Awareness and Perceptions of Vocabulary Learning Strategies among Thai EFL Pre-Service Teachers

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Abstract

This research explores the awareness and the perceptions towards vocabulary learning strategies (VLS) of undergraduates from the Faculty of Education in a Thai university. All 300 participating students from 12 academic majors completed a questionnaire featuring Likert-scale items based on Schmitt's (1997) taxonomy of VLS, covering cognitive, memory, and metacognitive strategies, alongside open-ended questions. The participants demonstrated favorable overall perceptions of VLS (M = 3.88) and a moderate to high level of awareness (M = 3.65). An independent samples t-test revealed that language majors reported significantly greater awareness than non-language majors ($p < 0.01$), while perceptions remained consistent across both groups. Students' qualitative responses complemented the findings, stating a need for more explicit teaching in addition to describing the benefits and challenges. The study's findings suggest a need to incorporate explicit VLS instruction not only in language courses but also within content-focused subjects across the curriculum. This approach may help foster greater learner autonomy and address the observed gap between students' positive perceptions and their practical application of these crucial skills.

Keywords: vocabulary strategies, awareness, perceptions, EFL learners, educational majors

Introduction

In the context of learning a second language, especially in EFL (English as Foreign Language), vocabulary acquisition is of noteworthy importance. Without a rich vocabulary, a learner will not be able to progress in their reading, writing, listening, and speaking skills since they wouldn't be able to understand or articulate ideas in the context of academics or in real life (Nation, 2001). This is especially important at a university level where students need to engage with academic texts and participate in English instruction or assessments.

The learning of vocabulary is important not only in academics but also in day-to-day conversation and communication. Unfortunately, a lot of university students struggle when it comes to learning vocabulary. Some challenges include an inability to memorize new words, lack of exposure for practical utilization, and no awareness of effective strategies for employing and retaining the vocabulary. These concerns make it important to find out how college students interact with Vocabulary Learning Strategies (VLS), which are defined by Schmitt (2008) and Bai (2018) as systematic approaches used by learners to make the acquisition, retention, and recall of vocabulary more efficient.

Vocabulary Learning Strategies (VLS) encompass a wide array of methods, ranging from traditional techniques like repetitive review with flashcards to modern approaches involving digital tools, multimedia resources, and peer collaboration (Nation, 2001; Bai, 2018). However, the effectiveness of any strategy is not inherent to the method itself but is significantly influenced by the learner's internal factors. As Schmitt (2008) argues, a learner's awareness of a strategy and their perception of its value are critical. For the purpose of this study, awareness refers to the extent to which learners recognize various strategies, while perceptions are defined as their beliefs and attitudes regarding the effectiveness of those strategies. Without a positive attitude and a clear understanding of how and when to apply these strategies, even the most effective tools may be underutilized or misapplied, hindering the ultimate goal of vocabulary acquisition.

While vocabulary learning is crucial for all university students, it holds a unique and critical significance for pre-service teachers. This specific cohort represents a high-stakes demographic, as their own vocabulary learning strategies, awareness, and pedagogical beliefs will directly shape the learning experiences of their future students across the nation. Understanding their internal processes is therefore not merely an academic exercise but a vital step toward improving the quality of language instruction from the ground up. In light

of this critical role, the current study seeks to explore the awareness and perceptions of vocabulary learning strategies among these undergraduate students in teacher education. Specifically, this study aims to answer the following research questions:

1. To what extent are pre-service teachers aware of different vocabulary learning strategies?
2. How do they perceive the usefulness of these strategies?
3. Are there significant differences in awareness and perceptions based on academic specialization (language vs. non-language majors)?

Literature Review

This review is divided into four sections. The first describes the framework and the classification of vocabulary learning strategies. The second analyzes learners' awareness and perceptions towards these strategies. The third looks into the contextual influences such as affective factors and the role of technology on strategy use. The last section examines cultural and disciplinary perspectives with emphasis on Thai and other EFL research. Collectively, these strands explain the rationale for investigating VLS among Thai university students across different educational disciplines.

1. Theoretical Framework and Typology of Vocabulary Learning Strategies

In the learning of any language, vocabulary occupies a central position. In the absence of an adequate amount of vocabulary, learners find it hard to achieve fluency in speech, comprehension in reading, and expression in writing. In an EFL context like Thailand where learners often have little exposure to English, Vocabulary Learning Strategies (VLS) serve as crucial aids to accumulate and retain lexical knowledge (Nation, 2001; Bai, 2018).

VLS refers to systematic approaches that allow learners to comprehend, memorize, retrieve, and use vocabulary, giving them autonomy over their learning process (Schmitt, 2008). While several VLS frameworks exist, this study adopts the widely recognized typology proposed by Schmitt (1997), a framework that remains central to the field of vocabulary research (e.g., Nation, 2005), as its primary theoretical framework. This model is selected for its comprehensive and structured nature, providing a clear lens for classifying the diverse strategies relevant to the university context.

Schmitt's framework organizes these strategies into five key domains. It begins with discovery strategies, which learners use to determine a word's meaning, such as guessing from context. The framework also includes social strategies that involve interaction, like asking others for help. To retain information, learners employ memory strategies, for instance, using mental imagery. Additionally, there are cognitive strategies, which are mechanical techniques like repetition or note-taking, and lastly, metacognitive strategies, which focus on managing the learning process itself, such as setting learning goals.

This classification offers educators a practical means to tailor instructional design for more effective vocabulary acquisition; for example, by identifying that students rely heavily on memory strategies, instructors can introduce more sophisticated cognitive and metacognitive strategies suitable for academic texts.

2. Operationalizing Key Constructs: Awareness and Perceptions

To fully appreciate the complexities of strategy selection in language learning, it is crucial to move beyond a monolithic view and instead delineate the distinct yet interdependent roles of learner awareness and perceptions. 'Awareness', in this context, is conceptualized as the foundational cognitive layer—the extent to which learners can recognize and comprehend the existence, purpose, and potential application of various Vocabulary Learning Strategies (VLS). This level of cognizance functions as an essential "gateway" to strategic action; as Lai (2005) posits, without this initial awareness, purposeful and effective strategy deployment is unlikely to occur.

Building upon this cognitive foundation is the evaluative layer of 'perceptions', which encompasses the rich tapestry of a learner's beliefs, attitudes, and affective responses toward the utility and value of these strategies. These perceptions are not formed in a vacuum but are dynamically shaped by prior learning experiences. Positive perceptions, which manifest as a belief in a strategy's effectiveness and a feeling of comfort or even enjoyment in its use, are often the product of past successes and sufficient pedagogical guidance, thereby fostering consistent application (Shen, 2003). Conversely, negative perceptions, which may arise from a sense of tedium, perceived inefficiency, or previous failure, can erect significant psychological barriers that lead to strategic avoidance, regardless of a strategy's objective potential (Mehrabian & Salehi, 2019). Therefore, it is the intricate interplay between what a learner *knows* (awareness) and how they *feel* about what they

know (perceptions) that collectively forms the cognitive-affective framework governing their ultimate strategic behavior.

3. Factors Influencing VLS Choice

The selection and application of Vocabulary Learning Strategies (VLS) are not uniform across all learners but are mediated by a complex interplay of individual and contextual factors. A primary variable is the learner's academic specialization, as disciplinary cultures often cultivate distinct learning habits. For instance, students in language-oriented fields tend to employ a broader, more sophisticated repertoire of strategies compared to their peers in non-language disciplines like science or mathematics, who may rely on a more limited set of techniques (Ghazal, 2007). This strategic profile may further evolve with the learner's year of study and experience; it is often hypothesized that senior students, possessing greater academic maturity, may adopt more metacognitively-oriented strategies than their junior counterparts. While less definitive, some research also points to potential gender-based differences in strategic preferences. These individual variables do not exist in isolation but interact with crucial contextual factors. The integration of technology, for example, can significantly enhance motivation and retention (Ghalebi et al., 2020), while the learner's affective state—including motivation and anxiety—can either facilitate or inhibit the use of certain strategies, particularly those requiring social interaction (Wahyudin et al., 2021). Ultimately, the interplay of these personal, disciplinary, and environmental factors shapes not only a learner's strategic profile but also their overall capacity for learner autonomy—the ability to take independent control of their own learning (Oxford, 2011). This ability to self-regulate is a critical factor in achieving effective, lifelong vocabulary acquisition.

4. The Research Gap in the Thai Context and Rationale for the Study

An academic area that is emerging but has not been studied in detail is that of academic specialization and its impact on vocabulary acquisition. Brown and Concannon (2016) inform us that students from language-oriented fields such as English and linguistics are more likely to employ a variety of vocabulary learning strategies than their peers in non-language disciplines such as mathematics, science, or the arts. Strategic behavior, or how strategies are applied, is shaped by academic culture, as noted by Sahbazian (2004),

who remarked that learners' fields of study determine their English exposure and preference to particular strategies.

While the importance of VLS is globally acknowledged, a comprehensive review of the literature reveals the field remains underdeveloped, particularly concerning the unique and critical demographic of pre-service teachers from diverse, non-language specializations. Research on VLS within the Thai context has provided valuable insights, often highlighting that university students tend to default to traditional strategies like rote memorization and translation (Saengpakdeejit, 2014). Some studies have explored strategy use among students in specific non-language fields, confirming a reliance on a limited set of discovery and cognitive strategies (Jirawat, 2016). This body of work confirms the general challenges in Thai EFL learning (Khamkhien, 2010), but a significant gap remains. The literature has not yet focused specifically on the unique and critical demographic of pre-service teachers from a wide array of non-language specializations.

Therefore, it remains unclear how these future educators perceive and utilize VLS, and how their diverse disciplinary backgrounds shape these strategic choices. This lack of understanding represents a critical blind spot in teacher education research, with direct implications for the future efficacy of English language teaching in Thailand. This lack of understanding represents a critical blind spot in teacher education research, with direct implications for the future efficacy of English language teaching in Thailand. This study aims to fill this critical gap by systematically investigating the VLS landscape within this specific, diverse cohort, providing empirical insights for developing targeted pedagogical interventions that can better equip Thailand's future teachers with the strategies needed for effective, lifelong vocabulary acquisition.

Methodology

This section outlines the research design, participants, instruments, and procedures used in the study. It explains how data were collected and analyzed to address the research questions concerning students' awareness and perceptions of vocabulary learning strategies.

1. Research Design

A quantitative survey research design was used in this study to examine university students' awareness and perceptions of vocabulary learning strategies (VLS). The cross-

sectional design offered the opportunity to collect data from a more heterogeneous group of students from different academic specializations within a single time frame. Participants' responses regarding their awareness of and perceptions toward various vocabulary learning strategies were collected using a structured questionnaire.

2. Participants

The participants in this study were undergraduate students from the Faculty of Education at a public university in Thailand, representing all academic years (1st to 4th year). The faculty offers a wide range of academic programs, including English, Thai, Social Studies, Science, Mathematics, Art, Music, Physical Education, Computer Education, Early Childhood, Elementary Education, and interdisciplinary programs such as English-Mathematics.

A total of 300 students participated in the study. The sampling method used was purposive sampling. The selection criteria aimed to ensure diversity by including students from: (1) all four academic years (1st to 4th year), (2) a variety of disciplinary backgrounds (e.g., English, Science, Art, Computer Education), and (3) both defined super-groups of language-related and non-language-related majors. All participants voluntarily agreed to take part in the research.

2.1 Overview of the Participants

In total, 300 undergraduate students from the Faculty of Education participated in this investigation. From the perspective of the academic major, year level, and gender, the participants' diversity enhanced the representational inclusiveness for examining vocabulary learning strategy (VLS).

2.2 Academic Majors

Students were enrolled in 12 majors which included language-based English and Thai, as well as non-language-based fields of study such as Science, Social Studies, Music and Art. The largest two groups of respondents were from Science Education, 23.00%, and Social Studies Education, 21.33%, which shows strong content area representation. The entire distribution by academic major is presented in Table 1.

Table 1

Distribution of Participants by Academic Major

Academic Major	Frequency (n)	Percentage (%)
Non-Language-Related Majors		
Science Education	69	23.00
Social Studies Education	64	21.33
Music Education	38	12.67
Elementary Education	27	9.00
Art Education	22	7.33
Physical Education	16	5.33
Early Childhood Education	14	4.67
Computer Education	10	3.33
Mathematics Education	9	3.00
Subtotal	**269**	**89.67**
Language-Related Majors		
Thai Language Education	14	4.67
English Education	13	4.33
Mathematics-English Education	4	1.33
Subtotal	**31**	**10.33**
Total	**300**	**100.00**

2.3 Year Level

The greatest number of participants were classified as first-year students (73.33%), followed by second, third, and fourth-year students. This pattern is indicative of the level of interest and availability of students during the time the data was collected. The distribution is presented below.

Table 2

Distribution of Participants by Year Level

Year Level	Frequency (n)	Percentage (%)
Year 1	220	73.33
Year 2	54	18.00
Year 3	17	5.67
Year 4	9	3.00
Total	**300**	**100.00**

2.4 Gender

In terms of gender, female students represented the majority with 59.67%, while male students represented 39.00% and 1.33% did prefer not to identify their gender in this survey. Table 3 shows gender profile of the participants.

Table 3

Distribution of Participants by Gender

Year Level	Frequency (n)	Percentage (%)
Female	179	59.67
Male	117	39.00
Prefer not to say	4	1.33
Total	**300**	**100.00**

In this study, the participant profile illustrates greater diversity in terms of the academic majors, year levels, and gender. A significant portion of participants, particularly from the ‘Science’ and ‘Social Studies’, non-language disciplines constituted more than 40% of the sample. This and other factors added to the balanced nature of the study, enabling investigation into how students from different academic backgrounds approached vocabulary learning.

Moreover, the overwhelming majority of respondents (73.33%) first-year students suggests that they were either more accessible, or had recently taken English foundation courses during the data collection period. While these findings are particularly useful concerning early-stage learners’ strategic awareness, they do indicate the need for follow-up studies at more advanced levels.

The gender distribution, with a nearly equal split of male and female participants (59.67% women), conforms to overall patterns in Thailand’s teacher education programs. The inclusion of participants who preferred not to state their gender describes the inclusivity of the research while the findings regard its ethical sensitivity.

The comparison between language and non-language majors was conducted to investigate the influence of academic specialization on VLS awareness and perceptions. This approach is supported by existing literature (e.g., Ghazal, 2007), which suggests that disciplinary cultures can significantly shape learners' strategic choices.

3. Research Instrument

The research instrument was a structured questionnaire, written in Thai and designed specifically for this study. It consisted of four main sections:

3.1 Demographic Profile

Collecting information about major, year level, and English learning background.

3.2 Awareness of VLS

Six items assessing the level of familiarity with different strategies (e.g., repetition, multimedia, dictionary use) on a 5-point Likert scale. For example, an item might state: "I know how to use context clues to guess the meaning of an unfamiliar word."

3.3 Perceptions of VLS

Six items measuring students' perceptions toward the usefulness and application of strategies. For example, an item might state: "I believe that using flashcards is an effective way to memorize new vocabulary."

3.4 Open-ended Items

Inviting students to describe their experiences, challenges, and suggestions related to vocabulary learning

The selection of the six vocabulary learning strategies for the questionnaire was guided by the theoretical framework of Schmitt's (1997) VLS typology. Construct validity was primarily established by grounding the instrument's items in this well-validated theoretical framework and through content validation by three experts in language education. The rationale for focusing on these specific six strategies was their high relevance to the Thai university context and their frequent citation in VLS literature, allowing for a focused yet insightful investigation.

The content validity was checked by experts in language education and the instrument was tested for a sample of 20 students for clarity and consistency. The instrument achieved a Cronbach's alpha of 0.87 which indicates it has high internal consistency.

4. Data Collection

The data collection took place during the second semester of the 2024 academic calendar. The questionnaire was administered both online and in-person during particular classes with the participation of some course lecturers. The participants were briefed on the objectives of the research, their right to withdraw at any stage of the research, and their confidentiality in the research. Informed consent was taken from each respondent prior to participation.

5. Data Analysis

All the responses were analyzed in SPSS. The perceptions and awareness frequencies were summarized based on descriptive statistics: mean, standard deviation, frequency, and percentage. To evaluate differences across the academic groups, independent samples t-tests and one-way ANOVA were used. Also, awareness and perception of the variables were analyzed using correlation analysis. $p < 0.05$ level of confidence was accepted as statistically significant.

To ensure transparency in reporting, the mean scores from the 5-point Likert scale data were interpreted using the following key: a mean score from 1.00 to 2.33 was considered 'Low', 2.34 to 3.66 was 'Moderate', and 3.67 to 5.00 was 'High'. This key was applied consistently to interpret the levels of both awareness and perceptions.

The qualitative data from the open-ended items were analyzed using a multi-stage thematic analysis approach to ensure rigor (Braun & Clarke, 2006). This process was conducted by two researchers and involved: (1) familiarization with the data by reading all responses, (2) generating initial codes from recurring patterns and ideas, and (3) developing and reviewing key themes related to students' learning experiences and challenges. The researchers then discussed their findings to reach a consensus, ensuring inter-rater reliability. These themes were used to supplement and provide deeper context to the quantitative findings.

6. Ethical Considerations

This study was carried out with the ethical clearance obtained from the university's Research Ethics Committee. All subjects were informed of their right to withdraw and that they would not be able to be identified from any potentially identifying data. No identifying

details were captured from the participants and all the information was kept strictly for scholarly purposes.

Results

This section presents the findings of the study based on the data collected from the questionnaire. For the following analyses, mean scores from the 5-point Likert scale are interpreted using the key established in the methodology: 1.00-2.33 (Low), 2.34-3.66 (Moderate), and 3.67-5.00 (High).

1. Awareness of Vocabulary Learning Strategies

To answer the first research question, “To what extent are pre-service teachers aware of different vocabulary learning strategies?”, students' self-reported familiarity and understanding of six common Vocabulary Learning Strategies (VLS). Participants rated their awareness on a 5-point Likert scale, where 1 indicated no knowledge of the strategy ('Not aware at all') and 5 indicated a strong understanding of the strategy and how to use it ('Very well aware'). This aimed to measure not just recognition, but also the perceived knowledge of practical application.

The findings showed that participants’ awareness in general was moderate to high with a grand mean score of 3.65. This means that students are aware of vocabulary strategies, but the level of awareness differs among strategy types.

Subjects reported the highest degree of awareness for more traditional strategies, such as dictionaries and repetition/review because these were taught and are often used in classroom settings. On the other hand, strategies that were less familiar included categorizing words by class and employing physical or verbal associative imagery since these might demand more abstract thinking as well as creativity on the part of the learners. The descriptive results are presented in Table 4.

Table 4

Students' Awareness of Vocabulary Learning Strategies

Strategy	Mean Score	Standard Deviation
Using dictionaries	4.20	0.78
Repetition and review	4.01	0.85
Guessing word meanings from context	3.55	0.82
Using multimedia (videos, podcasts)	3.41	0.87
Grouping words into categories	3.23	0.91
Using physical or verbal associations	3.15	0.95
Overall Mean	**3.65**	**-**

The findings show that students are well aware of conventional strategies like use of a dictionary and repetition, but they are not familiar with those that involve creative restructuring, higher order thinking, or self-regulation. This highlights potential opportunities for instructional improvement, especially through the incorporation of more utilized strategies into teaching practice and pre-service teacher education.

2. Perceptions Toward Vocabulary Learning Strategies

To answer the second research question, "How do they perceive the usefulness of these strategies?", students' perceptions on the value, relevance, and utility of vocabulary learning strategies (VLS) are captured. In this section of the questionnaire, a total of six items were captured with responses given on a five-point Likert scale (1 = Strongly disagree to 5 = Strongly agree).

In general, the mean score recorded was 3.88 which shows that students have a positive perception towards VLS. Those two items which most students agreed upon suggested that students are of the opinion that VLS improves their memory and contributes meaningfully to their academic attainment. These findings highlight students' recognition of the importance of vocabulary strategies for language and academic advancement.

For the English-medium subjects, or their own academic work when applying the strategies, the scores were a bit lower. This could indicate a belief-action gap where the students understand the value of the strategies but do not use them in every learning context.

Table 5

Students' Perceptions Toward Vocabulary Learning Strategies

Perception Item	Mean Score	Standard Deviation
Strategies help me remember words	4.21	0.72
Strategies are important for academic success	4.10	0.79
I understand how to use strategies effectively	3.85	0.83
I enjoy using strategies to learn vocabulary	3.78	0.81
I feel confident using strategies in English-related subjects	3.60	0.90
I use strategies in subjects taught in English	3.45	0.88
Overall Mean	**3.88**	**-**

The perception data indicates that students especially appreciate vocabulary learning strategies that aid in memory (M = 4.21) and academic performance (M = 4.10). However, the conclusion that students may lack the ability to apply these strategies independently is drawn from the two items with the lowest mean scores: "*I feel confident using strategies in English-related subjects"* (M = 3.60) and "*I use strategies in subjects taught in English"* (M = 3.45). These specific dips in scores related to practical application and confidence suggest a potential belief-action gap, where students value the strategies but do not feel equipped to use them in specialized academic settings.

These findings suggest that students hold positive beliefs, but further structured instruction along with demonstration of the use of those strategies is essential—particularly in non-language subjects— to transform favorable feelings into active beliefs and positive behavioral habits.

3. Differences by Academic Major

In order to respond to the third research question, this part analyzes whether students' awareness and perceptions of vocabulary learning strategies (VLS) are differentiated by their academic major. For this purpose, the students were divided into two broad categories: Language-related fields of study (e.g., English, Thai, English-Mathematics) and Non-language-related fields of study (e.g., Science, Physical Education, Music, Social Studies, etc.).

The mean scores for both awareness and perception from each group were tested for statistical significance using independent samples t-tests.

Table 6

Comparison of Awareness and Perception Scores by Academic Major Group

Variable	Language Majors (n=31)	Non-Language Majors (n=269)	*t*-value	*p*-value
Awareness (M)	3.91	3.58	2.75	0.006
Perception (M)	3.92	3.87	0.58	0.564

Analysis has indicated that there is a difference in awareness scores between language-related and non-language-related majors that is statistically significant ($t(298) = 2.75$, $p < 0.01$). Students in language majors reported a greater level of VLS awareness, likely due to their greater exposure to English and more direct instruction of strategies in their courses.

However, regarding perception, no statistically significant difference was found ($p = 0.564$). This suggests that both groups held equally positive views concerning the usefulness of vocabulary strategies. This shows that while language majors are more accustomed to a wider range of strategies, all students, irrespective of discipline, recognize the importance of VLS, even if their levels of implementation differ widely.

These results further strengthen the need for VLS training in regard to language-related programs and extend the need to all disciplines as content courses require explicit teaching opportunities where students would have little chance to receive instruction on how to learn the language.

4. Summary of Open-Ended Responses

Apart from the closed-ended options, the participants were prompted to give their responses concerning their experiences and opinions on the vocabulary learning strategies (VLS) through an open-ended question. This provided a form of qualitative data to support the students' perceptions, challenges, and recommendations in addition to the quantitative data provided in previous sections. From the analysis of the open-ended responses, three prominent themes were developed: perceived benefits, challenges and limitations, and suggestions and recommendations.

4.1 Perceived Benefits

Many students mentioned that VLS aided in the retention of new words, particularly with repetition and dictionary use. Others reported that strategies like grouping words made the learning process more enjoyable. This was reflected in one student's comment:

"Using mind maps to group words by topic helps me see the connections. It feels less like memorizing and more like learning."

4.2 Challenges and Limitations

A frequently cited concern was the lack of time to implement strategies outside of English class. Several participants also noted that more advanced strategies were never explicitly taught to them, leading to an over-reliance on basic methods. As one student from a science major stated:

"In our biology class, we get lists of new English terms every week, but the teacher just expects us to know them. We are never taught how to learn them efficiently."

4.3 Suggestions and Recommendations

A strong theme emerging from participant recommendations was the need for vocabulary strategy training to be integrated into non-English courses. Students proposed that instructors in their major subjects provide more demonstrations of how to learn the specific vocabulary for that field. One student suggested:

"I wish my professors would spend just 10 minutes showing us how to break down the difficult words in our textbooks. Even suggesting a good app for our specific subject would be a big help."

These responses have further confirmed what the survey results indicate: as a whole, students appear to have positive perceptions toward VLS. However, there seems to be a strong lack of systematic instruction, particularly for instructional frameworks that go beyond very rudimentary skills. The findings indicate students are ready to contend with a number of different approaches if they are adequately taught, given appropriate support, and provided time to practice meaningfully. Moreover, the comments highlight the need for discipline-based VLS instruction where vocabulary instruction is integrated throughout the curriculum—not just taught in English classes.

Discussion and Conclusion

This section discusses the findings of the study in relation to the three core research questions. The results are interpreted in light of the existing literature and theoretical frameworks previously reviewed. It also concludes with the pedagogical implications of the findings, the limitations of the study, recommendations for future research and conclusion.

1. Awareness and Reliance on Traditional Strategies

The study first sought to understand the extent of pre-service teachers' awareness of VLS, revealing a moderate to high level of overall awareness (M = 3.65). However, this overall score masks a significant imbalance. Students reported high familiarity with traditional, mechanical strategies like dictionary use (M = 4.20) and repetition/review (M = 4.01), while reporting much lower awareness of more cognitively demanding strategies such as grouping words into categories (M = 3.23) and using verbal or physical associations (M = 3.15). This disparity strongly suggests that students' understanding of VLS is largely confined to conventional, teacher-directed methods that are frequently practiced and reinforced within the typical Thai classroom setting. The strategies students are most aware of are those that are concrete and require less independent planning. In contrast, the strategies they know least about demand a higher degree of learner autonomy and abstract thinking, indicating that students may not be equipped with the tools for more sophisticated, self-regulated learning.

This interpretation aligns with previous research in the Thai EFL context. For instance, Saengpakdeejit (2014) also found a predominant reliance on rote memorization among university students, while Nirattisai and Chiramanee (2014) revealed that Thai university students most frequently used cognitive strategies, which include mechanical methods like repetition and rote memorization. This phenomenon is likely a direct reflection of the Thai teacher education curriculum, which has traditionally emphasized content knowledge mastery over the development of metacognitive language learning skills for pre-service teachers themselves (Opasrattanakorn & Soontornwipast, 2021). Furthermore, when viewed through Schmitt's (1997) framework, these findings show a heavy reliance on 'cognitive' and 'memory' strategies. The less familiar strategies, which require more creative and organizational effort, represent a gap in students' knowledge of more advanced cognitive and metacognitive approaches that are crucial for developing true learner independence.

2. Perceptions and the Belief-Action Gap

Regarding the second research question on how students perceive the usefulness of VLS, the study found that participants hold a generally positive view, with an overall mean score of 3.88. Specifically, students strongly agreed that strategies are valuable for aiding memory (M = 4.21) and achieving academic success (M = 4.10). However, this positive belief did not extend to practical application. The lowest-rated items were related to using strategies in content subjects taught in English (M = 3.45) and feeling confident in their application (M=3.60). This significant contrast between valuing strategies in theory and applying them in practice reveals a critical "belief-action gap". Students clearly recognize and appreciate the importance of VLS for their learning. Yet, their low confidence and reported lack of use in their own major-specific subjects suggest they feel ill-equipped to transfer this knowledge from general English instruction to their specialized academic domains. This interpretation is strongly supported by the qualitative findings, where students explicitly requested more demonstrations and discipline-specific guidance, highlighting a gap between their positive feelings and their actual learning habits.

This belief-action gap is directly linked to the concept of learner autonomy (Oxford, 2011). While students possess positive beliefs, they have not yet developed the self-regulated skills to independently manage their learning. This finding adds nuance to the work of Shen (2003), suggesting that positive perceptions lead to frequent use only when learners also have the confidence and support to translate those perceptions into action. This gap can be explained by two hypotheses. First, it may be a result of a "hidden curriculum" within the Thai teacher education system, where the official framework's focus on content knowledge implicitly devalues the need for specific language pedagogy (Opasrattanakorn & Soontornwipast, 2021). Second, it could stem from a "lack of strategic scaffolding," where content-area instructors, who are not language specialists, do not possess the pedagogical tools to explicitly support VLS within their subjects (Gibbons, 2015). Without such support, even favorable perceptions can remain dormant, highlighting a critical need for more integrated strategy instruction.

3. The Influence of Academic Major

Finally, the study investigated the influence of academic specialization by comparing language and non-language majors. The results revealed a statistically significant difference

in awareness ($p < 0.01$), with language majors (M = 3.91) reporting higher awareness of VLS than their non-language peers (M = 3.58). In stark contrast, there was no significant difference in perception ($p = 0.564$), with both groups holding similarly positive views on the usefulness of VLS (M = 3.92 vs. M = 3.87). This divergence is one of the study's most telling findings. The higher awareness among language majors is an expected outcome, likely resulting from greater exposure to English and more direct instruction on language learning techniques within their curriculum. However, the fact that perception remains high and consistent across both groups is highly significant. It suggests that the *belief* in the importance of vocabulary strategies is a universal value among these pre-service teachers, regardless of their disciplinary background or level of formal training. In essence, non-language majors seem to know they *should* be using strategies, even if they don't know *what* those strategies are or *how* to use them as well as their language-major counterparts.

This finding—that awareness is shaped by disciplinary context—not only corroborates but also extends the work of researchers like Ghazal (2007), who found differences in strategy use between students in different academic streams. This highlights a systemic issue within many Thai Faculties of Education, where advanced language skills are often treated as the sole responsibility of the English major program, rather than as a cross-curricular competency essential for all future teachers (Pongklee & Sukying, 2022). Our study builds on this by demonstrating that this disciplinary divide persists even among pre-service teachers, a group with a vested interest in pedagogy. This underscores that strategic competence is not an innate skill but a product of situated instruction. The qualitative data powerfully reinforces this interpretation. The sentiment from a science major who stated, *"We are never taught how to learn them efficiently,"* provides a vivid explanation for the lower awareness scores among non-language majors. At the same time, the universally high perception explains why students from all disciplines suggested integrating VLS instruction into their content courses. They value these skills and desire the explicit instruction that their language-major peers are more likely to receive.

4. Pedagogical Implications

These findings suggest several important considerations for foreign language pedagogy in the post-secondary context. Primarily, there is a clear need for VLS instruction that extends across all academic disciplines. Instructional design must account for the fact that while

language majors benefit from consistent exposure, students from other disciplines require more direct assistance, especially when using English in their specific academic contexts. Furthermore, the method of instruction is critical; strategies should be taught through modeling and scaffolding with practical demonstrations rather than just explanations, which is particularly important for lesser-known strategies like grouping and metacognitive planning. Finally, to foster true learner independence, pedagogy should focus on encouraging reflection and peer sharing, as allowing learners to discuss and try new strategies makes them more self-motivated.

5. Limitations of the Study

The findings of this research should be considered in light of several limitations that affect the scope and interpretation of the results. The study's generalizability is constrained by its sampling frame, as participants were drawn from a single university and were predominantly first-year students; this focus on early-stage learners may limit the applicability of the findings to more advanced undergraduates. Additionally, the unequal sample sizes between the language and non-language major groups require that the statistical comparisons be interpreted with caution. Methodologically, the statistical analysis was limited to group comparisons and did not use techniques like ANCOVA or regression to control for the potential influence of confounding variables. Finally, the reliance on self-report questionnaires introduces the possibility of inherent biases in the data.

6. Recommendations for Future Research

To build upon the findings of this study, several avenues for future research are recommended. Firstly, conducting a similar study with a larger and more demographically diverse sample of pre-service teachers from multiple institutions across Thailand would enhance the generalizability of the results. Secondly, incorporating qualitative methods, such as in-depth interviews or focus groups, could provide richer, more nuanced insights into the underlying reasons for students' perceptions and strategy choices. Finally, a longitudinal study designed to track the development of VLS awareness and use from the first year to the final year of study would offer a more dynamic understanding of how these strategies evolve. Furthermore, future research could employ more advanced statistical methods, such

as ANCOVA or regression analysis, to control for variables like year of study and gender, which would provide a more nuanced understanding of the factors influencing strategy use.

7. Conclusion

Vocabulary Learning Strategies (VLS) have been shown to be significant for the development of a language within the context of university education. It has been noted that students from different disciplines possess a generally positive view of VLS; however, awareness stratifies significantly among language and non-language students. These insights strongly highlight the need for systematic, explicit instruction of strategies across subjects to enhance learners' autonomy and independence, enabling them to navigate complex language learning challenges in academic settings beyond school.

When applied purposefully, the gap between knowing and understanding can be closed, and students are no longer just learners of vocabulary, but true owners of it.

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