size and depth (Chen, 2009; Kuang, 2010; Ma, 2012). Teachers also lack effective vocabulary teaching methods and strategies (Kuang, 2010; Ma, 2012), and students face challenges in understanding and applying vocabulary due to differences in word formation and usage patterns between English and Chinese (Zhang & Wu, 2009). Poor vocabulary knowledge can cause inappropriate language use, communication issues and hinder language learning (Hadi & Guo, 2020).

Research Objective

To better know their vocabulary learning problems, the objective of this study is to investigate Chinese English-major Freshmen's vocabulary learning challenges from their vocabulary learning beliefs and strategies, vocabulary size, vocabulary depth, vocabulary learning difficulties and needs.

Literature Review

Definition and dimension of Vocabulary

Traditionally, vocabulary is considered as individual words or a set of words in a language. Vocabulary is often described by the concept of word family, which includes not only its base word, but also its inflected forms and derivatives (Nation & Waring, 1997). Based on Webster's New World Michael E. Agnes. (2009), vocabulary consists of more than just individual words, it also includes a large number of fixed and semi-fixed phrases and collocations. In this study, vocabulary is defined as not only individual words, but also lexical chunks such as phrases and collocations.

Four dimensions of vocabulary knowledge have been idnetified by researchers. The first dimension, vocabulary size or breadth, refers to the number of words one can recognize and produce. The second dimension, vocabulary depth, encompasses the quality, extent and richness of word knowledge, including its various forms, meanings, uses in different contexts, collocations, morphological properties, syntactic features, semantic colors, relations, styles and so on (Richards, 1976; Qian, 2002). The third one, vocabulary automaticity, refers to the ability to use related words automatically without conscious thought when they are needed (Schmitt, 2010; Meara, 1996). The fourth dimension, appropriateness, means the ability to know when

and how to use what with whom in what context correctly(Gu, 2019). Since automaticity and appropriateness has been barely investigated and very hard to measure, this study would focus on the first two dimensions.

Definition and classification of Vocabulary Learning Strategies

Since Language Learning Strategies (LLS) is a broader framework than VLS, LLS should be presented first. According to Oxford (1990), learning strategies are plans or methods that language learners adopt to facilitate their learning. VLS is an aspect of language knowledge learning strategies, based on Rubin and Thompson's (1994) classification of LLS into language learning strategies and language skills development strategies. O'Malley and Chamot (1990) divide strategies into metacognitive, cognitive, and social/affective. However, this classification gives less weight to social or affective strategies and ignores learners' beliefs (Wen, 2004). Oxford (1990) divides LLS into direct and indirect strategies, but Wen (2004) argues that this lacks rigorous logic, particularly in separating memory strategies from cognitive strategies. Wen (1996), based on studies among Chinese EFL students, proposes a framework with two subsystems: beliefs and methods. She argues that beliefs influence method choice, which in turn affects learning outcomes. Wen also introduces form-focused, function-focused, and mother-tongue beliefs based on Stern's arguments in foreign language teaching. The first belief places a higher value on accuracy than fluency and highlights the value of traditional exercises like extensive reading and listening for learning of vocabulary, sounds, and grammar. The second belief holds that learning a foreign language requires a great deal of experience in speaking, listening, reading, writing, and communication. The third belief, which sees translation as an efficient path to competence, emphasizes the importance of the first language (L1) in learning a foreign language. Accordingly, there are form-focused, function-focused, and mother-tongue strategies respectively.

As a subcategory of LLS, VLS are techniques for learning new vocabulary in a second language (Gu, 1994). Schmitt (1997) defines VLS as behaviors, techniques, and mental processes that aid vocabulary learning. Based on O'Malley and Chamot (1990), Gu & Johnson (1996) develop the third version of vocabulary learning questionnaire (VLQ 3), which includes vocabulary learning beliefs, metacognitive strategies, and cognitive strategies. Vocabulary learning beliefs involve memorization, context, and study. Metacognitive strategies focus on selective attention and self-initiation. Cognitive strategies involve initial handling (e.g., guessing, using dictionaries and note-taking), consolidation (e.g., rehearsal and encoding), and activation. Based on Oxford (1990), Schmitt (1997) classifies VLS into discovery strategies (determination and social) for understanding new words and consolidation strategies (social, memory, cognitive, and metacognitive) for reinforcing knowledge of familiar words. Besides, in this digital era, the technology-assisted vocabulary learning via mobile APP is called vocabulary APP strategy, which have been proved effective for improving students' vocabulary learning (Zhang, 2022; Ajisoko, 2020; Wei, 2023).

EFL Learners' VLS Investigation

In EFL learning, numerous research has focused on VLS used by learners.

First, studies on VLB have shown mixed opinions. According to certain research (Li, 2010; Wu & Wang, 1998), students disagreed with the idea that vocabulary should be memorized. However, according to other research (He, 2014; Zhang, 2009), EFL students largely agreed with the belief that vocabulary should be learned through active use. Furthermore, according to certain research, students believed vocabulary should be learned in context (Hadi & Guo, 2020; Xu, 2008).

Second, in VLS, in a broad sense, Wang (2022) found that students used social/affective strategy the most, followed by metacognitive and cognitive strategies. Ibrahim and Alshami (2022) reported learners used cognitive and memory strategies the most frequently, but social strategies the least. In a narrow sense, studies have found the most frequently used strategies by EFL learners included memorization (Fu, 2021; Rahmatika, Pertiwi, Karmala, & Nastiti, 2017; Rabadi, 2016), dictionary use (Rahmani, 2023; Wang, 2022; Fu, 2021; Hadi & Guo, 2020), contextual guessing (Wang, 2022; Hadi & Guo, 2020), note-taking (He, 2014; Zhang, 2009), repetition (Fu, 2021), auditory encoding (Hadi & Guo, 2020), and word structure (Wang, 2022). In contrast, the least frequently used strategies are metacognitive strategies (Rabadi, 2016), note-taking strategies (Rahmatika et al., 2017), wordlists (Li, 2010), communication /cooperation (Li, 2010).

Third, in vocabulary size, Juan and Xiang (2019) found that Chinese students' vocabulary breadth at each learning stage was not sufficient enough to meet the requirements specified in the corresponding English teaching syllabus. Similarly, Laufer and Ravenhorst-Kalovski (2010) revealed that Chinese EFL students frequently struggled with a narrow vocabulary range. Zhang (2009) further reported that students averaged out to a small vocabulary size.

Besides, studies have constantly showed that vocabulary learning strategies (VLS) and vocabulary size are positively correlated. Junaid, Syam, and Hambali (2023) concluded that students could greatly increase their vocabulary size by using vocabulary learning strategies. Wang (2022) found VLS had positive and significant correlation with vocabulary breadth, with cognitive strategies showing the strongest correlation among the three strategies of metacognitive, cognitive and social/effective strategies. Gu and Johnson (1996) also discovered that test scores were positively correlated with various such VLS as contextual guessing, dictionary use, note-taking, word formation, contextual encoding, and activating newly learned words. In contrast, visual repetition of new words was the great negative predictor of both vocabulary size and general proficiency. Furthermore, Gu and Johnson (1996) added that employing these strategies in combination had a greater impact on learning outcomes than the application of each strategy alone. Similarly, He (2014) identified nine strategies had a positive correlation with active vocabulary, particularly selective attention, association, and activation. Zhang (2009) found comparable strong relationships between vocabulary size and usage of dictionaries, note-taking, visual repetition, and trying using new words. Additionally, Zhang & Lu (2015) suggested that acquiring word forms and association meanings was a key component of techniques that significantly predicted vocabulary depth and breadth.

Fourth, in vocabulary depth, Juan and Xiang (2019) found Chinese learners performed poorly on the test measuring vocabulary depth in comparison to breadth knowledge, and the development of vocabulary depth knowledge from lower to higher stages was highly sluggish and unsatisfactory. Afifah (2021) revealed that students' vocabulary learning strategies were strongly correlated with their knowledge of affixes, consistent with the results of Noprianto and Purnawarman (2019) and Sukying (2018). Wei (2015) reported that the word part technique and self-strategy learning were superior than the keyword method on the translation test format, but no significant distinction was observed among the three on the form recognition test. Paiman, Yap and Chan (2015) revealed that morphemic analysis, the study of Graeco-Latin word parts, might be a more effective method for learning vocabulary, especially in the health sciences. Taie (2015)'s results confirmed that students with stronger critical thinking

ability may be better equipped to use the word part analysis technique to understand the meaning of new medical words. Zheng & Nation (2013) highly valued word part technique as a learner strategy. Kuo and Anderson (2006) highlighted the importance of morphological awareness and the intertwined relationship between morphological awareness and vocabulary knowledge.

Last, Mohammed (2023) observed that students had difficulty applying strategies and committing new vocabulary into long-term memory.

Despite these findings, several gaps about vocabulary learning strategies remain unaddressed. First, metacognitive and cognitive strategies in a variety of learning contexts have received the majority of attention in previous studies on VLS investigation among EFL learners, with emotional, social, and APP strategies receiving less attention. Second, research on exploring word part knowledge is few. Third, studies involving first-year English majors in ethnic minority colleges inside ethnic minority areas are not many. Thus, this study aims to bridge these gaps by taking other dimensions and word part knowledge into consideration and focusing on Chinese EFL English majors from different ethnic groups.

Research Methodology

Population and Participants

The population was 91 newly admitted English majors at an ethnic minority college, and all enrolled in Comprehensive English (1).

45 students were an optimal sample size calculated by using the online Sample Size Calculator when the confidence level is 95%, the Margin of Error is 5%, Population Proportion is 94%, and Population Size is 91 (Calculator.net, 2024). The 45 students were selected by using a systematic random sampling method. The process continued until all the 45 participants were found. Among the 45 students, 41 were females and 4 were males. In ethnic identity, there were 40 Han students, 1 Tibetan, 1 Yi, 1 Hui and 1 Mongolia.

For the semi-structured interview on vocabulary learning difficulties and needs, 9 students were chosen using a systematic sampling method, as 10% of the population was the minimum, acceptable sample size for descriptive research (Gay and Diehl, 1992, p.146).

Instruments

The instruments include 1) an adapted VLS Questionnaire, 2) Vocabulary Levels Test, version 2 (VLT2), 3) Word Part Levels Test (WPLT), Easy Level, and 4) a semi-structured interview.

The VLS questionnaire is adapted mainly based on Gu and Johnson (1996)'s VLQ by absorbing the social strategy's part from Schmitt (1997)'s VLS taxonomy and affective strategies from Oxford (1990)'s language learning strategies (LLS). Besides, the researcher added some items about mother-tongue strategies from Wen's LLS (1996) and vocabulary APP strategies to the questionnaire as shown in Table 1:

Table 1. Vocabulary Learning Strategy Questionnaire Framework

VLS adapted from	Vocabulary Learning Strategies (VLS)	No. of VLS
	Beliefs about Vocabulary Learning	7
Gu and Johnson's VLQ (1996)	Meta-cognitive Regulations	10
	Cognitive strategies	68
Schmitt's VLS taxonomy (1997)	Social Strategies	6
Oxford's LLS (1990)	Affective Strategies	5
Wen's LLS (1996)	Mother-tongue Strategies	6
	Vocabulary APP strategies	5
Total VLS		107

The questionnaire consisted of three parts with a total number of 107 items: the first part is to know students' personal information, the second part are 7 items to elicit their VLB, the third part is 100 items to elicit their VLS, including metacognitive strategies, cognitive strategies, social strategies, affective strategies, mother-tongue strategies and vocabulary APPs strategies.

The quality on content validity of the questionnaire: Item-Objective Congruence (IOC) was validated by three experts of English teaching who had more than 20 years' teaching experience. By using the calculating IOC Index Program "IoC_CalculationVersion1_50_English_PT" (Sukamolson & Sonthi, 2021) using the formula invented by Rovinelli and Hambleton (1976), the mean of the whole set was 0.9814 and the IOC was calculated 0.9906, which was considered a very high content validity (Turner & Carlson, 2003).

The Cronbach's Alpha of the whole questionnaire was 0.930, shown in Table 2.

Table 2. Reliability Statistics of the whole set

Cronbach's Alpha	N of Items
.930	107

According to Stat-U (2020), when the alpha was equal to or more than 0.90, it meant the internal consistency was excellent, thus, the Cronbach's Alpha of the whole questionnaire was at the excellent level.

The 2000-word level, 3000-word level and 5000-word of VLT 2, constructed by Schmitt, Schmitt, & Clapham (2001), was used to test students' vocabulary size. The choice of VLT 2 was made due to its alignment with the 2500 English words requirements after high school graduation based on English Curriculum Standards for Senior High School as well as the admission level of more than 2000 receptive vocabulary for English majors at colleges and universities. The 5000-word level is used in case some students achieve the highest level of 4500 words by the time they graduate from high school.

The Easy Level of WPLT designed by Webb & Sasao (2013), was adopted to measure students' vocabulary knowledge of English word parts. One reason for choosing the WPLT is that major word formation like derivation and compounding are included in both English Curriculum Standards for Compulsory Education (Ministry of Education of the People's Republic of China, 2022) and English Curriculum Standards for Senior High School (Ministry of Education of the People's Republic of China, 2017), which means it fits students' vocabulary

development. The other reason is that it is a valid and reliable tool to assess English affix knowledge (Sasao & Webb, 2017; Webb & Sasao, 2013).

The interview in this paper consists of three parts: personal information, students' vocabulary learning difficulties and needs. For validity, it was checked for the IOC by 3 experts in English teaching field. The mean of the whole set was 1 and the IOC was 1. In reliability, all the questions were asked in Chinese for students' maximum knowledge and the subject's informed consent was obtained.

Procedures

Participants' VLB, VLS, vocabulary size, depth, learning difficulties and needs, were measured by using the VLS questionnaire, VLT2, WPLT (Easy) and a semi-structured interview. The investigation was administered during regular class time, starting with the VLQ for half an hour, followed by VLT2 for 25 minutes and WPLT for 20 minutes, and ending with the interview for about 1 hour.

Data analysis

Hyper Research 4.5.2 was used to analyse key words of qualitative data, and for quantitative data, students' strategy uses were interpreted based on Oxford's rating scale of usage frequency (1990, p.300) in Table 3, SPSS 26 was used for descriptive analysis.

Table 3 Oxford's rating scale of strategy usage frequencies

Usage Frequency	Range of mean	Description
High Frequency	4.5-5.0	Always used
Medium-high frequency	3.5-4.4	Frequently used
Medium	2.5-3.4	Sometimes used
Lower midrange	1.5-2.4	Mostly not used
Low	1.0-1.4	Never used

Source: Oxford (1990: 300)

Research Results

Following the research objective, the results were presented below:

1.Vocabulary Learning Beliefs (VLB)

Table 4. Results of students' VLB in the pre-test

	Memorization	Context	Study	Interaction	Affection	Mother-tongue	APPs
N Valid	45	45	45	45	45	45	45
Median	5.00	4.00	4.00	3.00	4.00	3.00	3.00
Mode	5	4	3	3	4	3	3

As shown in Table 4, both a median and mode of 5 indicated at least 50% of the participants firmly believed that vocabulary should be memorized, which was the most widely accepted belief. A median and mode of 4 meant that at least 50% of them agreed that vocabulary should be acquired in context and through positive affective reinforcement.

Followed by was the belief that vocabulary should be studied and used. The least accepted beliefs were that vocabulary should be learned through interacting with other people, through mother-tongue, and through vocabulary APPs.

2. Vocabulary Learning Strategies

Table 5 Results of first-level categories of VLSs in the pre-test

First-level of VLS	**Mean**	**S. D.**	**Frequency**
Metacognitive strategies	3.289	.465	Medium
Mother-tongue strategies	3.259	.568	Medium
Using vocabulary APPs strategies	3.222	1.0119	Medium
Affective strategies	3.009	.583	Medium
Cognitive strategies	2.913	.486	Medium
Social strategies	1.956	.603	Lower midrange

Based on Oxford's rating scale of strategy usage frequencies, Table 5 showed that among first-level categories, metacognitive strategies, mother-tongue strategies, vocabulary APPs strategies, affective strategies, and cognitive strategies were sometimes used, while social strategies were mostly not used.

It is interesting that among the sometimes-used-strategies, the employment of mother-tongue strategies rated second, which goes against the students' least belief that they should learn vocabulary through their mother tongue. This disparity implies that students frequently rely on their mother tongue in practice even though they are against using it to acquire English vocabulary in mind. Using vocabulary APPs strategies came in third place. Despite the fact that students frequently use these apps, this data suggests that they do not think of them as especially helpful for vocabulary learning, when compared to their lowest-ranked belief in the usefulness of vocabulary apps. Affective strategies, which came fourth, lagged behind students' second-ranked belief in learning vocabulary through positive affective reinforcement. This shows that even when students understand the value of positive affective reinforcement, they do not practice applying affective strategies sufficiently in practice. In contrast to their top-ranked belief that vocabulary should be memorized, learned in context, studied and used, cognitive strategies were rated fifth. This suggests that although students think cognitive strategies work best, they don't use them as much as they could. Social strategies were the least used, coming in last with a mean value of 1.956, almost consistent with their fourth-ranked belief that vocabulary should be acquired through social interaction. This shows that students don't regularly use social strategies or have a strong belief in the value of social engagement for vocabulary learning.

Table 6 Results of second-level categories of VLSs in the pre-test

Second-level of VLS	**Mean**	**S. D.**	**Frequency**
Dictionary strategies	3.467	.547	Medium-high
Contextual guessing	3.456	.5802	Medium-high
Rehearsal strategies	3.19	.600	Medium
Note-taking strategies	3.14	.726	Medium
Encoding strategies	2.623	.552	Medium

Table 6 revealed that in the second-level categories, dictionary strategies with the mean value of 3.467 and contextual guessing with the mean value of 3.456 were frequently used, while rehearsal strategies with the mean value of 3.19, note-taking strategies with the mean value of 3.14, and encoding strategies with the mean value of 2.623, were sometimes used.

Table 7 Results of third-level categories of VLSs in the pre-test

Vocabulary Learning Strategies	**Mean**	**S. D.**	**Frequency**
Dictionary strategies for comprehension	3.7556	.85362	Medium-high
Depend on using mother-tongue	3.607	1.104	Medium-high
Self-plan	3.58	.965	Medium-high
Self-initiation	3.556	.7621	Medium-high
Oral repetition	3.526	.830	Medium-high
Wider context	3.493	.6750	Medium-high
Extended dictionary strategies	3.431	.7273	Medium
Immediate context	3.418	.6012	Medium
Meaning-oriented note-taking	3.2778	.80167	Medium
Looking-up strategies	3.271	.5895	Medium
Selective attention	3.2	.8285	Medium
Use of word lists	3.16	.683	Medium
Use of word-structure	3.089	.805	Medium
Review & test	3.0611	.65313	Medium
Usage-oriented note-taking	3.011	.810	Medium
Avoid using mother-tongue	2.911	.886	Medium
Visual repetition	2.904	.837	Medium
Auditory encoding	2.77	.926	Medium
Association	2.6444	.81966	Medium
Contextual encoding	2.526	.726	Medium
Activation strategies	2.476	.8413	Medium
Visual encoding	2.4333	.71390	Lower midrange
Semantic encoding	2.333	.7317	Lower midrange
Strategies for finding a new word meaning	2.222	.7177	Lower midrange
Strategies for consolidating a learnt word	1.689	.621	Lower midrange

Table 7 indicated that for the third-level categories, dictionary strategies for comprehension, dependence on using the mother-tongue, self-plan, self-initiation, oral repetition, and wider context, with the mean value ranging from 3.5 to 4.4, were frequently used. In contrast, visual encoding, semantic encoding, strategies for discovering the new word meaning, and strategies for consolidating a learnt word were mostly not used, since the mean values were from 1.5 to 2.4. Other strategies from extended dictionary strategies to activation strategies were sometimes used by students because their mean values varied from 2.5 to 3.4.

On the whole, students were medium strategies learners or users since their use of most strategies ranged from 2.5 to 3.4.

3. Vocabulary size

Table 8 Results of students' vocabulary size in the pre-test

Vocabulary level	N	Min	Max	Mean	S. D.	Total	Percentage
2000-word level	45	14	29	24.22	3.476	30	80.73%
3000-word level	45	8	26	18.16	4.327	30	60.53%
5000-word level	45	0	17	6.78	3.680	30	22.6%
Valid N (listwise)	45						

Table 8 indicated that students' performance was relatively more consistent at 2000-word level, followed by their performance at 5000-word level and 3000-word level. They recognized 80.73% of words at 2000-word level, 60.53% of words at 3000-word level and only 22.6% of words at 5000-word level. This revealed a gap between their actual vocabulary stock and the basic requirement of 2400-2500 words, let alone the highest requirement of level 9, which was 4500 words, stipulated in English Curriculum Standards for Senior High School (2017), and the admission level of 2000 receptive vocabulary in Teaching Syllabus for University English Majors (2000), indicating a need to enlarge their vocabulary.

4. Vocabulary depth

Table 9 Results of students' vocabulary depth

WPLT (Easy)	N	Min	Max	Mean	S. D.	Total	Percentage
Form Section	45	14	38	30.53	4.751	40	76.33%
Meaning Section	45	20	33	26.13	2.889	34	76.85%
Use Section	45	9	13	11.44	1.253	13	88%
Valid N (listwise)	45						

Table 9 revealed that students' knowledge in Form Section was the most heterogeneous, followed by their performance in Meaning Section, and in Use Section, which meant in Use Section, most students had a good knowledge of word class of affixes, and their differences were the least. It showed that at the Easy Level, students knew 76.33% affixes in Form Section, 76.85% affix in Meaning Section, and 88% grammatical categories of affixes in Use Section. The results suggested that, in contrast to their understanding of grammatical categories, students' knowledge of affix forms and meanings needed to be improved.

5.Vocabulary learning difficulties and needs

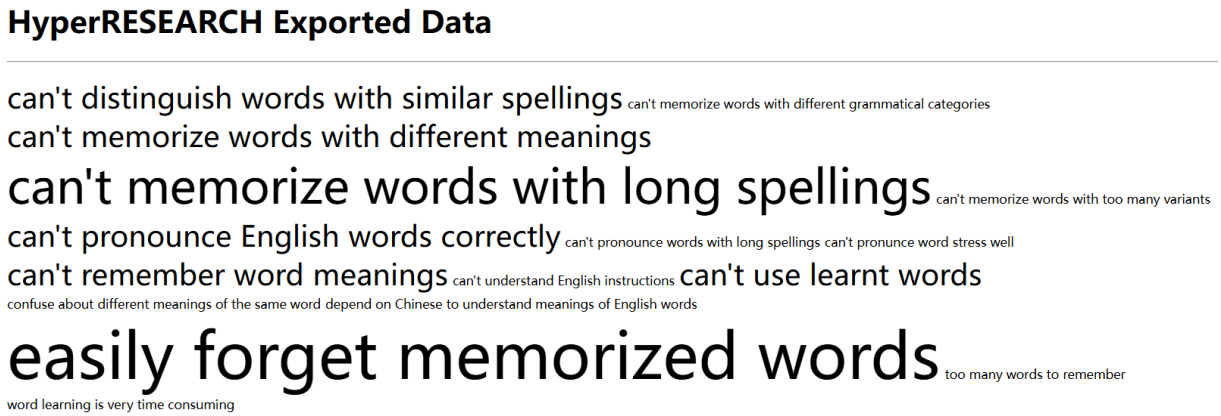

Figure 1. Results of students' difficulties in learning vocabulary

Figure 1 showed that students' top three challenge was frequently forgetting memorized words, difficulty in recalling words with long spellings, followed by trouble in differentiating between words with similar spellings, memorizing words with different meanings, pronouncing English words correctly, remembering word meanings, and using learned words.

Vocabulary learning needs

The results were seen in Figure 2:

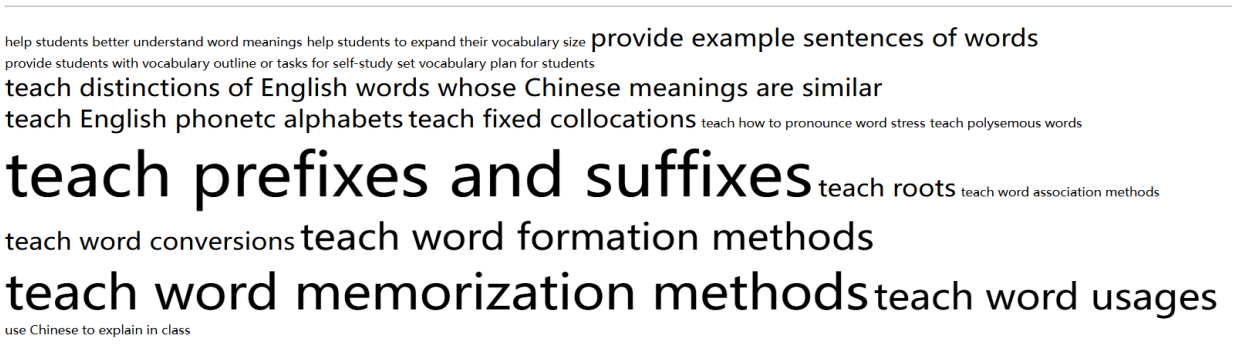

Figure. 2 Results of students' needs in vocabulary learning

Figure 2 revealed what students needed most was instruction on prefixes and suffixes, followed by guidance on word memorization methods, word formation methods and word usage.

Discussion

What are the challenges in English vocabulary learning for Chinese EFL learners?

The answer to this question can be discussed into 4 aspects:

First, in terms of VLB, the targeted Chinese EFL learners think vocabulary are difficult to learn and most believe in memorization for vocabulary learning. This result is consistent to Zhang (2013), who noted that many Chinese EFL learners view vocabulary learning as a challenging task, particularly due to the extensive words in English and differences in language structures between English and Chinese. This result is also in line with Fu (2021) and Li (2004)'s findings that Chinese EFL learners have a preference of rote learning in vocabulary. However, this belief is different from Hadi and Guo (2020)'s findings which showed that Afghan EFL learners preferred learning words through contextual use rather than memorization.

In terms of VLS, the findings are consistent to Rahmani (2023), Wang (2022), Fu (2021) and Hadi & Guo (2020) who reveal that students frequently use dictionary and contextual guessing strategies. Aligning with Ibrahim and Alshami (2022), social strategies are the least used by students. Next, the results also support the findings of Gu and Johnson (1996), who observed that Chinese EFL learners often underuse useful strategies like context clues and mnemonic devices. Furthermore, it confirms Zhang (2013)'s findings that some Chinese students rely heavily on translating words between Chinese and English, which may impede their ability to think and communicate directly in English. In addition, in line with Yutthapoom & Worawoot (2023) and Rabadi (2016), EFL students are viewed as "medium" strategy users in general. However, this result is different from Rahmani (2023) who finds most participants use activation strategy, and also different from Wang (2022) who finds social/affective strategies most popular among students.

Second, with regards to vocabulary size, the current Chinese EFL students' vocabulary stock is not up to match with the 2,400–2,500word requirements of level 7 in the English Curriculum Standards for Senior High School (2017) and the 2,000 receptive vocabulary words required for admission in the Teaching Syllabus for University English Majors (2000). This result aligns with Juan and Xiang (2019) who find the breadth of vocabulary knowledge acquired by Chinese learners at every learning stage is inadequate and does not align with the requirements of the appropriate English teaching syllabus. The result also accords with Laufer and Ravenhorst-Kalovski (2010) and with Zhang (2009).

Third, in terms of vocabulary depth, these results confirm the findings of Kuo and Anderson (2006), who observed that systematic vocabulary expansion may be hampered by Chinese EFL learners' inability to identify and comprehend morphological patterns such prefixes, suffixes, and root words.

Last, in terms of vocabulary learning difficulties, these results are consistent with those of Rosyada-AS and Apoko (2023), who noted difficulties in students' ability to effectively retain or memorize vocabulary, use word meanings appropriately, spell words correctly and pronounce new words correctly.

Conclusion and Recommendation

This study investigated vocabulary learning challenges faced by Chinese first-year English majors in an ethnic minority college, focusing on VLB, VLS, vocabulary breadth, depth, vocabulary learning difficulties and needs. The results revealed that in VLB, students strongly believed in memorization and least believed in social interaction, using mother-tongue and using vocabulary APPs to learn vocabulary. In VLS, students were medium strategy users, frequently using dictionary strategies for comprehension, dependence on using mother-tongue, oral repetition, self-plan, wider context, but rarely employing visual encoding, semantic encoding, and social strategies mostly not used. In vocabulary breadth, their vocabulary size was not enough to meet the curriculum and syllabus requirement. In vocabulary depth, they need improvement in comprehending affix form and affix meaning. The top three vocabulary learning challenges included forgetting previously learned words, having difficulty remembering long spellings, and having trouble pronouncing words correctly. About their vocabulary learning needs, most of them expected their teachers to instruct them prefixes and suffixes, word memorization approaches, word usage, and word formation methods.

A thorough investigation of vocabulary learning challenges can help teachers better understand students' vocabulary learning needs and offer targeted guidance accordingly. For those who are interested in studying VLB and VLS, it is recommended to examine the VLB and VLS of their students from various dimensions such as metacognitive, cognitive, affective, social, mother-tongue and vocabulary APP strategies, so that language instructors can improve effective vocabulary teaching techniques and curriculum designers can provide learners with preferable vocabulary learning strategies. Future research should also consider a bigger sample size from broader scope of more than one ethnic college or university in southeast areas to see if it yields the same results.

References

Afifah, T. (2021). *THE CORRELATION BETWEEN STUDENTS'VOCABULARY LEARNING STRATEGIES AND THEIR KNOWLEDGE OF AFFIXES AT MTsN 1 BENGKALIS* (Doctoral dissertation, UNIVERSITAS ISLAM NEGERI SULTAN SYARIF KASIM RIAU).

Ahrabi Fakhr, M., Borzabadi Farahani, D., & Khomeijani Farahani, A. A. (2021). Incidental vocabulary learning and retention from audiovisual input and factors affecting them. *English Teaching & Learning*, 45 (2), 167-188. https://doi.org/10.1007/s42321-020-00066-y

Ajisoko, P. (2020). The use of Duolingo apps to improve English vocabulary learning. *International Journal of Emerging Technologies in Learning* (iJET), 15 (7), pp.149-155. https://doi.org/10.3991/ijet.v15i07.13229

Calculator. net. (2024). Sample size calculator. *Online.* Retrieved from http://www.calculator.net/sample-size-calculator.html

Chen, J. S. (2009). *Study of Dispelling "Fossilization" in English Vocabulary Teaching on the analysis of Langacker's Grammar*. Doctoral Dissertation. Chongqing: Southwest University, 6, 49-50.

English Group of the Teaching Guiding Committee for College Foreign Language Majors. (2000). *Teaching Syllabus for English Majors in Colleges and Universities*. Beijing: Foreign Language Teaching and Research Press, 20.

Fu, S. (2021). Chinese EFL University Students' Self-Reported Use of Vocabulary Learning Strategies. *English Language Teaching*, 14 (12), 117-125. https://doi.org/10.5539/elt.v14n12p117

Gay, L. R. & Diehl, P. L. (1992). Research Methods for Business and Management. Interpersonal Computing and Technology: An electronic Journal for the 21st Century. *Online.* Retrieved from http://www.emoderators.com/ipct-j/1998/n3-4/hill.hmtl

Gu, P. Y. (2019). Strategies for learning vocabulary. In *The Routledge handbook of vocabulary studies* (pp. 271-287). Routledge. https://doi.org/10.4324/9780429291586-18

Gu, Y. (1994). Vocabulary learning strategies of good and poor Chinese EFL learners. *In: N. Bird, P. Falvey, A. Tsui, D. Allison and A. Mc Neill (Eds.), Language Learning*. Hong Kong: Government Printers. https://doi.org/10.26686/wgtn.13315667

Gu, Y., & Johnson, R. K. (1996). Vocabulary learning strategies and language learning outcomes. *Language learning*, *46* (4), 643-679. https://doi.org/10.1111/j.1467-1770.1996.tb01355.x

Hadi, H. U. R., & Guo, X. (2020). A survey of beliefs and vocabulary learning strategies adopted by EFL learners at Shaikh Zayed University. *Cogent Education*, *7* (1), 1829803. https://doi.org/10.1080/2331186x.2020.1829803

He, Y. (2014). A Study of the relationship between Vocabulary Learning Strategies and Active Vocabulary in English Majors. *Journal of Chengdu Normal University*, 62-67.

Ibrahim, A., & Alshami, H. (2022). Vocabulary learning strategies frequently used by Sudanese EFL learners at the tertiary level to strengthen their vocabulary knowledge. *Journal of English Language Teaching and Applied Linguistics*, *4* (1), 37-43. https://doi.org/10.32996/jeltal.2022.4.1.4

Juan, L., & Xiang, L. (2019). Measuring Breadth and Depth of Vocabulary Knowledge of Chinese EFL Learners at Different Learning Stages. *International Journal of Language and Linguistics.* https://doi.org/10.11648/j.ijll.20190704.14

Junaid, M., Syam, U. K., & Hambali, U. (2023). The Implementation of Vocabulary Learning Strategies In Students Vocabulary Size. *English Language Teaching Methodology*, *3* (1), 38-51. https://doi.org/10.56983/eltm.v3i1.193

Kuang, F. T. (2010). *A Categorization-Based Vocabulary Teaching Instruction for English Majors in China*. Doctoral Dissertation. Chongqing: Southwest University, pp.7.

Kuo, L. J., & Anderson, R. C. (2006). Morphological awareness and learning to read: A cross-language perspective. *Educational Psychologist*, 41 (3), 161-180. https://doi.org/10.1207/s15326985ep4103_3

Laufer, B., & Ravenhorst-Kalovski, G. C. (2010). Lexical threshold revisited: Lexical text coverage, learners' vocabulary size and reading comprehension. *Reading in a Foreign Language*, 22 (1), 15-30.

Li, S. (2010). *Vocabulary learning beliefs, strategies and language learning outcomes: A study of Chinese learners of English in higher vocational education* (Doctoral dissertation, Auckland University of Technology).

Li, X. (2004). *An analysis of Chinese EFL learners' beliefs about the role of rote learning in vocabulary learning strategies* (Doctoral dissertation, University of Sunderland).

Ma, R. X. (2012). Vocabulary Proficiency Instruction for Chinese EFL Learners. *Theory and Practice in Language Studies*, Vol. 2, No. 6, pp. 1199-1205. https://doi.org/10.4304/tpls.2.6.1199-1205

Meara, P. (1996). The dimensions of lexical competence. *Performance and competence in second language acquisition*, *35*, 33-55.

Meara, P. (1996). The third dimension of vocabulary knowledge. In *11th AILA World Congress, Jyvaskyla, Finland*.

Michael E. Agnes. (2009). *Webster's New World College Dictionary*. (Fourth Edition) Webster's New World.

Ministry of Education of the People's Republic of China. (2022, P.139-140). *English Curriculum Standards for Compulsory Education*. Beijing: Beijing Normal University Publishing Group.

Ministry of Education of the People's Republic of China. *English Curriculum Standards for Senior High School* (2017, P. 180). People's education press.

Mohammed, A. K. (2023). Vocabulary Learning Strategies Vis-a-Vis Vocabulary Teaching Strategies. *Journal of Languages and Language Teaching*, *11* (3), 447-460. https://doi.org/10.33394/jollt.v11i3.7656

Nation, P., & Waring, R. (1997). Vocabulary size, text coverage and word lists. *Vocabulary: Description, acquisition and pedagogy*, *14* (1), 6-19.

Noprianto, E., & Purnawarman, P. (2019). EFL students' vocabulary learning strategies and their affixes knowledge. *Journal of Language and Linguistic Studies*, *15* (1), 262-275. https://doi.org/10.17263/jlls.547730

O' Malley, J.M. & Chamot, A.U. (1990). *Learning Strategies in Second Language Acquisition*. Cambridge: Cambridge University Press.

Oxford, R. L. (1990). *Language Learning Strategies: What Every Teacher Should Know*. Newbury House Publishers: New York, pp. 37, 151.

Paiman, N., Yap, N. T., & Chan, M. Y. (2015). Effectiveness of morphemic analysis of Graeco-Latin word parts as a vocabulary learning strategy among ESL learners. *3L, Language, Linguistics, Literature*, *21* (2). https://doi.org/10.17576/3l-2015-2102-03

Qian, D. D. (2002). Investigating the relationship between vocabulary knowledge and academic reading performance: An assessment perspective. *Language Learning*, 52 (3), 513-536. https://doi.org/10.1111/1467-9922.00193

Rabadi, R. I. (2016). Vocabulary learning strategies employed by undergraduate EFL Jordanian students. *English Language and Literature Studies*, 6 (1), 47-58. https://dx.doi.org/ 10.24093/awej/vol10no3.4

Rahmatika, A., Pertiwi, D., Karmala, E. T., & Nastiti, I. A. (2017). Exploring EFL learners' vocabulary learning strategies. *In 1st English Language and Literature International Conference* (ELLiC) (pp. 40-45).

Rahmani, S. (2023). Vocabulary learning beliefs and strategies of Afghan EFL undergraduate learners. *CogentEducation*, *10* (1), 2194227. https://doi.org/10.1080/2331186x.2023. 2194227

Richards, J. C. (1976). The role of vocabulary teaching. *TESOL quarterly*, 77-89. https://doi.org/10.2307/3585941

Rosyada-AS, A., & Apoko, T. W. (2023). Investigating English vocabulary difficulties and its learning strategies of lower secondary school students. *Journal of Languages and Language Teaching*, *11* (3), 489-501. https://doi.org/10.33394/jollt.v11i3.8404

Rovinelli, R. J.; & Hambleton, R. K. (1976). On the Use of Content Specialists in the Assessment of Criterion-Referenced Test Item Validity. *Online.* Retrieved from https://files.eric.ed.gov/fulltext/ED121845.pdf

Rubin, J. & Thompson, I. (1994). *How to be a successful language learner* (2nd Ed.). Heinle& Heinle: Boston.

Sasao, Y., & Webb, S. (2017). The word part levels test. *Language Teaching Research, 21* (1), 12-30. https://doi.org/10.1177/1362168815586083

Schmitt, N. (2010). *Researching Vocabulary: A Vocabulary Research Manual*. Basingstoke: Palgrave Macmillan.

Schmitt, N. (1997). *Vocabulary Learning Strategies*. In Schmitt, N., and McCarthy, M. Vocabulary: Description, Acquisition and Pedagogy. Cambridge: Cambridge University Press, 199-227.

Schmitt, N., Schmitt, D., & Clapham, C. (2001). Developing and exploring the behaviour of two new versions of the Vocabulary Levels Test. *Language testing*, 18 (1), 55-88. https://doi.org/10.1177/026553220101800103

Stat-U. (2020). How do we assess reliability and validity? U of Miami https://sites.education.miami.edu/statsu/2020/09/27/how-do-we-assess-reliability-and-validity/

Sukamolson, S. & Sonthi, S. (2021). Calculating IOC Index Program. *Online.* Retrieved from https://drive.google.com/open?id=1KgFvdtg-2qGaKQuG0gsxFf8OHfGSlsW9

Sukying, A. P. I. S. A. K. (2018). Investigating receptive and productive affix knowledge in EFL learners. *Explorations in second language vocabulary research*, 183-218.

Taie, M. (2015). Critical thinking and discovering the meaning of unfamiliar terms through the word part analysis strategy: A study of Iranian medical students. *English for Specific Purposes, 40*, 1-10. https://doi.org/10.1016/j.esp.2015.05.001

Turner, R. C., & Carlson, L. (2003). Indexes of item-objective congruence for multidimensional items. *International journal of testing, 3* (2), 163-171. https: //doi. org /10.1207/s15327574ijt0302_5

Wang, C. (2022). Exploring Vocabulary Learning Strategies for English Majors in the New Era and Analysis of Its Causes. *Modern English*, (20), 119-122.

Wang, C. (2022). A Study on the Correlation Between English Vocabulary Learning Strategies and Breadth of Vocabulary Knowledge on Elementary Chinese English Learners. *International Journal of Education and Humanities, 4* (3), 1-5. https://doi.org/10.54097/ijeh.v4i3.1641

Webb, S. A., & Sasao, Y. (2013). New directions in vocabulary testing. *RELC Journal, 44* (3), 263-277. https://doi.org/10.1177/0033688213500582

Wen, Q. F. (1996). *English Learning Strategies*. Shanghai: Shanghai Foreign Language Education Press.

Wen, Q. F. & Wang, L. F. (2004). *Theoretical Research on English Learning Strategies*. Shaanxi Normal University Press: Shaanxi.

Wei, W. (2023). Understanding and supporting the use of feedback from mobile applications in the learning of vocabulary among young adolescent learners. *Studies in Educational Evaluation*, 78, 101264. https://doi.org/10.1016/j.stueduc.2023.101264

Wei, Z. (2015). Does teaching mnemonics for vocabulary learning make a difference? Putting the keyword method and the word part technique to the test. *Language Teaching Research*, *19*(1), 43-69. https://doi.org/10.1177/1362168814541734

Wilkins, D. A. (1972). *Linguistics in language teaching* (Vol. 111). London: Edward Arnold. https://doi.org/10.1017/S0025100300000372

Wu, X. & Wang, Q. (1998). Vocabulary Learning Strategies for Non-English Majors. *Foreign Language Teaching and Research*, (1), 53-57.

Xu, S. C. (2008). *A study of English Vocabulary Learning Strategies by Ethnic Minority Students in Xinjiang*. Master Dissertation. Jiangsu: Suzhou University.

Yutthapoom, K., & Worawoot, T. (2023). A study of English language learning strategies of undergraduate students of Faculty of Interdisciplinary Studies at Khon Kaen University. *วารสาร วิชาการ มหาวิทยาลัยราชภัฏอุดรธานี, 11* (1), 1-18.

Zhang, B. (2009). FL Vocabulary Learning of Undergraduate English Majors in Western China: Perspective, Strategy Use and Vocabulary Size. *English Language Teaching*, *2* (3), 178-185. https://doi.org/10.5539/elt.v2n3p178

Zhang, L. J., & Wu, A. M. (2009). Chinese learners' use of strategies for the Test of English as a Foreign Language: A re-examination. *Language Testing*, 26 (2), 237-266.

Zhang, P. (2022, December). A comparative research on the effectiveness of two mobile applications for vocabulary learning: BaiCiZhan and Bubeidanci. In *Third International Conference on Computer Science and Communication Technology (ICCSCT 2022)* (Vol. 12506, pp. 1217-1221). SPIE. https://doi.org/10.1117/12.2662179

Zhang, X., & Lu, X. (2015). The relationship between vocabulary learning strategies and breadth and depth of vocabulary knowledge. *The Modern Language Journal*, 99 (4), 740-753. https://doi.org/10.1111/modl.12277

Zhang, Y. (2013). Chinese English Learners' Beliefs about Vocabulary Learning and the Effects of Beliefs on Strategy Use. *Asian EFL Journal*, 15 (4), 105-124.

Zheng, W., & Nation, P. (2013). The word part technique: A very useful vocabulary teaching technique. *Modern English Teacher*, *22* (1), 12-16. https://doi.org/10.26686/wgtn.12543452