



A Comparative Analysis of Gender-Based Differences in Vocabulary Learning Strategies among Graduate Students

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ABSTRACT

This study investigated vocabulary learning strategies (VLSs) employed by graduate students in English for Academic Purposes (EAP) contexts, focusing on gender-based differences. Drawing on Schmitt's taxonomy, the research adopted a descriptive design to examine the frequency and variation in strategy use among 49 graduate students at a university in Northern Thailand. Data were collected via a 41-item questionnaire and analyzed using descriptive statistics and Fisher's Exact Test. Results revealed that affective strategies, such as using multimedia materials ($\bar{X} = 3.32$), cognitive strategies, like notetaking ($\bar{X} = 3.29$), and determination strategies, such as dictionary consultation ($\bar{X} = 3.20$), were most frequently employed. Conversely, memory strategies like flashcard use were less favored. Although females showed slightly higher use of affective and social strategies, the statistical analysis revealed no significant gender differences in VLSs preferences.

These findings align with recent research emphasizing individual academic needs and contextual factors as more influential than demographic variables. This study recommends that curriculum design for English for Academic Purposes (EAP) courses emphasize using self-regulated learning strategies responsive to specific tasks and learning contexts. It also offers suggestions for curriculum development and outlines directions for future research.

KEYWORDS: Vocabulary Learning Strategies, Graduate Students, Gender Differences, English for Academic Purposes (EAP)



Introduction

Effective vocabulary acquisition is essential for academic success, especially for graduate students who are non-native English speakers. In advanced academic settings, such as English for Academic Purposes (EAP) courses, a strong command of specialized vocabulary is a vital tool for not only comprehension and learning but also professional development (Brooks et al., 2023; Kovalenko, 2024). In other words, mastery of academic vocabulary significantly enhances students' ability to engage in and contribute to academic discourse while preparing them for future professional roles. For non-native English learners, acquiring specialized and technical vocabulary relevant to their respective fields can be challenging. This challenge directly impacts their academic performance and ability to integrate into their professional domain (Campbell, 2024). Research indicates that both the breadth and depth of vocabulary knowledge are closely related to reading comprehension and critical thinking skills across disciplines (Hasan et al., 2022; Siddiq, 2022). Moreover, the ability to accurately use domain-specific vocabulary in both written and spoken forms reflects expertise that contributes to credibility in academic and professional settings (Abdel Latif, 2025; Hengsuko, 2024; Uehara et al., 2022).

Numerous studies highlight that gender significantly influences the choice of vocabulary learning strategies. For instance, female students are more inclined to use determination strategies such as analyzing word forms and connecting them to meanings, facilitating deeper linguistic comprehension (Montero-Saiz-Aja, 2021). Conversely, male students tend to employ more social strategies, such as asking peers or teachers for clarification, a behavior that illustrates broader gender-based cognitive and social tendencies (Riyantika et al., 2024; Shakouri & Saligheh, 2012). While women often demonstrate stronger verbal fluency and vocabulary production, men typically excel in verbal analogies and comprehension tasks, reflecting their different approaches to learning. This behavioral divergence mirrors broader gender-based cognitive and learning preferences and underscores the need for tailored instructional approaches. By understanding and integrating these nuanced differences into educational practices, educators can enhance the efficacy of vocabulary instruction, thereby improving academic achievement and professional readiness among all students.

Although vocabulary development is crucial, many non-native English speakers require assistance with pronunciation, ambiguity of meaning, and unfamiliarity with cultural nuances influencing word use (Alali, 2019; Kurniawan, 2024). Additionally, learning the language while simultaneously grappling with complex academic content can exacerbate stress and anxiety, potentially impairing both academic performance and overall well-being (Han et al., 2022; Kianinezhad, 2024; Su & Chu, 2024). These challenges underscore the importance of investigating



and exploring various vocabulary learning strategies (VLS) that can be tailored to meet the diverse needs of students in English for Academic Purposes (EAP) courses. A comparative analysis of these strategies illuminates the most effective and provides valuable insights that enable educators to customize their instructional approaches. By optimally adjusting educational practices based on these insights, educators can significantly improve their students' academic and professional outcomes (Ghalebi et al., 2020; Nation & Nation, 2001; Nazeer et al., 2023).

Vocabulary learning is a complicated process that involves various strategies to enhance acquisition and retention. Schmitt's (1997) Taxonomy of Vocabulary Learning Strategies classifies these strategies into cognitive, metacognitive, social, determination, affective, and memory strategies. Vocabulary learning is a complex process encompassing a range of strategies designed to enhance acquisition and retention. Cognitive strategies involve direct interaction with the language through highlighting, repetition, note-taking, summarization, and contextual guessing, which promote active engagement with new vocabulary. Some recent work has shown that using visualization and flashcards can reinforce long-term memory retention (Mohammadi et al., 2024; Zhou et al., 2024). Metacognitive strategies enable learners to take control of their learning by allowing them to plan, monitor, and evaluate their vocabulary usage. Activities such as self-reporting and reviewing learning progress play an essential role in facilitating learners' application of metacognitive strategies and enhancing their learning experiences (Wang & Pellicer-Sánchez, 2024).

Social strategies, which involve discussions, clarifications, and peer collaborative learning, effectively enhance language learning (Vurdien, 2023). Determination strategies encourage learners to actively seek the meanings of new words through online resources such as dictionaries, YouTube videos, and TED Talks, or by guessing words from context, thereby promoting independent learning skills (Chung et al., 2025). These methods have proven effective in enhancing vocabulary acquisition (Azmimurad & Osman, 2019). Affective strategies, which help maintain motivation and reduce anxiety, show significant gender differences in usage, with female students reporting higher overall reliance than their male counterparts (Okyar, 2021). Memory strategies, such as utilizing mnemonic devices and creating semantic networks, have been proven effective in enhancing vocabulary retention and involve techniques that enhance vocabulary retention through mental imagery or associations (Karatat et al., 2025). Together, these strategies illustrate the multifaceted nature of vocabulary learning and underscore the necessity for employing a diverse set of tools tailored to different learning contexts and needs. Educators can significantly enhance learners' academic and professional language outcomes by adopting a



comprehensive approach that integrates these strategies, especially in challenging English for Academic Purposes (EAP) contexts.

Despite the recognized importance of vocabulary acquisition, current EAP programs often fail to address non-native learners' diverse needs adequately (Generoso & Arbon, 2020). Many programs rely heavily on traditional teaching methods, such as memorization and decontextualized word lists, which do not prepare students effectively for the complexities of academic or professional language use (Arifin, 2024; Nguyen & Javorsky, 2025). This approach leads to inadequate word knowledge, lacking the depth necessary for accurate and nuanced usage in academic discourse. Furthermore, vocabulary instruction is rarely tailored to individual learners' backgrounds, language experiences, or academic needs. Studies have suggested that vocabulary strategies are more effective when considering learners' prior knowledge, learning styles, and specific disciplinary requirements (Hu et al., 2021).

Addressing these gaps requires integrating more context-relevant and tailored vocabulary learning strategies into EAP curricula. Educators can improve vocabulary learning outcomes and support the academic success of non-native English speakers by integrating diverse strategies that align with students' academic and professional needs (Lee et al., 2022). This research study explored various vocabulary learning strategies, drawing on theoretical frameworks to comprehensively understand the factors contributing to effective vocabulary acquisition. It focused on gender differences in strategy preferences.

Research Objectives

This study aims to address existing research gaps by comparing the effectiveness of different vocabulary learning strategies among graduate students in an English for Academic Purposes (EAP) course in northern Thailand, with the goal of enhancing instructional practices to better meet the needs of non-native English speakers. Specifically, the study seeks to:

1. Investigate the vocabulary learning strategies employed by graduate students in academic English contexts.
2. Analyze the role of gender in influencing the choice and use of vocabulary learning strategies among graduate students in academic English contexts.

Research Methods

This study employed a descriptive research design to investigate the use of vocabulary learning strategies (VLSs) and gender differences among graduate students enrolled in an English for Graduate Studies course at a university in northern Thailand during the 2022–2023 academic



year. Using purposive sampling, 49 students were selected to ensure a balanced representation of male and female participants for gender-based analysis.

Conceptual Framework

The conceptual framework of this study is structured around the exploration of two main variables: Gender Differences and Vocabulary Learning Strategies, as depicted in the attached diagram (Figure 1). This framework guides the investigation into how these variables interact and influence each other within academic contexts, aiming to uncover strategic differences that could inform more effective vocabulary instruction tailored to gender-specific needs.

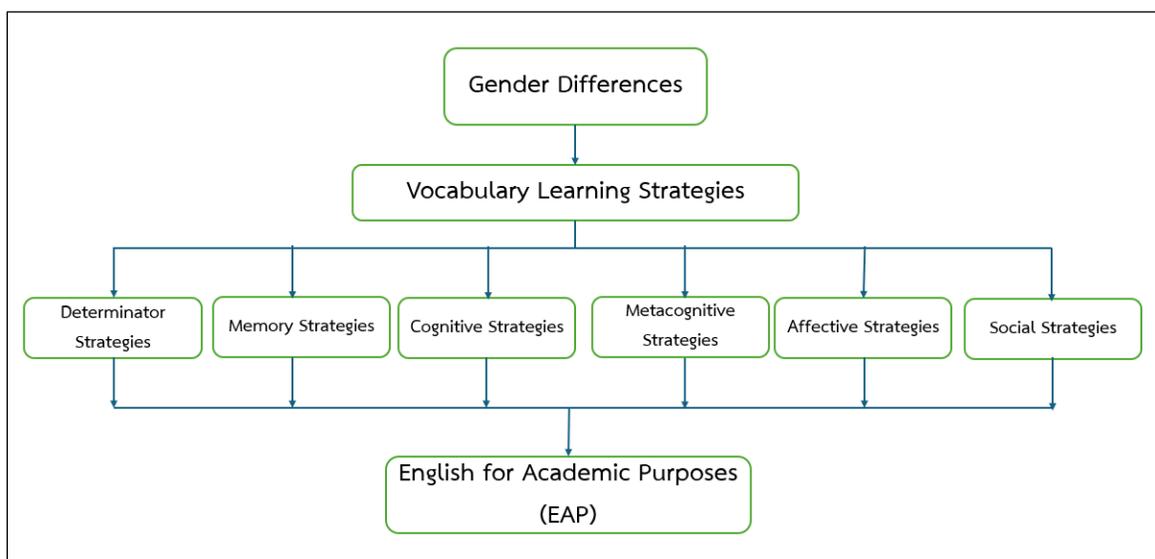


Illustration 1 Conceptual Framework of the Study on Vocabulary Learning Strategies among Graduate Students

Research Instruments

Data were collected using a 41-item questionnaire by Schmitt's (1997) Taxonomy of Vocabulary Learning Strategies. This instrument assessed the frequency and type of VLSs employed by the students.

Data Collection

The questionnaire was distributed to the 49 selected students, who were asked to respond based on their experiences in their current academic year. The collection process was structured to ensure anonymity and confidentiality to encourage honest and accurate responses.



Data Analysis

The collected data were analyzed using descriptive statistics, which included calculating means, Fisher's Exact Test, and standard deviations to identify patterns in the usage of different VLSs across gender. This approach facilitates an understanding of the predominant strategies employed by male and female students. In addition, this approach allows for a comprehensive analysis of how gender may influence the choice of learning strategies, which can inform tailored educational practices.

Research Results

The demographic information of the respondents can be summarized as follows. Most students self-assessed their English proficiency as very low (22 students), low (17 students), and average (10 students). Regarding gender, 27 respondents were female, accounting for 55.1% of the sample, while 44.9% (22 respondents) were male. Regarding academic fields, 65.31% (32 respondents) were studying in science or applied sciences areas, and 34.69% (17 respondents) were pursuing studies in social sciences. The section uncovered the research findings in two folds.

1. The most used vocabulary learning strategies among graduate students in academic contexts

The statistical analysis revealed a diverse range of strategies employed for vocabulary acquisition (Table 1). Strategies that incorporate active engagement with content, such as using other English media ($\bar{X} = 3.32$) (affective strategy), taking notes during class ($\bar{X} = 3.29$) (cognitive strategy), and looking up the meaning in a dictionary ($\bar{X} = 3.20$) (determinor strategy), were rated as the most used by the students. The variability in these scores, as indicated by standard deviations, also suggested differing levels of consensus among students about the effectiveness of each strategy. Strategies such as using flashcards ($\bar{X} = 1.73$) and grouping words by category or semantic maps ($\bar{X} = 1.98$) were among the least favorable to students.

To evaluate the effectiveness of various vocabulary learning strategies, usage frequencies were analyzed across different categories. Among determinor strategies, looking up the meaning in a dictionary ($\bar{X} = 3.20$) was the most favored. For memory strategies, connecting the word to personal experiences ($\bar{X} = 2.53$) was the most common. In cognitive strategies, taking notes during class ($\bar{X} = 3.29$), followed by underlining or highlighting new vocabulary in the text ($\bar{X} = 2.98$), were predominant. Metacognitive strategies were led by searching for words in the vocabulary list at the end of the lesson ($\bar{X} = 2.45$), while in social strategies, students preferred asking for the meaning from friends or others ($\bar{X} = 3.06$). These results provide valuable insights into optimizing vocabulary learning techniques to meet today's learners' diverse needs and preferences, ensuring more effective and engaging education.

2. Do gender differences exist in vocabulary learning strategies?

The results (Table 1) indicated no statistically significant differences between male and female students across all vocabulary learning strategies, as none of the p-values were below the significance threshold of 0.05. The data suggest that both male and female graduate students similarly employ vocabulary learning strategies across all categories evaluated. This indicates that gender does not significantly influence the choice of vocabulary learning strategies among graduate students in academic English contexts.

Table 1 Comparison of Vocabulary Learning Strategies by Category, Gender, Mean Scores, Standard Deviations, and P-Values

Categories	Vocabulary Strategies	<i>F</i>	<i>M</i>	\bar{X}	<i>S.D.</i>	<i>P-Value</i>
DETERMINOR	1. Analyze the type and function of the word (e.g., verb, noun, etc.) to infer its meaning.	15	13	2.55	0.67	0.85
	2. Analyze word structure, such as the root, prefix, and suffix (e.g., incredible, powerful), to determine the meaning.	6	7	2.04	0.92	0.57
	3. Look up the meaning in a dictionary.	21	16	3.20	0.88	1
	4. Analyze pictures or gestures available to understand the word's meaning.	17	17	3.04	0.86	0.48
MEMORY	1. Connect the word to personal experiences.	14	12	2.53	0.88	0.84
	2. Connect the new word to its synonyms or antonyms.	8	6	2.14	0.70	1
	3. Group the words by category or use semantic maps.	5	7	1.98	0.77	0.38
	4. Post the vocabulary and their meanings in a visible location.	7	6	2.02	0.98	1
	5. Use gestures to help remember vocabulary.	9	5	2.10	0.91	0.79
	6. Write down vocabulary in a vocabulary notebook.	11	10	2.41	1.07	0.82

(Continued)



Table 1 (Continued)

Categories	Vocabulary Strategies	<i>F</i>	<i>M</i>	\bar{X}	<i>S.D.</i>	<i>P-Value</i>
	7. Regularly review the vocabulary.	7	7	2.16	0.68	0.6
AFFECTIVE	1. Use other English media, such as songs, movies, or online media, to enhance vocabulary learning.	23	12	3.32	0.80	0.3
SOCIAL	1. Ask the teacher for the meaning of the word.	15	15	2.80	0.95	0.46
	2. Ask the teacher for further explanation or examples.	12	9	2.53	1.14	1
	3. Ask the teacher for example sentences that include the new vocabulary.	11	7	2.45	1.13	0.81
	4. Ask for the meaning from friends or others.	23	17	3.06	1.08	1
	5. Derive the meaning from group activities with friends.	19	12	2.73	0.96	0.71
	6. Practice using new vocabulary with native speakers.	10	7	2.12	0.85	1
COGNITIVE	1. Infer the meaning of the word from the surrounding context.	15	17	2.80	0.99	0.28
	2. Spell the word.	16	11	2.47	0.70	0.85
	3. Connect the new word to other words previously learned.	11	9	2.27	0.69	1
	4. Practice pronouncing the word.	21	12	2.78	0.76	0.48
	5. Learn vocabulary and idioms simultaneously.	11	9	2.35	0.85	1
	6. Take notes during class.	23	16	3.29	0.99	0.87
	7. Use flashcards.	7	1	1.73	0.85	0.15
	8. Speak or write the vocabulary repeatedly.	15	8	2.47	0.81	0.52
	9. Underline or highlight new vocabulary in the text.	21	14	2.98	1.06	0.73

(Continued)



Table 1. (Continued)

Categories	Vocabulary Strategies	<i>F</i>	<i>M</i>	\bar{X}	<i>S.D.</i>	<i>P-Value</i>
	10. Practice listening and repeating examples.	16	13	2.73	0.69	0.85
	11. Regularly review vocabulary.	7	7	2.16	0.68	0.6
METACOGNITIVE	1. Search for words in the vocabulary list at the end of the lesson.	13	10	2.45	0.88	1
	2. Practice vocabulary using the exercises at the end of the lesson.	11	8	2.20	0.76	1
	3. Test oneself with word tests.	10	8	2.22	0.79	1
	4. Play word-related games.	11	8	2.43	0.93	1

Discussion

This study explored (1) the most used vocabulary learning strategies among graduate students in academic English settings and (2) whether gender differences influence strategy selection. The findings offered valuable insights into vocabulary acquisition among non-native English-speaking graduates, informing both instructional practices and pedagogical approaches.

1. Vocabulary Learning Strategies Employed by Graduate Students

The findings of this study indicate that graduate students employ a variety of vocabulary learning strategies, with a clear preference for active and cognitively engaging methods such as using multimedia materials, taking notes, and consulting dictionaries. These patterns reflect the value of integrating textual and visual inputs to support vocabulary retention and production across different learning styles (Bastawros, 2024; Teng, 2023). Consistent with Wang and Pellicer-Sánchez (2024), the study further emphasizes that effective vocabulary acquisition requires not only exposure but also the intentional application of strategies like contextual inference and morphological analysis in multimodal learning settings. The frequent use of metacognitive and cognitive strategies among the students underscores the role of strategic processing and self-regulation in promoting successful language learning outcomes. These findings collectively highlight the need to foster metacognitive awareness and purposeful strategy use in academic English instruction. In contrast, strategies based on rote memorization, like flashcards and semantic mapping, were less preferred, suggesting a pedagogical shift toward more meaningful, contextually grounded learning practices, aligning with Nguyen and Javorsky's (2025) advocacy for evolving vocabulary instruction beyond traditional memorization techniques.



2. Gender Differences in Vocabulary Learning Strategies

This study examined whether gender influences vocabulary learning strategy selection among graduate students and found no statistically significant differences across strategy categories, as confirmed by Fisher's Exact Test. These results align with Al-Khresheh and Al-Ruwaili (2020), who reported no gender-based differences in overall strategy use among adult EFL learners. While earlier research (Ridwan Muhammad & Jusoh, 2022; Tran, 2021) indicated gender-specific tendencies-such as females preferring memory and social strategies and males favoring cognitive and determination strategies-our findings support the conclusions of Kobayashi and Little (2020), who noted that explicit strategy training can reduce such disparities. Although descriptive data revealed minor differences, such as slightly higher affective and social strategy use among females, these were not statistically significant. This reinforces the argument made by Aslanyan Rad (2024) and Sukying (2021) that individual learning preferences, cognitive styles, and task demands are more critical to strategy selection than gender. Supporting this, Hsu et al. (2024) and Ganieva et al. (2020) emphasized the effectiveness of self-regulated learning (SRL) approaches, which promote learner autonomy and context-responsive strategies irrespective of gender. The findings suggest that EAP instruction should focus on flexible, personalized learning design rather than gender-based adaptations.

Suggestions

Suggestions for utilizing the research results

The research findings suggest several practical applications:

1. While no significant gender differences were found, educators should emphasize the most effective strategies identified: determination (e.g., dictionary use), cognitive (e.g., note-taking), and affective strategies (e.g., multimedia use), as these were commonly employed regardless of gender.
2. Vocabulary teaching should adopt a learner-centered approach that encourages active, context-based engagement tailored to individual needs.
3. Differentiated instruction is recommended to accommodate diverse learning preferences and academic disciplines.
4. Integrating digital tools, like YouTube, TED Talks, and apps, can enhance vocabulary learning, especially for lower-proficiency students.
5. Findings of this study can guide teacher training to promote flexible instructional design and strategy-based autonomous learning.



Suggestions for future research

Future research should consider the following directions:

1. Conduct longitudinal studies to examine the long-term effects of consistent vocabulary strategy use on language acquisition and academic performance.
2. Diversify the sample by including participants from various academic disciplines, cultural backgrounds, and proficiency levels, particularly those from international or interdisciplinary graduate programs, to enhance the generalizability of findings.
3. Explore the integration of technology by investigating the impact of AI tools, mobile applications, and game-based platforms on vocabulary strategy use, focusing on factors such as motivation, anxiety reduction, and self-regulation.
4. Focus on individual learner variables, including cognitive styles, motivation types, and personality traits, which may better explain strategy use than demographic factors like gender.
5. Use mixed methods approaches that combine quantitative data with qualitative insights, such as learning diaries or interviews, to better understand learners' vocabulary strategy use and learning experiences.

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