Comprehending of the *2018-2020 New Chinese Vocabulary* among International Students in China

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Abstract

Learning new Chinese vocabulary beyond the HSK (Global Chinese Proficiency Examination) vocabulary syllabus will improve Chinese communication ability for international students in China. This study addresses the vocabulary learning problems including insufficient systematic understanding of vocabulary features, lack of in-depth learning methods and the lack of contextual application. This study investigates the respondents' level of comprehending the *2018-2020 New Chinese Vocabulary*, and explores their learning problems, as well as proposes suitable vocabulary learning strategies for them. The samples included 30 international students from Yangzhou

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University, Guangxi Normal University and Bohai University in China. The results from the online questionnaire indicate that the students' comprehension of these new vocabulary has improved in the context-provided assessment. In terms of problems, 90% of the respondents were unable to infer the meaning of new vocabulary based on existing knowledge. Besides, students with better understanding generally use context strategies and coding strategies more than other students. This study puts forward suggestions on the vocabulary learning strategies to help international students learn Chinese vocabulary better.

Keywords: New Chinese Vocabulary, Vocabulary Learning Strategies, Chinese as a Foreign Language

1. Introduction

1.1 Research Background

Since the 1980s, with the continuous development and progress of China's economy and society, there has been a significant increase in the production of new Chinese vocabulary. This development of new vocabulary is closely intertwined with the changes in society and the times, adhering to the law of co-transformation between language and social structure. It serves as a reflective record of contemporary society, showcasing the distinctive features of the current era (Yang & Duan, 2023). In recent years, the utilisation of new Chinese vocabulary has been on the rise, both in Chinese cultural life and on online social platforms, capturing the attention of various stakeholders and stimulating more profound academic research in this domain. Notably, during the period from 2018 to 2020, the number of new Chinese vocabulary expanded by over 600 words, which has posed additional challenges to international students in China in terms of enhancing their vocabulary skills (Guo & Hou, 2022).

According to statistical data, in 2018, a total of 258,122 international students from 196 countries and regions enrolled in 1,004 higher education institutions across 31 provinces in China (Lin & Liu, 2022). Despite the growing emphasis on new Chinese vocabulary, studies have indicated that international students still encounter difficulties in comprehending and assimilating these novel terms, emphasising the need for targeted solutions to address their specific challenges.

The mastery of new Chinese vocabulary has emerged as a crucial factor in the overall language proficiency improvement for international students. For instance, Liu (2021) conducted an extensive classification of online new Chinese vocabulary, offering a comprehensive analysis of its characteristics, and proposed effective teaching strategies tailored to individual students' needs.

This study will focus on investigating students' understanding of new Chinese vocabulary with and without context. Context provides students with important clues about the meaning, nuances, and correct application of new vocabulary. In the process of language learning, context is the background of language use, which provides key support for students to understand the meaning and usage of new vocabulary (Mulder, *et al.* 2019). Effective use of context can enable students to better understand, remember and apply new vocabulary, thereby improving language skills (Gong, *et al.* 2020).

1.2   Research Problem

Studies have shown that international students face difficulties in understanding new Chinese vocabulary, and exploring their problems and finding targeted solutions remains a research focus.

1.2.1   Lack of New Chinese Vocabulary in Chinese Textbooks

The lack of inclusion of new Chinese vocabulary in the HSK syllabus and teaching materials has brought challenges to international students' Chinese learning. Zhou (2022) pointed out that although the HSK syllabus has been criticised for not keeping up with the times, it is still the main reference used by all textbook publishers when producing Chinese learning materials. However, revising the syllabus and textbooks is a time-consuming process (Fan, 2013). To address this issue, Zheng (2022) emphasised the importance of stable new Chinese vocabulary and authentic language materials for expanding international students' vocabulary comprehension.

The current study will be based on two new vocabulary dictionaries, the *2018 New Chinese Vocabulary* (Hou & Zou, 2019) and the *2019-2020 New Chinese Vocabulary* (Hou & Zou, 2021). From these, relatively stable new Chinese vocabulary is selected and recommended to be included in the learning materials for international students.

1.2.2   Problems Learners Face in Learning New Chinese Vocabulary

International students encounter many challenges when learning new Chinese vocabulary, mainly due to limited understanding of Chinese culture, insufficient systematic grasp of the characteristics of new Chinese vocabulary, and lack of effective methods for in-depth learning and contextual application of new vocabulary. For example, Hunt (2005) found that language comprehension and use are inherently rooted in vocabulary comprehension and use. Research shows that semantic transparency, sentence context and language environment have a significant impact on the understanding and use of new Chinese vocabulary by international students with intermediate Chinese proficiency (Wen, 2023). In addition, Fan (2013) believes that the semantic transparency, word formation, and routine degree of new Chinese vocabulary play a key role in determining the degree of vocabulary comprehension by international students.

To address these issues, this study will focus on finding targeted learning strategies suitable for international students. These strategies include situational strategies, coding strategies, and emotional communication strategies. By combining these approaches, this study aims to enhance the vocabulary learning experience of international students, enabling them to overcome the above-mentioned challenges and understand and use Chinese new vocabulary more proficiently.

1.2.3   Learners Lack of Using Effective Vocabulary Learning Strategies

Some international students directly skip the content they do not understand when learning new Chinese vocabulary and fail to find suitable vocabulary learning strategies (VLS), such as combining contextual learning, planning or monitoring new vocabulary learning, and learning through reasoning and association. This may lead to them facing problems when learning new Chinese vocabulary (Liu, 2021).

1.3   Research Gap

Study shows that in the era of continuous development and change of information, learning and using new Chinese vocabulary in Chinese is of great significance to international intermediate and advanced Chinese students. Mastering the characteristics of new Chinese vocabulary and vocabulary construction methods will help students correctly understand and master new vocabulary. Due to the lack of new vocabulary in textbooks and syllabus, and the long review period, it is crucial for students to choose reliable new vocabulary as a guide. International students learning new Chinese vocabulary often face problems such as insufficient vocabulary input, lack

of grasp of vocabulary features, and lack of context. Therefore, context strategies, coding strategies and emotional communication strategies can be used as a reference to solve the learning problems of international students.

1.4   Research Objectives and Research Questions

Combining the research background, research problems and research significance, this study sets to address the following research objectives (RO):

RO1: To investigate international students' comprehension level of new Chinese vocabulary without context.

RO2: To assess international students' comprehension level of new Chinese vocabulary with context.

RO3: To identify the problems faced by international students when learning new Chinese vocabulary.

RO4: To propose recommendations for international students' learning of new Chinese vocabulary based on learning strategies.

To accomplish the research objectives, this study is designed to focus on the following research questions (RQ):

RQ 1: How well do international students comprehend different categories of new Chinese vocabulary without context?

RQ 2: How well do international students comprehend different categories of new Chinese vocabulary with context?

RQ 3: Which problems do international students face when learning new Chinese vocabulary?

RQ 4: What learning strategies can help international students learn new Chinese vocabulary?

2.   Literature Review

The following sections discuss the literature on the theoretical perspectives of learning and provide an overview of existing research on new vocabulary acquisition and comprehension. The synthesis of these findings provides a foundation for understanding the challenges and opportunities that international students face in acquiring new Chinese vocabulary.

2.1   Theoretical Assumptions

2.1.1   Explicit and Implicit Learning

Van Patten and Smith (2022) believe that both explicit learning and implicit learning are helpful to international students' vocabulary learning, including learning new Chinese vocabulary in real contexts or contextual materials, increasing communication with native speakers, and learning more about Chinese social and cultural backgrounds. Explicit learning refers to the learning process in which learners consciously and purposefully process the information they are given and uncover patterns in it to better grasp the patterns of the input (Hulstijn, 2013). The explicit learning process is the process in which international students master the characteristics of new vocabulary through direct learning and using learning strategies. On the other hand, implicit learning refers to the unconscious and unintended processing of the information which is referred to as *input* (Hulstijn, 2013). The implicit learning process emphasises the internalisation of new Chinese vocabulary into one's knowledge through the use and contact with a large number of new Chinese vocabulary. Using emotional communication strategies may facilitate the input and output of new vocabulary and hence increase the learning of new vocabulary for international students.

2.1.2   Theory of Noticing Hypothesis

The first step in second language vocabulary learning is the transformation of linguistic input into intake, and attention plays a crucial role. The theory of noticing hypothesis suggests that individuals allocate attention based on the relevance and familiarity of stimuli. The focus of international students' *noticing* has two aspects. One is the conscious attention to the input characteristics of new Chinese vocabulary, and the other is their attention to the wrong content in the process of using and outputting new vocabulary. Paying attention to the input and output of new vocabulary can help learners understand and reflect, and better internalise the knowledge of new Chinese vocabulary into their knowledge (Crowley, 2022).

2.1.3   The Depth and Elaboration of Processing Theory

In the process of learning new vocabulary, if students want to successfully remember and retain the new vocabulary they noticed, they need to do more in-depth processing of these new vocabulary (Craik & Lockhart, 1972). The depth and elaboration of processing theory specifically

divides cognitive processing into two levels: The first type of processing is a superficial processing level. The memory duration of new information through the formal processing level is relatively short. The second type of processing is a deeper process in which learners identify a tenured word and then relate it to other vocabularies, related representations, and stories. New information at the level of semantic processing can have a relatively long memory trace. The depth and elaboration of processing theory (Craik & Lockhart, 1972) inform us of how to help students improve their ability to understand and use new Chinese vocabulary through in-depth analysis of the meaning, word formation, and basic types of new Chinese vocabulary, and applying it in different contexts to connect with previous knowledge (Hamidani *et al*, 2022).

In the current study, context plays an important role in international students' ability to understand and use new Chinese vocabulary. Situation-based learning strategies can help students better understand the inner meaning of vocabulary, which is in line with the principle of the importance of in-depth processing for retaining new vocabulary. In short, this study draws on the "theory of noticing hypothesis" proposed by Crowley (2022) that emphasises the importance of attention in vocabulary acquisition. This conscious attention to lexical input can be viewed as a form of situational strategy that is essential for effective learning. These coding strategies involve students' efforts to understand and categorise new vocabulary in meaningful ways that are consistent with the depth and elaboration of processing theory.

2.2 Dependent Variable and Independent Variables

In this study, the Dependent Variable (DV) is the degree of comprehension of new Chinese vocabulary by international students, while the Independent Variable (IV) is the learning strategies of international students.

2.2.1 Classification of New Chinese Vocabulary

In recent years, the study of new Chinese vocabulary has shown positive results. Analysing and studying the word-building methods and characteristics of new Chinese vocabulary is of great significance for helping international students master the characteristics of new Chinese vocabulary. From a lexical perspective, phenomena such as imitation, metaphor, and metaphorisation in rhetoric are identified as crucial pathways for the generation of new vocabulary (Liu, 2021). It has also been proposed that the rhetorical word formation of new vocabulary

includes parody, metaphor, analogy, abbreviation and other methods (Su, 2018). Similarly, Li (2021) proposed that rhetorical word formation includes metaphor, abbreviation, and analogy. Based on these classifications, this study proposes to divide the new Chinese vocabulary into the following six categories:

- Analogy refers to the creation of words based on analogical reasoning of the same structure of some attributes in words.
- Abbreviation refers to the formation of new Chinese vocabulary through abbreviation.
- Metaphor refers to a word constructed through metaphor or symbolic meaning.
- Old vocabulary with new meanings refers to old words with new meanings or new usage. Neologism refers to a newly created word or phrase that did not exist before, while Simulation: refers to new words formed by imitation or by replacing morphemes.

2.2.2   The Importance of Learning New Chinese Vocabulary for International Students

In recent years, academic circles have paid more and more attention to the study of new Chinese vocabulary. As early as the 1980s, academic circles affirmed the value of teaching new Chinese vocabulary and proposed to pay attention to the teaching of new Chinese vocabulary for international students. Chen (1984) believed that the appearance of each new Chinese vocabulary has social significance, and sociolinguists should pay attention to and study the value of new vocabulary, which initiates attention to new Chinese vocabulary among academic circles. From the 20th century, the learning of new Chinese vocabulary has gradually attracted people's attention. Ma (2020) pointed out that since new popular Chinese vocabulary is being actively used, non-native language learners must learn such vocabulary to communicate effectively with native speakers. In fact, network new vocabulary is commonly used in daily conversation and network communication, and understanding its usage is of great significance to contemporary college students. These vocabularies provide insights into current social and cultural trends among young people. Studying the use of these words can help non-native learners become familiar with the language and improve their communication skills with native speakers. It is believed that new online vocabulary is of great significance to international students with intermediate and advanced levels of Chinese (Zheng et al., 2022) Intermediate and advanced learners already have a certain accumulation of vocabulary and grammatical knowledge and are satisfied with their understanding of new Chinese vocabulary and their application in Chinese culture and social life.

2.2.3 Vocabulary Learning Strategies

Studies have shown that the use of multiple learning strategies is beneficial to second language vocabulary learning, including contextual strategies, coding strategies and emotional communication strategies, such as learning vocabulary in context, using lexical features and categories for memory, associating similar words, and increasing communication with native speakers. Practical learning strategies not only help improve learning effects, but also help learners optimise their learning methods. Lestari and Wahyudin (2020), who investigated the differences in the use of vocabulary learning strategies between excellent learners and poor learners, found that excellent learners use more cognitive strategies. It has also been found that high-level learners use VLS more effectively than low-level learners (Macaro et al., 2017). In addition, Lu (2020) found that international students with better Chinese vocabulary used learning strategies to a greater extent than students in the low-level group. Practical learning strategies not only help improve learning effects, but more importantly, help learners optimise their learning methods. For example, Liu (2021) classified new online Chinese vocabulary, summarised the characteristics of new online Chinese vocabulary, and proposed appropriate teaching strategies according to students' own conditions, including the use of contextual strategies and emotional strategies. Zhao (2016) who studied individual factors of learners, such as learner motivation, anxiety, and strategy mastery, showed that reducing anxiety and enhancing motivation are more helpful for learning.

2.2.4 The Application of the Characteristics of New Chinese Vocabulary in the Vocabulary Learning of International Students

New vocabulary is constantly emerging, and thus, in the process of language learning and teaching, teaching Chinese as a second language should also pay attention to the teaching of new vocabulary (Su, 2018). Exploring the word-forming mechanism of new Chinese vocabulary is conducive to students' correct understanding and use of vocabulary. Zhu (2017) analysed the current situation of new Chinese vocabulary teaching, and discussed the necessity of learning new vocabulary, and designed the teaching design of new Chinese vocabulary for specific courses. Similarly, Tian (2018) used the *2016 new Chinese vocabulary* to conduct theoretical research and discuss the importance of new vocabulary in Chinese teaching, as well as put forward suggestions for new Chinese vocabulary teaching. The emergence and characteristics of new Chinese vocabulary as a

second language were studied by Hong and Lai (2023) who looked at the practicality of the selection of new Chinese vocabulary. Niu (2021) conducted a statistical analysis of the new Chinese vocabulary in the *2011-2020 report on the state of the Chinese language*, via a survey on the learning of new Chinese vocabulary by international students and suggested targeted innovative new vocabulary learning strategies and methods.

3.   Methodology

3.1   Research Design

This study mainly adopts quantitative research methods. Through the collected research data, SPSS 27 was used for systematic analysis and presentation. First, the average scores in Part A of international students in different performance groups are described. ANOVA was used to determine whether there were significant differences in the performance of international students in different performance groups. In Part B of the study, the frequency of problems encountered by international students when learning new Chinese vocabulary was compared to identify the problems that international students face when learning new Chinese vocabulary. In addition, the Chi-Square test of independence was used to assess the relationship between learning strategies used by different performance groups.

This study used Part A of a questionnaire to investigate the comprehension level of international students on new Chinese vocabulary and used SPSS 27 to systematically analyse and explain the research results to address RQ1 and RQ2. Part A of the questionnaire was divided into two parts. The first section was a 5-point scale for international students to judge their comprehension level of new Chinese vocabulary, and the second section examined the ability of international students to use new Chinese vocabulary with context.

This study also investigated the individual needs of international students and the problems they face in learning new Chinese vocabulary through Part B of the questionnaire. The findings of the questionnaire were then used to answer RQ3.

Part C of the questionnaire was used to investigate the extent to which international students used each learning strategy. The findings were then reviewed in the literature to suggest ways to help international students learn new Chinese vocabulary (RQ4).

3.2   Sample

A convenience sample was used for this study (Fraenkel et al. 2012). The sample of this study were 30 international students with advanced Chinese proficiency level from Yangzhou University, Guangxi Normal University and Bohai University. A total of 10 student respondents were selected from each of these three universities respectively. These three universities are located in different geographical areas, covering eastern, southern and northern China. Selecting these universities provided a representation of international students in different regions and improved the representativeness of the study. The sample of the study included seven male students and 23 female students. The gender ratio was generated from the actual enrolment of the universities. The age range of the participants varied, with participants ranging from 20 to 32 years old. The average age of the samples was calculated to be 27 years. The students were in their first and second year of their master's degree at the time of the study.

Informed consent was obtained from all participants before their involvement in the study. Participants were provided with detailed information about the study, including its purpose, procedures, and potential risks. The consent form was presented in a clear and comprehensible manner, ensuring that participants understood their voluntary participation.

The new Chinese vocabulary involved in the study were selected from the two dictionaries: the *2018 New Chinese Vocabulary* and the *2019-2020 New Chinese Vocabulary*. This was done to ensure the stability and breadth of the vocabulary. After research and discussion, the meaning and value of the new vocabulary were screened, and some new vocabulary that were not suitable for the study and lives of international students and those that were beyond the students' Chinese level were deleted. Therefore, new vocabulary was selected to cater to the students' needs. This type of vocabulary was of a cultural nature and reflected the characteristics and values or current topics in Chinese society, which can help international students better understand Chinese culture and society. The selected vocabulary was all within the Chinese proficiency range of intermediate and advanced international students and was deemed to be neither too simple to be challenging nor too complex to be understood.

3.3   Instrumentation

As previously mentioned, in order to answer RQs 2, 3 and 4, the researcher used assessments and questionnaires as the instruments to elicit data:

Part A: New Chinese vocabulary (beyond HSK Syllabus) comprehension level test

Section 1 and section 2 of Part A comprised 30 questions respectively. In section 1 and section 2, there were six categories in total, which are abbreviation, simulation, metaphor, old vocabulary with new meanings, analogy, and neologism in order and each category contained five new Chinese vocabulary.

Section 1: Vocabulary Judgement of Understanding

This section assessed the international students' comprehension level of new Chinese vocabulary in a context-free environment. The questionnaire adopted a 5-point scale (Likert scale): 1 = completely unfamiliar, 2 = familiar but uncertain about the meaning, 3 = can understand the meaning to some extent, 4 = can understand the meaning well but cannot use it, 5 = can understand the meaning well and can use it.

Section 2: Vocabulary Usage and Contextual Understanding

Section 2 used multiple choice questions.

Part B: Investigation of Learners' Background and Learning Problems for New Chinese Vocabulary (beyond HSK Syllabus)

Part B was based on multiple-response questions, with a total of nine questions.

Part C: Chinese Vocabulary Learning Strategies Survey

Part C was measured using a Likert scale, with a total of 16 questions.

Part C examines the learning strategies that international students used when learning new Chinese vocabulary. The questionnaire adopts a 5-point scale (Likert scale): 1 = never do this (almost never or very rarely do this), 2 = rarely do this (do this less than half of the time, but more than level 1), 3 = sometimes do this (do this about half of the time), 4 = usually do this (do this more than half of the time), 5 = always do this (almost always do this).

Assessments and questionnaires were distributed online using Questionnaire Star (https://www.questionstar.com/) and students were given 60 minutes to complete them.

3.4   Data Analysis

Based on the performance of 30 international students in Part A, the 30 students were divided into three groups from high to low performance according to their average scores, with ten students in each group. The group with high performance was grouped into the group 3, the group with medium performance was grouped into the group 2, and the group with low performance was grouped into the group 1. This grouping approach was designed to examine the language learning strategy use of students at different performance levels in more detail and to provide a deeper understanding of the differences between the groups. This study analysed the strategy usage of students in these three different performance groups to understand the differences in strategies among high, medium and low-performing students in learning new Chinese vocabulary, especially in terms of contextual strategies, encoding strategies and emotional communication strategies.

4.   Results

4.1   International Students' Comprehension Level of New Chinese Vocabulary without Context

Table 1 reveals that, in section 1, the average grades of the three student groups follow the order GP3 > GP2 > GP1. This pattern suggests a consistent alignment with the hierarchy of high, medium, and low-performance groups in the study.

Table 1: Comparison Table of Average Scores of International Students in Different Performance Groups without Context

Report

Jmean

GP	Mean	N	Std. Deviation
1	2.93667	10	.249666
2	3.34667	10	.093227
3	3.80000	10	.231474
Total	3.36111	30	.409006

Note: GP refers to the grouping of international students. Jmean refers to the average score of international students in section 1.

The results of the ANOVA of the different performance groups (GP) and the mean for section 1 Jmean, it can be seen that: GP shows a significance level of 0.01 for Jmean (F=44.900, p=0.000), and the specific comparison of the mean scores of different groups is "GP2>GP1; GP3>GP1; GP3>GP2" and the findings for different groups were all significant for Jmean (p<0.05), which means that different performance group samples showed significant differences for the average score of the section 1 (see Table 2).

Table 2: Variance Comparison Table of Different Performance Groups of International Students without Context

ANOVA

JMean

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.730	2	1.865	44.900	.000
Within Groups	1.121	27	.042		
Total	4.851	29			

Based on the six categories in section 1 of In Part A, which are abbreviation (J1-J5), simulation (J6-J10), metaphor (J11-J15), old vocabulary with new meanings (J16-J20), analogy (J21-J25), and neologism (J26-J30) in order, yt can be seen from Figure 1 that the scores of J6-J10 (the lowest score is 1.80, the highest score is 3.07) and J11-J15 (the lowest score is 2.57, the highest score is 4.10) were relatively low. It can be seen that international students have more problems in comprehending the new Chinese vocabulary of simulation and metaphor. Understanding these challenges is crucial to coming up with effective language learning strategies to help international students improve their overall learning. There may be multiple reasons why international students have more problems with simulations and metaphors in learning new Chinese vocabulary. The reasons may include unfamiliarity with the relevant cultural background, lack of exposure and practice, and confusion about the implicit meaning of words.
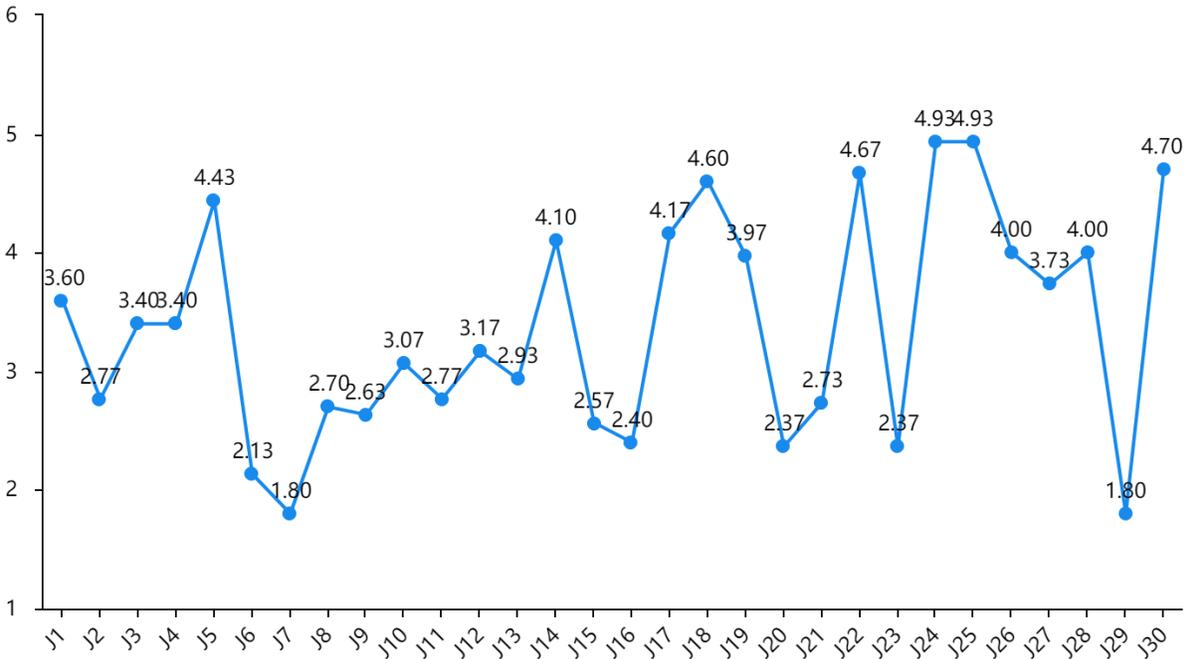
Figure 1 Average Scores of International Students for Understanding New Chinese Words without Context

4.2 International Students' Comprehension Level of New Chinese Vocabulary with Context

Section 2 of Part A examined the comprehension level of new Chinese vocabulary by international students in a contextual environment. Qmean refers to the average score of international students in section 2. Table 3 compares the average grades of the three different groups of students in section 2, the average grades of the three student groups follow the order GP3 > GP2 > GP1. This pattern suggests a consistent alignment with the hierarchy of high, medium, and low-performance groups in the study.

Table 3: Comparison Table of Average Scores of Different Performance Groups of International Students with Context

Report

Qmean

GP	Mean	N	Std. Deviation
1	.5800	10	.09189
2	.6400	10	.06246

3	.8300	10	.04568
Total	.6833	30	.12738

Using ANOVA to analyse the difference between different performance groups (GP) and the section 2 mean (Qmean), it can be seen from Table 4 that GP shows significance at the level of 0.01 for Qmean (F=35.407, p=0.000), and the specific comparison of the mean scores of different groups is "GP3>GP1; GP3>GP2", and the findings for different groups were all significant for Qmean (p<0.05), which means that different performance group samples had significant differences for the average score in this section.

Table 4: Variance Comparison Table of Different Performance Groups of International Students with Context

ANOVA

Qmean

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.341	2	.170	35.407	.000
Within Groups	.130	27	.005		
Total	.471	29			

In section 2, there were six categories in total, which are abbreviation (W1-W5), simulation (W6-W10), metaphor (W11-W15), old vocabulary with new meanings (W16-W20), analogy (W21-W25), and neologism (W26-W30) in order. It can be seen from Figure 2 that international students had lower scores in abbreviation W1-W5 category (the lowest score is 0.33, the highest score is 0.70) in the assessment in this section. In addition, international students appeared to have more problems to comprehend the new Chinese vocabulary in the metaphor W11-W15) category (the lowest score is 1.00, the highest score is 0.40).
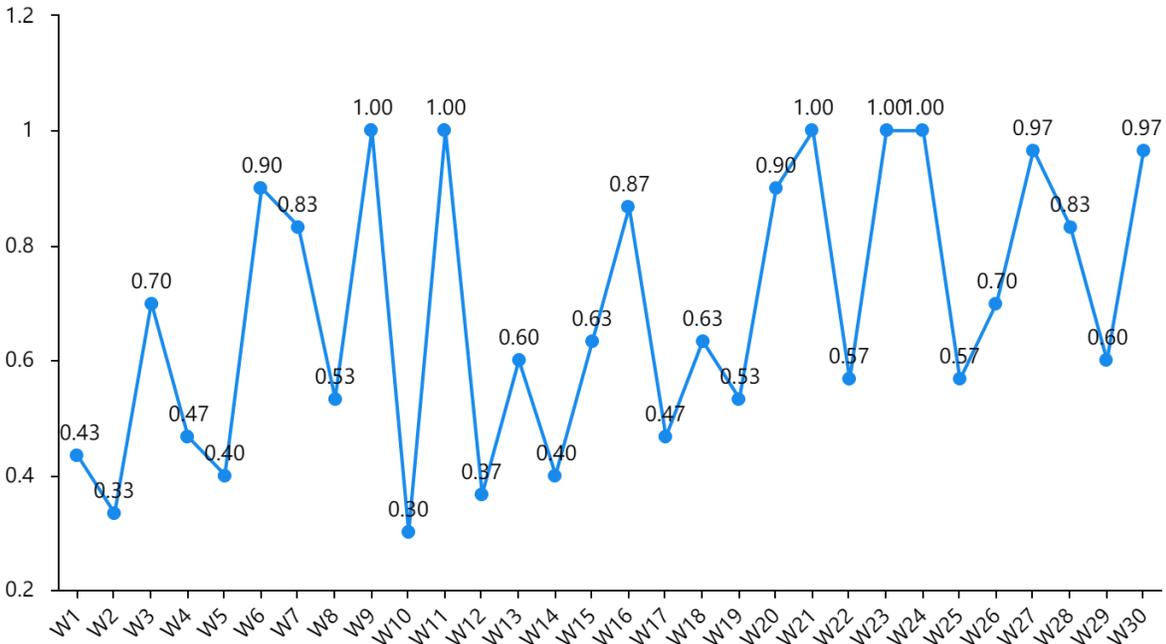
Figure 2: Graph of Average Scores of International Students for Understanding New Chinese Words with Context

Grade1 represents the average score of international students in section 1: Vocabulary Judgement of comprehension level without context, and Grade2 represents the average score of international students in section 2: Vocabulary Usage comprehension level with context. It can be seen from Figure 3 that Grade 2 (68.22) > Grade 1 (67.22), which indicates that international students' comprehension of new Chinese vocabulary with context was higher than the comprehension of new Chinese vocabulary without context.
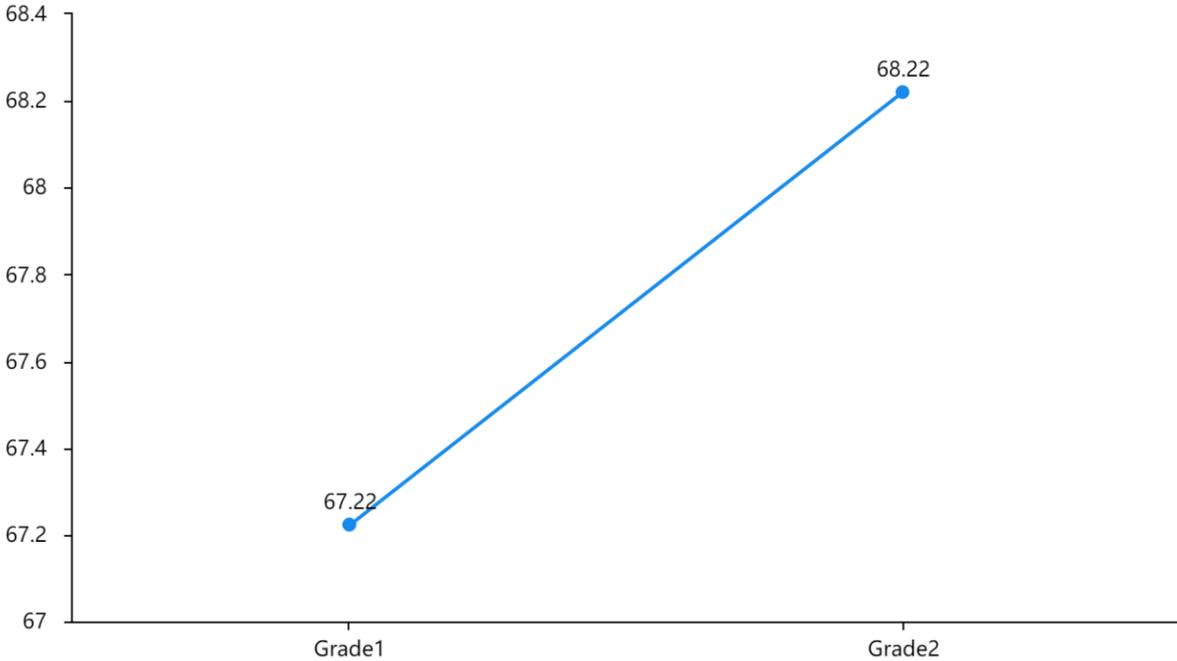
Figure 3: Comparison Table of The Average Score of International Students' Understanding of New Chinese Vocabulary with and without Context

4.3   Problems of International Students When Learning New Chinese Vocabulary

This study investigated the problems that international students encountered when learning new Chinese vocabulary in Part B of the questionnaires. From Table 5, it can be seen that the top three problems that international students faced were B8.6 (90.0%), B8.5 (80.0%) and B8.7 (73.3%), corresponding to E, F and G. The findings showed that the main problems for international students are insufficient understanding of Chinese culture, inability to infer new Chinese vocabulary based on existing vocabulary knowledge, and not knowing how to learn new Chinese vocabulary systematically.

Table 5: Frequency Graph of Problems of Learning New Chinese Vocabulary Faced by International Students

Problems Frequencies		Responses		Percent of	What difficulties have you encountered while learning new Chinese vocabulary (beyond HSK Syllabus)? Please select all that apply.
		N	Percent	Cases	
	B8.1	6	4.2%	20.0%	A. Worried about using the wrong new Chinese vocabulary and dare not use it
	B8.2	15	10.4%	50.0%	B. Lack of communication with native Chinese speakers
	B8.3	9	6.3%	30.0%	C. Difficulty in memorising vocabulary
	B8.4	20	13.9%	66.7%	D. New vocabulary are being updated too quickly
Problems	B8.5	24	16.7%	80.0%	E. Poor understanding of Chinese culture leads to the inability to understand the inherent meaning of new Chinese vocabulary
	B8.6	27	18.8%	90.0%	F. The word meaning of new Chinese vocabulary cannot be inferred based on the existing vocabulary knowledge
	B8.7	22	15.3%	73.3%	G. Not knowing how to systematically learn the new Chinese vocabulary
	B8.8	21	14.6%	70.0%	H. No further study when encountering unfamiliar vocabulary
Total		144	100.0%	480.0%	

a. Dichotomy group tabulated at value 1.

4.4 Learning Strategies of International Students' when Learning New Chinese Vocabulary

The correlation analysis presented in Table 6 reveals important insights regarding the relationship between the average scores of international students in different sections of the study. Specifically, the Pearson correlation coefficient of 0.759 between "Jmean" (average score in section 1) and

"Vmean" (average score in learning strategies) suggests a strong and positive relationship. This correlation is statistically significant at the 0.01 level, indicating that as the average score of international students in Section 1 (comprehension of new Chinese vocabulary) increased, their average score in learning strategies also tended to increase positively. In other words, students who performed better in vocabulary comprehension were more likely to use effective learning strategies.

Table 6: Comparison of International Students' Average Means of Learning Strategies and comprehension level of New Chinese Vocabulary

Pearson Correlation

	Jmean	Qmean
Vmean	0.759**	0.806**

* p<0.05 ** p<0.01

Note: GP refers to the grouping of international students. Vmean represents the average score of international students in the learning strategy section.

Similarly, the correlation coefficient of 0.806 between "Qmean" (average score in section 2) and "Vmean" (average score in learning strategies) is also highly positive and statistically significant at the 0.01 level. This indicates a significant positive correlation between students' performance in Section 2 and their average score in learning strategies. In essence, students who excelled in Section 2 tended to employ more effective learning strategies. These findings collectively suggest that there is a strong and positive relationship between the comprehension level of new Chinese vocabulary and the use of effective learning strategies among international students in the study. This implies that students who perform well in vocabulary comprehension are more likely to apply successful learning strategies, which is a valuable insight for understanding and improving the learning process for these students.

As evident from Table 7, the utilisation of variance analysis to explore the disparity between GP and Vmean of learning strategies reveals a noteworthy significance in the average scores of diverse performance groups concerning international students' learning strategies (p<0.05). A more detailed analysis demonstrates that the average scores of different performance groups on learning strategies exhibited a remarkable level of 0.01 (F=35.220, p=0.000), signifying

that the average scores of various performance groups on learning strategies exhibited significant differences.

Table 7: Variance Comparison Table of the Scores of Different Performance Groups of International Students in the Learning Strategies

ANOVA

Vmean

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.925	2	2.463	35.220	.000
Within Groups	1.888	27	.070		
Total	6.813	29			

A Chi-Square test (crossover analysis) described in this context was employed to examine the relationship between the 16 learning strategies represented by V1-V16 and different performance groups (GP) (see Table 8). The key observations are that for seven items (V1, V3, V4, V6, V7, V8, and V12), different GP samples did not exhibit significant differences (p>0.05). This suggests that the performance of individuals across different performance groups remained consistent for these specific learning strategies. In other words, the variation in performance was not statistically significant for these strategies across the groups.

Table 8: Chi-Square Cross Plot of Learning Strategies Used by Different Performance Groups

Chi-Square Analysis

Items	Scales	GP(%) 1.0	2.0	3.0	Total	χ2☐	p☐
V1	2.0	5(50.00)	5(50.00)	1(10.00)	11(36.67)		
	3.0	4(40.00)	5(50.00)	6(60.00)	15(50.00)		
	4.0	1(10.00)	0(0.00)	2(20.00)	3(10.00)	7.309	0.293
	5.0	0(0.00)	0(0.00)	1(10.00)	1(3.33)		
Total		10	10	10	30		
V2	1.0	1(10.00)	0(0.00)	0(0.00)	1(3.33)		
	2.0	5(50.00)	8(80.00)	2(20.00)	15(50.00)	9.600	0.048*
	3.0	4(40.00)	2(20.00)	8(80.00)	14(46.67)		
Total		10	10	10	30		

Chi-Square Analysis

Items	Scales	GP(%)			Total	$\chi2\square$	$p\square$
		1.0	2.0	3.0			
	1.0	2(20.00)	1(10.00)	0(0.00)	3(10.00)		
V3	2.0	5(50.00)	6(60.00)	5(50.00)	16(53.33)	2.852	0.583
	3.0	3(30.00)	3(30.00)	5(50.00)	11(36.67)		
Total		10	10	10	30		
	1.0	0(0.00)	2(20.00)	1(10.00)	3(10.00)		
V4	2.0	6(60.00)	5(50.00)	3(30.00)	14(46.67)		
	3.0	4(40.00)	3(30.00)	5(50.00)	12(40.00)	5.500	0.481
	4.0	0(0.00)	0(0.00)	1(10.00)	1(3.33)		
Total		10	10	10	30		
	1.0	0(0.00)	1(10.00)	0(0.00)	1(3.33)		
V5	3.0	2(20.00)	1(10.00)	0(0.00)	3(10.00)		
	4.0	5(50.00)	7(70.00)	2(20.00)	14(46.67)	13.214	0.040*
	5.0	3(30.00)	1(10.00)	8(80.00)	12(40.00)		
Total		10	10	10	30		
	1.0	1(10.00)	0(0.00)	0(0.00)	1(3.33)		
V6	2.0	6(60.00)	7(70.00)	3(30.00)	16(53.33)		
	3.0	2(20.00)	3(30.00)	6(60.00)	11(36.67)	6.989	0.322
	4.0	1(10.00)	0(0.00)	1(10.00)	2(6.67)		
Total		10	10	10	30		
V7	2.0	8(80.00)	7(70.00)	4(40.00)	19(63.33)		
	3.0	2(20.00)	3(30.00)	6(60.00)	11(36.67)	3.732	0.155
Total		10	10	10	30		
	1.0	2(20.00)	3(30.00)	0(0.00)	5(16.67)		
	2.0	5(50.00)	5(50.00)	3(30.00)	13(43.33)		
V8	3.0	3(30.00)	1(10.00)	4(40.00)	8(26.67)	9.165	0.329
	4.0	0(0.00)	1(10.00)	2(20.00)	3(10.00)		
	5.0	0(0.00)	0(0.00)	1(10.00)	1(3.33)		
Total		10	10	10	30		
	1.0	2(20.00)	2(20.00)	0(0.00)	4(13.33)		
	2.0	3(30.00)	5(50.00)	0(0.00)	8(26.67)		
V9	3.0	5(50.00)	1(10.00)	7(70.00)	13(43.33)	13.858	0.031*
	4.0	0(0.00)	2(20.00)	3(30.00)	5(16.67)		
Total		10	10	10	30		
V10	2.0	1(10.00)	1(10.00)	0(0.00)	2(6.67)	15.967	0.014*

Chi-Square Analysis

Items	Scales	GP(%)			Total	χ2	p
		1.0	2.0	3.0			
	3.0	3(30.00)	1(10.00)	0(0.00)	4(13.33)		
	4.0	4(40.00)	8(80.00)	3(30.00)	15(50.00)		
	5.0	2(20.00)	0(0.00)	7(70.00)	9(30.00)		
Total		10	10	10	30		
	2.0	1(10.00)	0(0.00)	0(0.00)	1(3.33)		
V11	3.0	3(30.00)	6(60.00)	0(0.00)	9(30.00)		
	4.0	5(50.00)	3(30.00)	1(10.00)	9(30.00)	22.303	0.001**
	5.0	1(10.00)	1(10.00)	9(90.00)	11(36.67)		
Total		10	10	10	30		
	3.0	2(20.00)	3(30.00)	0(0.00)	5(16.67)		
V12	4.0	5(50.00)	5(50.00)	2(20.00)	12(40.00)	9.069	0.059
	5.0	3(30.00)	2(20.00)	8(80.00)	13(43.33)		
Total		10	10	10	30		
	2.0	5(50.00)	3(30.00)	0(0.00)	8(26.67)		
V13	3.0	4(40.00)	6(60.00)	2(20.00)	12(40.00)		
	4.0	1(10.00)	1(10.00)	7(70.00)	9(30.00)	16.750	0.010*
	5.0	0(0.00)	0(0.00)	1(10.00)	1(3.33)		
Total		10	10	10	30		
	1.0	1(10.00)	0(0.00)	0(0.00)	1(3.33)		
	2.0	2(20.00)	3(30.00)	0(0.00)	5(16.67)		
V14	3.0	3(30.00)	6(60.00)	1(10.00)	10(33.33)	15.900	0.044*
	4.0	3(30.00)	1(10.00)	6(60.00)	10(33.33)		
	5.0	1(10.00)	0(0.00)	3(30.00)	4(13.33)		
Total		10	10	10	30		
	2.0	1(10.00)	0(0.00)	0(0.00)	1(3.33)		
V15	3.0	7(70.00)	2(20.00)	0(0.00)	9(30.00)		
	4.0	1(10.00)	6(60.00)	1(10.00)	8(26.67)	26.417	0.000**
	5.0	1(10.00)	2(20.00)	9(90.00)	12(40.00)		
Total		10	10	10	30		
	2.0	4(40.00)	2(20.00)	0(0.00)	6(20.00)		
V16	3.0	5(50.00)	8(80.00)	3(30.00)	16(53.33)		
	4.0	1(10.00)	0(0.00)	6(60.00)	7(23.33)	17.232	0.008**
	5.0	0(0.00)	0(0.00)	1(10.00)	1(3.33)		
Total		10	10	10	30		

Chi-Square Analysis

Items	Scales	GP(%)			Total	χ^2	p
		1.0	2.0	3.0			

* p<0.05 ** p<0.01

There were nine items with significant differences among the GP samples: V2, V5, V9, V10, V11, V13, V14, V15, and V16. This indicates that these particular learning strategies exhibited variations in performance across the different groups. The results show that in terms of contextual strategies (including V5, V7 and V12), coding strategies (including V9, V10 and V11), and emotional communication strategies (including V13 to V16), the total score of the high-performance group was significantly higher than that of the medium-performance group and low-performance group. In addition, the number of students with high scores in the high-performance group far outnumbered those in the medium and low-performance groups. This finding suggests that the high-performance group showed greater efficacy in applying situational, encoding, and emotional communication strategies, which may contribute to their better performance in specific tasks or situations.

5. Discussion

The results suggest that it is more difficult for international students to understand simulation and metaphor without context, and it is more difficult for international students to understand simulation with context. Overall, there are significant differences in the comprehension level of new Chinese vocabulary among the high, medium and low-performance groups, and the average scores of international students in the context-based questions are slightly higher than those in the no-context questions. The main problems faced by international students when learning new Chinese vocabulary include insufficient understanding of Chinese culture, inability to infer new Chinese vocabulary based on existing vocabulary knowledge and did not know how to learn new Chinese vocabulary systematically.

The findings of this study highlight the importance of providing international students with comprehensive and context-rich language learning materials. The findings show that for abstract or metaphorical new Chinese vocabulary, incorporating context can enhance international students' comprehension level. Furthermore, addressing the challenges associated with cultural understanding and lexical reasoning is critical to improving the overall performance of language

learners. In order to improve international students' problems in learning new Chinese vocabulary, this study will provide corresponding suggestions for these aspects.

In terms of explicit and implicit learning, international students actively use explicit learning to help them learn new Chinese vocabulary. Explicit learning can help learners master the characteristics of new Chinese vocabulary through direct learning and using learning strategies. The use of coding strategies and contextual strategies can help international students better understand and remember new vocabulary (Hulstijn, 2013). By studying Chinese culture and context related to the new Chinese vocabulary, learners can better understand the inner meaning of the new Chinese vocabulary. Discussing vocabulary-related cultural topics also makes the vocabulary learning process more engaging. Providing clear explanations and examples can help international students master the characteristics of new Chinese vocabulary consciously. On the other hand, international students can strengthen internalisation through implicit learning. During the learning process, international students can strengthen the internalisation of vocabulary through exposure to and the use of a large number of new Chinese vocabulary. Adopting emotional communication strategies to promote the input and output of new Chinese vocabulary, such as increasing communication with native Chinese speakers in real contexts and being exposed to a large number of new Chinese vocabulary on social media could promote implicit learning (Liu, 2021).

Based on the noticing hypothesis, it can be said that *noticing* plays an important role in vocabulary learning, and thus, international students need to consciously pay attention to the formal characteristics of language input to convert language input into intake (Schmidt, 1990). International students should pay special attention to language input when learning new Chinese vocabulary, such as paying attention to the grammatical features of new Chinese vocabulary. In terms of abstraction which refers to the vocabulary that expresses non-specific objects such as concepts, emotions, and thoughts, abstract vocabulary usually cannot be directly observed or felt through the senses, such as love, freedom, happiness and friendship. This is unlike concrete objects or scenes as abstract vocabulary has non-specificity and polysemy. Such vocabulary needs to be connected to known or specific things or situations through association to understand them. At the same time, it is also crucial to *notice* the output of new vocabulary. International students should actively practise and seek feedback by using new Chinese vocabulary in real contexts to improve their vocabulary learning problems (Jing, 2018).

The depth and elaboration of processing theory suggest that to successfully memorise and maintain the knowledge of new Chinese vocabulary noticed, international students need to perform deeper processing of these new vocabulary (Craik & Lockhart, 1972) such as through the use of pictures or videos to memorise new vocabulary and linking the features of the new vocabulary with other previously learned vocabulary and features to create stories or connections (He, 2021). When students engage in deep processing, such as analysing the meaning, connecting it to prior knowledge, and applying it in different contexts, they are more likely to comprehend and remember the new vocabulary effectively (Hamidani *et al*, 2022). This deeper semantic processing helps prolong memory traces and improve vocabulary retention.

By actively using explicit learning and implicit learning, strengthening concentration and deep processing of new vocabulary, it is suggested that international students can better understand and master new Chinese vocabulary more effectively and improve their language usability. At the same time, through practice and feedback, the learning process can be continuously optimised to positively influence students' learning of new Chinese vocabulary.

6.   Conclusion

This study investigated international students' comprehension level of new Chinese vocabulary and explored the problems they face in the learning process. The study addressed four key research questions, and the findings suggest that the comprehension of new Chinese vocabulary varies depending on the presence of context. In addition, significant differences in comprehension level were observed among the high, medium, and low-performance groups, and key issues impeding international students' new vocabulary learning were identified, including insufficient knowledge of Chinese culture, difficulties inferring word meanings, and lack of useful learning strategies.

This study also suggests several recommendations. First of all, encouraging students to take the initiative to use explicit and implicit learning strategies to master the characteristics of new Chinese vocabulary. Utilising coding strategies and contextual strategies can enhance memory and comprehension level. Second, the emphasis on *noticing* emphasises the importance of consciously paying attention to language input and using language in real contexts. In addition, focusing on abstract and metaphorical vocabulary requires linking them to specific contexts or known objects to deepen comprehension. Third, deep processing, such as analysing meaning,

connecting prior knowledge, and applying this in various contexts can enhance understanding and memory.

These suggestions can help international students better cope with the problems they face when learning new Chinese vocabulary, thereby improving the language proficiency and communication skills of these students who are learning Chinese as a foreign language.

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