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Strategies Use in Chinese Language Learning among Non-Native Chinese Language Learners in Malaysia

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Abstract

This study focused on the use of learning strategies in Chinese-as-a-second-language acquisition among former Chinese National Type School (SJKC) non-native Chinese language (CL) learners. The strategies use was observed in terms of their process of learning and language used, namely language learning strategies (LLS) and language used strategies (LUS). Both LLS and LUS were further investigated for vocabulary, reading, and writing (namely VS, RS, and WS). A questionnaire adapted from Cohen, Oxford, and Chi's (2002) Language Strategy Use Inventory was applied to 79 former SJKC non-native CL learners in order to collect data on their favourite learning strategies. With regard to the quantitative data analysis, descriptive statistics, a series of t-tests*, ANOVA,* and correlational analyses were used. Findings of this study indicated that the participants put more effort in writing. Findings also showed that there was a higher rate of LUS among high proficiency CL learners. It was also revealed in this study that there was a significant relationship between vocabulary strategy (VS), reading strategy (RS) and writing strategy (WS), and that WS is highly dependable on their RS and VS. Consequently, students need to strengthen their RS and VS specifically, in order to better perform WS, which leads to a higher level of language proficiency.

Keywords: Strategies, Learning, Chinese Language, Non-native Chinese Language Learners, Malaysia

Introduction

Many academics have pointed to learning strategies as being just as important to students' acquisition of second languages as motivation (Ellis, 1994; O'Malley & Chamot, 1990; Oxford, 1990). According to Oxford (1990), learning strategies involve steps taken by students to enhance their own learning. Strategies are especially important for language learning because they are tools for students to actively be involved in developing communicative competence via retaining information. Through this special thought, the second language learners can find opportunity to achieve proficiency in language and hence develop self-confidence (O'Malley & Chamot, 1990; Oxford, 1990).

Literature Review

Mastering in language requires special process. The process involves language learning strategies (LLS) and language use strategies (LUS). In classroom learning, these two LLS and LUS needs to be integrated, thus students can demonstrate their language ability. In other words, the language ability needs to be observed through learning and application of what has been learned (Cohen, 2011; Oxford, 2011). Figure 1 shows the understanding of achieving proficiency level of language. It describes the importance of learning and applying the language through the three main strategies namely vocabulary strategy (VS), reading strategy (RS) and writing strategy (WS). In this case, students must completely engage in learning and applying all the strategies (VS, RS, and WS).

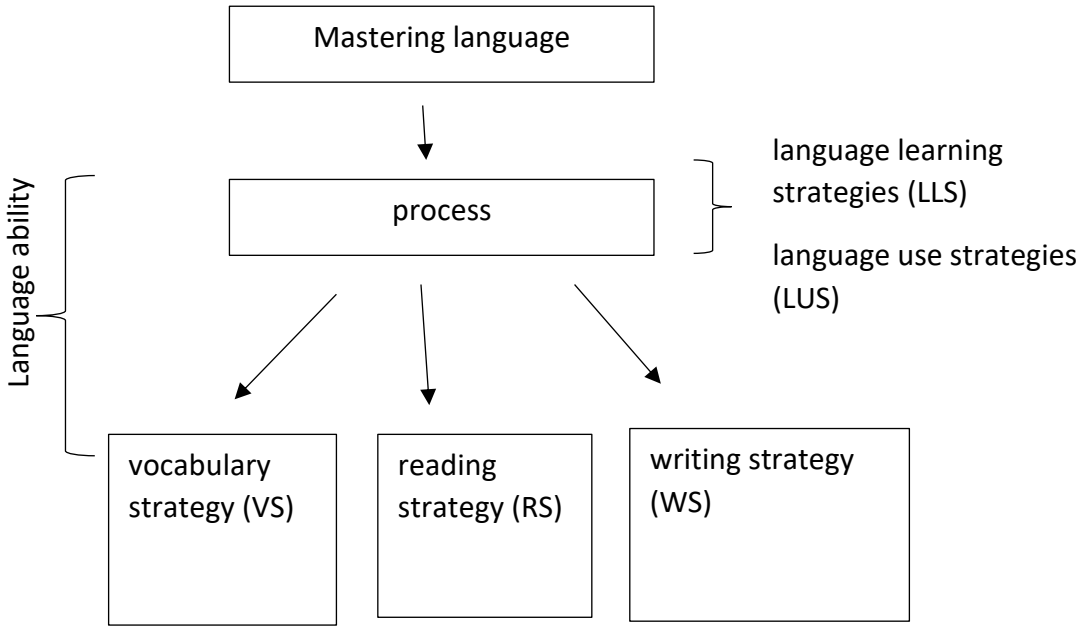


Figure 1 Mastering Language

Many past studies on language learning strategies in Malaysia have focused on the study of English language learning strategies. For example, Lee et al (2016) studied the successful language learning strategies used by successful Year 5 English as a second language (ESL) Iban learners in Mukah, Sarawak. Abdul Razak and Babikkoi (2014) looked further into the strategy used among ESL students in Malaysian secondary schools with regards to inter-cultural communication. Other studies investigated the learning strategies used by ESL students at the

tertiary level in Malaysian universities. Mohammadipour et al (2018) investigated the relationships between language learning strategies and positive emotions among Malaysian ESL undergraduates. Asgari and Mustapha (2011) studied the types of vocabulary learning strategies used by ESL students at the University of Putra Malaysia.

Even though there have been numerous studies on learning strategies in the field of teaching English as a second language, there has been little research on how students who are learning Chinese as a second, third, or foreign language (CSL/CFL) involve in language learning and employ learning techniques (namely LLS and LUS). There are only a few that study Mandarin as a foreign or third language learning in the Malaysia tertiary education context, and most of them studied Chinese vocabulary learning strategies (Lam & Kuan, 2019; Lee et al., 2017; Tan & Hoe, 2009; Yee et al., 2021). It was agreed that language learning and language used should take place in order to improve vocabulary, reading comprehension, and writing. Therefore, it is extremely difficult to acquire and use vocabulary strategy (VS), reading strategy (RS), and writing strategy (WS) without more observation.

Lew (2020) also looked at the cognitive techniques used by students at Universiti Teknologi MARA Perlis to study Mandarin. While at Universiti Malaysia Kelantan, Lee et al (2019) use constructivism to investigate students' attitudes on learning Mandarin lexicon. Chinese National Type School (SJKC) non-native Chinese language learners' learning strategies have not yet been the subject of a research study. For these learners, Chinese is a second language (CSL). The effectiveness of the learner's learning strategies (in VS, RS, and WS) is a key component of language learning success. Hence, there is a need to conduct this study to identify the strategies (VS, RS, and WS) learned and used (or applied) by high-achieving Chinese language (CL) learners in which contribute to their success in learning Chinese, and that these strategies can be taught to other CL learners to help them improve their Chinese proficiency. The CL learners in this study refer to two groups of former SJKC non-Chinese students who has passed CL subject in Primary School Assessment Test (UPSR) and graduated from university with a bachelor's degree or currently study in a university or college; the other group is former SJKC non-Chinese students who continued CL studies in secondary school or at tertiary level after graduated from SJKC.

The objective of this study is to explore the language learning strategies and language used strategies (LLS and LUS) used by this group of learners in mastering Chinese language through vocabulary strategy (VS), reading strategy (RS) and writing strategy (WS). Four research objectives relating to this goal are stated as follows:

1. To identify the preference learning strategies used, specifically in the acquisition of vocabulary, reading skill, and writing skill among the non-native Chinese language learners.
2. To identify the level of learning strategies, specifically in language learning strategy (LLS) and language use strategy (LUS) among the non-native Chinese language learners.
3. To identify differences in language use strategies (LUS) between high- and low proficiency level Chinese language learners.
4. To determine the relationship between (a) language learning strategy (LLS) and language use strategy (LUS); (b) relationship between vocabulary strategy (VS), reading strategy (RS) and writing strategy (WS).

Research Questions

To meet the gap of the field of study, five research questions were formulated, and they are presented as follows:

1. What is the preference learning strategies used [vocabulary strategy (VS), reading strategy (RS) and writing strategy (WS)] among the non-native Chinese language learners?
2. What is the level of strategies used, specifically in language learning strategy (LLS) and language use strategy (LUS) among the non-native Chinese language learners?
3. Is there any difference in language use strategies (LUS) between high and low proficiency Chinese language learners?
4. Is there any significant relationship between LLS and LUS?
5. Is there any significant relationship between VS, RS, and WS?

The findings of this study offer some useful CL learning strategies and meaningful learning experiences to enhance the learning of prospective non-Chinese students in SJKCs. In addition, non-Chinese parents, teachers from SJKC, and non-Chinese learners from other institutions also benefit from it. It is hoped that these research findings can fill the research gap in the body of knowledge in the field of non-native speaker's language acquisition in Chinese.

Method

This study employed a survey research design to collect quantitative data. Snowball sampling technique was used to involve 79 participants. The survey instrument used to collect quantitative data in this study is an online Google form. Questionnaires were used to gather information from the former SJKC non-native CL learners on their CL proficiency level, and the strategies used to enhance CL learning. The questionnaires consisted of three parts. Part A asked for each respondent's demographic information. Part B require respondents to self-report their CL competency which is based on the Common European Framework of Reference (CEFR) categorization. Part C was adapted from a skill-based inventory of language strategy use developed by Cohen, Oxford & Chi's (2002).

The purpose of this survey is to find out what are the learning strategies used by the non-native CL learners to master CL. Table 1 shows the contain of the adapted questionnaires. The questionnaires consist of 25 statements concerning the three major CL skills, namely vocabulary learning (14 items), reading (6 items), and writing (5 items). Vocabulary Strategy Use include strategies to learn new words, strategies to review vocabulary, strategies to recall vocabulary, and strategies to make use of new vocabulary. In addition, reading strategy and writing strategy have two questions each. For Reading Strategy Use, there are strategies to improve learner's reading ability and strategies for when words and grammatical structures are not understood. Writing Strategy Use include strategies for basic writing and strategies for writing an essay. The 4-point Likert scales were used in categories the strategies use. There were: (1) This strategy doesn't fit for me; (2) I've never used this strategy but am interested in it; (3) I have tried this strategy and would use it again; and (4) I use this strategy and like it. The focus of this measurement is not on the frequency of using certain strategies, but more on the learner's preference for the use of strategies. Two experts were consulted to establish the content validity of the instrument. Survey instrument reliability analysis in Table 2 showed a convincing and acceptable level of Cronbach's Alpha values= 0.894.

Table 1
Language Strategy Use Questionnaires Adapted from Cohen, Oxford & Chi (2002)

Strategies by skill	Strategies (LLS & LUS)	No of Items
Vocabulary Strategy (VS)	Strategies to learn new words; Strategies to review vocabulary; Strategies to recall vocabulary; Strategies to make use of new vocabulary.	1-14 (14 items)
Reading Strategy (RS)	Strategies to improve my reading ability; Strategies for when words and grammatical structures are not understood.	15-20 (6 items)
Writing Strategy (WS)	Strategies for basic writing; Strategies for writing an essay.	21-25 (5 items)

Note: all items in VS, RS, and WS are then categorised into LLS and LUS

Table 2
Reliability Statistics

Cronbach's Alpha	N of Items
0.894	25

The analysis and categorisation of non-native CL learner strategies used in learning vocabulary, reading and writing were based on Cohen's (2011) Language Learning Strategies vs. Language Use Strategies (LLS vs. LUS), Learning Strategies by Skill Area, and Oxford's (1990) System of Language Learning Strategies. Mean score of each strategy use shows the preference level of the learner in using that particular strategy for learning CL.

The Statistical Package for Social Science software (SPSS), version 23, was used for the quantitative data analysis. The descriptive statistics (i.e., Mean, and Standard Deviation) were used for answering research question one, and inferential statistics (i.e., t-test, correlational analysis, ANOVA) were used for the analysis of the data for research question two to five.

Results

This section presents the findings of research question one to five, and discusses the results in relation to the literature.

Respondent Demographics

This section reports the demographic data of the participants. 79 participants of this study were from three different ethnic backgrounds, in which 54 were Malays (68.4%), 13 were Sarawak Bumiputera (16.5%) and 12 of them were Sabah Bumiputera (15.2%). The gender composition of the participants were females as the majority. There were 60 females (75.9%) and 19 males (24.1%). Their age distribution was ranging from 15 to 40 and above. As shown in Table 3, the age group of 20-24 were the majority which took up 79.7% with 63 participants in number. For the age group of 15-19, it is 16.5% with 13 participants. Whereas age group 25-29, 30-34, 40 and above only occupied 1.3% each.

Table 3
Age Groups

Age Groups	Frequency	Percent (%)	Cumulative Percent (%)
15-19	13	16.5	16.5
20-24	63	79.7	96.2
25-29	1	1.3	97.5
30-34	1	1.3	98.7
40 and above	1	1.3	100.0
Total	79	100.0	

Table 4 shows the respondent's self-report CL proficiency level. The survey participants of this study were 79 non-native CL students who had at least 6 years of experience in learning CL at SJKCs. The 79 respondents were divided into two groups based on their self-reported CL competency, which was based on the Common European Framework of Reference (CEFR) categorization. Low proficiency (LP) referred to participants who rated themselves A1(beginner), A2 (elementary) or B1 (intermediate), while high proficiency (HP) referred to participants who rated themselves B2 (upper intermediate), C1 (effective operational proficiency or advanced) or C2 (mastery). As shown in Table 4, the vast majority (78.50%) of the participants are LP learners, and HP learners accounting for only 21.50%.

Table 4
Respondent's Self-Report Chinese Language Proficiency Level

Group	Proficiency level	Frequency	Percent	Total
Low Proficiency	A1 Beginner	7	8.9	62 (78.50%)
	A2 Elementary	23	29.1	
	B1 Intermediate	32	40.5	
High Proficiency	B2 Upper Intermediate	12	15.2	17 (21.50%)
	C1 Advanced	3	3.8	
	C2 Mastery or proficiency	2	2.5	
Total		79	100.0	100.0%

Strategies used by the non-native Chinese language learners to master Chinese language, specifically in vocabulary learning, reading, and writing

The following analysis aim to answer research question one (RQ1).

Research question one: What is the preference learning strategies used [vocabulary strategy (VS), reading strategy (RS) and writing strategy (WS)] among the non-native Chinese language learners?

Table 5 answers research question one. It shows the average of rating for vocabulary strategy (VS) (M=2.94; SD=0.44), reading strategy (RS) (M=3.11; SD=0.64), and writing strategy (WS) (M=3.21; SD=0.62). The finding revealed that the participants provided the highest rating in writing, followed by reading, and vocabulary.

Table 5
Descriptive Statistics of VS, RS, and WS

	N	Mean (M)	Std. Deviation (SD)
Vocabulary (VS)	79	2.94	0.44
Reading (RS)	79	3.11	0.64
Writing (WS)	79	3.21	0.62
Valid N (listwise)	79		

The strategies coverage for VS, RS, and WS are illustrated as below

(a) Vocabulary Strategies

Vocabulary acquisition strategies (VS) use measure consist of 14 items evaluate respondent's preferable strategies use to learn new words, review vocabulary, recall vocabulary, and to make use of new vocabulary. Table 6 shows VS use encompass 10 language learning strategies (LLS), and four language use strategies (LUS). From the perspective of Oxford's (1990) System of Language Learning Strategies (by function), the strategies use in learning Chinese vocabulary mainly involves memory and cognitive strategies only.

Among the 14 vocabulary learning strategies shown in Table 6, seven most preferred strategies used by CL learners are "Go over new words" (M=3.25, SD=0.78), "Review words periodically" (M=3.20, SD=0.77), "Look at meaningful parts of the word" (M=3.19, SD=0.89), "Pay attention to the structure of the new word" (M=3.13, SD=0.81), "Practice using familiar words" (M=3.09, SD=0.79), "Associate the sound of the new word with the sound of a word that is familiar to me" (M=3.04, SD=0.88), and "Visualize the spelling of new words" (M=3.03, SD=0.91). All these strategies involve strategies for memory, retrieval, identifying, and rehearsal strategies. Out of seven most preferred strategies use, five were cognitive strategies, and only two memory strategies. These data showed that the CL learners of this study fond to use cognitive strategy most in vocabulary acquisition as compared to memory strategy. The five least favourite learning strategies are all memory strategies. Among them, "Use flash cards to learn new words" (M=2.46, SD=1.01） was last in line. This finding shown CL learners do not like it and use this strategy less often.

Table 6
Vocabulary Strategies Use

No.	Item: Learning strategies (By skill area)	N	Mean（M）	SD	Preference Level	LLS vs. LUS	LLS (Oxford (1990) by function)
1.	Go over new words often when I first learn them to help me remember them.	79	3.25	0.78	high	LLS-memory	Memory
2.	Review words periodically so I don't forget them.	79	3.20	0.77	high	LLS-memory	Memory
3.	Look at meaningful parts of the word to remind me of the meaning of the word.	79	3.19	0.89	high	LUS-retrieval	Cognitive
4.	Pay attention to the structure of the new word.	79	3.13	0.81	high	LLS-identifying	Cognitive
5.	Practice using familiar words in different ways.	79	3.09	0.79	high	LUS-rehearsal	Cognitive
6.	Associate the sound of the new word with the sound of a word that is familiar to me.	79	3.04	0.88	high	LLS-identifying	Cognitive
7.	Visualize the spelling of new words in my mind.	79	3.03	0.91	high	LUS-retrieval	Cognitive
8.	Practice new action verbs by acting them out.	79	2.90	0.94	moderate	LLS-memory	Memory
9.	Try using new words in a variety of ways.	79	2.89	0.88	moderate	LUS-rehearsal	Cognitive
10.	Break the word into parts that I can identify.	79	2.78	0.87	moderate	LLS-memory	Memory
11.	List new words with other words that are related to it.	79	2.76	0.92	moderate	LLS-memory	Memory
12.	Use rhyming to remember new words.	79	2.76	1.02	moderate	LLS-grouping	Memory
13.	Make a mental image of new words.	79	2.65	0.88	moderate	LLS-rehearsal	Memory
14.	Use flash cards in a systematic way to learn new words.	79	2.46	1.01	moderate	LLS-memory	Memory

(b) Reading Strategies

CL learners' reading strategies use were discussed from two aspect, which are strategies to improve reading ability, and strategies for when words and grammatical structures are not understood. Reading strategies use in Table 7 consist of six LUS strategies, i.e., four rehearsal and two coping strategies. The four strategies that CL learners like the most are "Read a story or dialogue several times until I understand it" (M=3.41, SD=0.74), "Use a bilingual dictionary to get a sense of what the equivalent word in my native language would be" (M=3.30. SD=0.87), "Guess the approximate meaning by using clues from the context of the reading material" (M=3.16, SD=0.90) and "Find reading material that is at or near my level" (M=3.11, SD=0.93). These strategies include Cognitive, Compensation, and Metacognitive strategies.

Table 7
Reading Strategy Use

Item: Learning strategies (By skill area)	N	Mean	SD	Preference Level	LLS vs. LUS	Learning Strategies (Oxford (1990) by function)
Strategies to improve my reading ability						
Read a story or dialogue several times until I understand it.	79	3.41	0.74	high	LUS-rehearsal	Cognitive
Find reading material that is at or near my level.	79	3.11	0.93	high	LUS-rehearsal	Metacognitive
Read as much as possible in the target language.	79	2.89	0.97	moderate	LUS-rehearsal	Metacognitive
Try to find things to read for pleasure in the target language.	79	2.78	0.94	moderate	LUS-rehearsal	Cognitive
Strategies for when words and grammatical structures are not understood						
Use a bilingual dictionary to get a sense of what the equivalent word in my native language would be.	79	3.30	0.87	high	LUS – coping	Compensation
Guess the approximate meaning by using clues from the context of the reading material.	79	3.16	0.90	high	LUS-coping	Cognitive

(c) Writing Strategies

Writing strategies use in Table 8 comprised of three strategies for "basic writing" and two strategies for "writing an essay". Same as reading strategy use, all the five writing skill strategies used are LUS involve two rehearsal and three coping strategies. From the language function perspectives, these measures consist of four cognitive and one compensation

strategies. All the five strategies are strategies that students love to use to strengthen their writing skills. The mean values were ranging from 3.06 to 3.41.

Table 8
Writing Strategy Use

Item: Learning strategies (By skill area)	N	Mean	SD	Preference Level	LLS vs. LUS	Learning Strategies (Oxford (1990) by function)
Strategies for basic writing						
Practice writing the new words in the target language.	79	3.28	0.82	High	LUS-rehearsal	Cognitive
Take class notes in the target language as much as I can.	79	3.15	0.91	High	LUS-rehearsal	Cognitive
Try writing different kinds of texts in the target language (e.g., personal notes, messages, letters, etc).	79	3.13	0.85	High	LUS-rehearsal	Cognitive
Strategies for writing an essay						
Use reference materials such as a glossary, a dictionary, or a thesaurus to help find or verify words in the target language.	79	3.41	0.82	High	LUS-coping	Compensation
Find a different way to express the idea when I don't know the correct expression (e.g., use a synonym or describe the idea).	79	3.06	0.90	High	LUS-coping	Cognitive

Language Learning Strategies (LLS) and Language Use Strategies (LUS)

The following analysis aim to answer research question two (RQ2).

Research question two: What is the level of strategies used, specifically in language learning strategies (LLS) and language use strategies (LUS) among the non-native Chinese language learners?

CL learners needs to be competent in language learning strategies (LLS) and language use strategies (LUS). LLS are required to get acquisition of language vocabulary and language content. LUS are required to apply the vocabulary learned when reading and writing CL (refer Table 7 and Table 8). The following table (Table 9) reports the CL learners have a higher competent level in LUS (M=3.13; SD=0.54) compared to LLS (M=2.89; SD=0.45). Hence, they

were more confident in applying vocabulary learned for the writing of essay even though they showed less satisfactory on their learning of language.

Table 9
Descriptive Statistics for LLS and LUS

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	LLS	2.892	79	0.446	0.050
	LUS	3.125	79	0.541	0.061

Language Use Strategy (LUS) between High and Low Proficiency Chinese Language Learners
The following analysis aim to answer research question three (RQ3).
Research question three: Is there any difference in language use strategies (LUS) between high and low proficiency Chinese language learners?

CL learners' proficiency is summarized using language use strategies (LUS) according to low and high proficiency. Table 10 show the total number of CL learner with high proficiency (n=17) is far less than low proficiency (n=62). The finding shows the level of LUS between high (mean= 3.13 SD= 0.40) and low (mean= 2.89 SD= 0.43) proficiency group for LUS descriptively has a gap.

Table 10
Descriptive Statistics for LUS between High and Low Proficiency CL Learners

	Proficiency level	N	Mean	Std. Deviation	Std. Error Mean
Language Use Strategies	Low	62	2.883	0.443	0.056
	high	17	3.135	0.399	0.097

In the inferential statistics, a comparison of mean between the two groups (low and high) was conducted using independent sample t-test. The result (Table 11) shows the equal variance assumed since F=0.214 with p value more than 0.05, hence the results of t statistic at the first row is referred. The t statistic is 2.12 with p value less than 0.05, hence it was concluded there was significant difference in the LUS between the two groups. Thus, the finding show high proficiency CL learners have a higher ability to apply LUS. They put in more thought in applying strategies in writing or communicating.

Table 11
Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
						Significance				95% Confidence Interval of the Difference
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Language Use Strategies	Equal variances assumed	0.214	0.645	-2.119	77	0.019	0.037	-0.252	0.119	-0.489	-0.015
	Equal variances not assumed			-2.250	27.797	0.016	0.033	-0.252	0.112	-0.481	-0.023

Correlation between Language Learning Strategies (LLS) and Language Use Strategies (LUS)
The LLS and LUS were observed to represent the CL learners' abilities in learning CL as well as the use of the language. Both LLS and LUS are important components in the vocabulary acquisition strategies use. In any writing, vocabulary contributes the major outcomes. Nevertheless, the effect of the contribution needs to be observed from the abilities in reading and writing. Hence, research question four (RQ4) is answered from the following question.

Research question four: Is there any significant relationship between LLS and LUS?

In Table 12, the results show there was positive correlation between LLS and LUS since p=value < 0.05. The coefficient correlation is 0.714 which was at above average of positive relationship.

Table 12
Correlations

		LLS	LUS
LLS	Pearson Correlation	1	0.714**
	Sig. (2-tailed)		<0.001
	N	79	79
LUS	Pearson Correlation	0.714**	1
	Sig. (2-tailed)	<0.001	
	N	79	79

**. Correlation is significant at the 0.01 level (2-tailed).

Table 13 shows that there was significant difference between LLS and LUS. Hence, it was sufficient to conclude that the CL learners have shown their abilities to commit themselves in applying (vocabulary, reading, and writing) than the learning.

Table 13
Paired Sample T-Test between LLS and LUS

		Paired Differences							Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	One-Sided p	Two-Sided p
Pair 1	LLS LUS	-0.232	0.384	0.043	-0.318	-0.147	-5.384	78	<0.001	<0.001

Relationship among Vocabulary Strategies (VS), Reading Strategies (RS), and Writing Strategies (WS)

Research question five: Is there any relationship between Vocabulary Strategies (VS), Reading Strategies (RS), and Writing Strategies (WS)?

The CL learner's abilities in VS, RS, and WS were presented (Table 5) in terms of means (M) and standard deviation (SD) to get an overall picture specifically in descriptive analysis. It

shows that they rated their ability in RS (M=3.11, SD=0.64) and WS (M=3.21, SD=0.62) a bit higher than VS used (M=2.94, SD=0.44).

In the correlation analysis (Table 14), the result shows that there were significant relationships between the following pairs of variables:

a) Between RS and WS (coefficient correlation =0.635, p-value less than 0.05)
b) Between RS and VS (coefficient correlation =0.726, p-value less than 0.05)
c) Between VS and WS (coefficient correlation =0.657, p-value less than 0.05)

Table 14
Correlations among VS, RS, and WS

		Reading (RS)	Writing (WS)	Vocab (VS)
Reading (RS)	Pearson Correlation	1	0.635**	0.726**
	Sig. (2-tailed)		<0.001	<0.001
	N	79	79	79
Writing (WS)	Pearson Correlation	0.635**	1	0.657**
	Sig. (2-tailed)	<0.001		<0.001
	N	79	79	79
Vocab (VS)	Pearson Correlation	0.726**	0.657**	1
	Sig. (2-tailed)	<0.001	<0.001	
	N	79	79	79

**. Correlation is significant at the 0.01 level (2-tailed).

Further analyses were done to identify the types of relationship between the variables. The regression analysis shows that the R^2 value increase when VS was added as a mediator between the relationship between RS and WS. Table 15 shows the R^2 for regression analysis with RS as predictor, the R^2 is 0.404 which indicated that 40.4% of variation in WS can be explained by RS.

Table 15
Model Summary for Predictors RS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.635[a]	0.404	0.396	0.479

a. Predictors: (Constant), Reading strategy (RS)

The above model is significant since the ANOVA analysis in Table 16 shows the F statistic is 52.095 with p value less than 0.05.

Table 16
ANOVA[a] for Predictors WS and RS

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.976	1	11.976	52.095	<0.001[b]
	Residual	17.702	77	0.230		
	Total	29.678	78			

a. Dependent Variable: Writing strategy (WS)
b. Predictors: (Constant), Reading strategy (RS)

The model is shown in Table 17.

Table 17
Coefficients[a] for Predictors WS

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.294	0.270		4.790	<0.001
	Reading (RS)	0.615	0.085	0.635	7.218	<0.001

a. Dependent Variable: Writing strategy (WS)

Table 18 shows the R^2 for regression analysis with VS as predictor, the R^2 is 0.432 which indicated that 43.2% of variation in WS can be explained by VS.

Table 18
Model Summary for Predictors VS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.657[a]	0.432	0.425	0.468

a. Predictors: (Constant), Vocab strategy (VS)

The above model is significant since the ANOVA analysis in Table 19 shows the F statistic is 58.610 with p value less than 0.05.

Table 19
ANOVA[a] for Predictors WS and VS

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.827	1	12.827	58.610	<.001[b]
	Residual	16.851	77	0.219		
	Total	29.678	78			

a. Dependent Variable: Writing strategy (WS)
b. Predictors: (Constant), Vocab strategy (VS)

The model is shown in Table 20.

Table 20
Coefficients[a] for Predictors WS

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.522	0.354		1.473	0.145
	Vocab (VS)	0.914	0.119	0.657	7.656	<0.001

a. Dependent Variable: Writing strategy (WS)

Table 21 shows the R^2 for regression analysis with VS as predictor, the R^2 is 0.471 which indicated that 47.1% of variation in WS can be explained by RS and VS.

Table 21
Model Summary for Predictors VS and RS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.696[a]	0.485	0.471	0.449

a. Predictors: (Constant), Vocab strategy (VS), Reading strategy (RS)

The above model is significant since the ANOVA analysis in Table 22 shows the F statistic is 35.765 with p value less than 0.05.

Table 22
ANOVA[a] for Predictors VS and RS

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.389	2	7.195	35.765	<0.001[b]
	Residual	15.289	76	0.201		
	Total	29.678	78			

a. Dependent Variable: Writing strategy (WS)
b. Predictors: (Constant), Vocab strategy (VS), Reading strategy (RS)

The model is shown in Table 23.

Table 23
Coefficients[a] for Predictors RS and VS

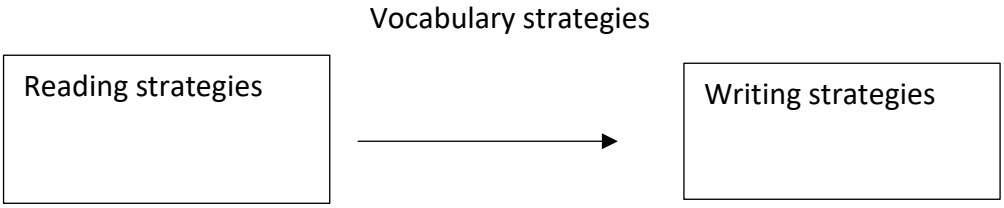
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.508	0.340		1.494	0.139
	Reading (RS)	0.323	0.116	0.334	2.787	0.007
	Vocab (VS)	0.577	0.166	0.415	3.463	<0.001

a. Dependent Variable: Writing strategy (WS)

It is envisaged that the CL learner's abilities in reading and writing were highly dependable with their vocabulary strategy used since they were good in applying vocabulary

which is highly required in writing and this skill is influenced by reading strategies too. Hence, the Figure 2 interprets that writing strategies is influenced by reading strategies. Nevertheless, the relationship is strengthening with the vocabulary strategies.

Figure 2
Relationship between Reading and Writing Strategies



Discussion

Finding for research question one indicated that the participants rated the highest in writing strategy. They agreed that they put more effort in writing. It was agreed that writing strategy involves compensatory strategies, metacognitive strategies, cognitive strategies and affective strategies (Pongsukvajchakul, 2021), thus more effort is required to be competent in writing.

The finding in vocabulary learning was consistent with findings of (Lee et al., 2017). They study the types of vocabulary learning strategies use by Malay students with high (HPML) and low proficiency (LPML) in Mandarin as a foreign language in the Malaysia tertiary education context. Their findings show that students from both the HPML and LPML groups rarely use "flash cards to learn new Mandarin words". This similarity may be due to both studies were conducted to CL adult learners. As shown in Table 2, adult learners use more cognitive strategies in learning Chinese vocabulary, they rarely use memory strategy such as use flash cards to learn news words. The findings in reading strategy use showed similarity with findings of (Xu, 2013; Solak and Altay, 2014; Kuo, 2015). The findings indicated students pay closer attention to what they are reading and reread the text to increase their understanding and also use references materials, context clues and guessing the context to help understand the reading material. However, reading for pleasure or reading extensively in target language showed moderate preference level in this study. The result projected that students put in more effort in reading text given as homework, or homework related, but showing less effort when it comes to reading for pleasure. This might be due to lack of confidence to read for pleasure in their target language, or lack of encouragement from teachers to read extensively outside the classroom. The findings in writing strategy use showed a relatively high preference for students to use coping strategies (Compensation) in Chinese essay writing which showed a opposite findings as (Zhang et al., 2022). Findings of Zhang et al (2022) indicated that compensation strategies were the moderate preffered strategies used due to these strategies could be risky and not effective, but consulting dictionaries helped them to understand the meanings and usages of connectives. The different finding from Zhang et al. could be due to the Chinese proficiency level of the participants involved, whereby all of the participants in Zhang et al.'s study were intermediate and advanced levels, therefore it was assumed that dictionary would not help much on the problem faced by advanced level students. However, majority of the participants in present study were low proficiency

students, therefore compensation strategies were the most preffered strategy used in this study.

As stated in Table 6, 7 and 8, most of the LLS items are aligned to memory strategies in the context of Oxford (1990), while LUS items consist of Cognitive, Metacognitive and Compensation strategies. The finding of research question two showed the participants invested more time and effort in the language use strategies than language learning strategies (memory strategies). This finding is similar to the result of Chu et al (2015) study where reflected memory strategies had the lowest mean score among all strategies. In language classes, language use strategies were frequently noted. The majority of the language tasks were set up as integrative activities, which required students to apply language usage methods (O'Malley et al., 1985). As a result, the findings confirmed the earlier conclusion by showing that students gave language use more attention.

Finding for research question three revealed that high proficiency learners rated a higher-level ability in learning strategies. They put in more thought in applying strategies in writing or communicating. Language learning process requires both LLS and LUS, whereby LLS involves mostly memory strategies and LUS requires a higher level of applying learning strategies such as cognitive and metacognitive strategies. Learners of low level of language proficiency are often found to frequently use memory strategies (Griffiths, 2013; Yu & Wang, 2009). Thus, low proficiency CL learners could not progress further due to the nature of the language learning process requiring higher ability to apply LUS. This finding supports the description of learning strategies in the learning since learning strategies involve special thought to develop learning skills in reading and writing (O'Malley & Chamot, 1990; Oxford, 1990). High proficiency learners show the potential for language development since they are able to apply the strategies (Zizhi Meyretha Putri & Erly Wahyuni, 2019). It was acknowledged that a high achiever has high cognition which enables them to further use the language learned (Putri & Wahyuni, 2019).

Finding for research question four also indicated that there was a correlation between language learning and language use. This result informed that language use can be properly organised if learners focused more in learning strategies. A previous study from Wang (2018) also demonstrated that students with higher GPAs used a wider variety of strategies. In line with other research (Griffiths, 2003; Habok & Magyar, 2017; Wang, 2018), higher proficiency learners use a broader range of strategies than low proficiency students.

Finding in research question five highlighted the importance of vocabulary to strengthen skills of reading and writing. The influence of vocabulary has been highlighted in many studies such as (Jiang, 2000; Kuo, 2015). Kuo's (2015) findings indicate that forgetting words is the most common reading difficulty which has proven that vocabulary is the important key to master reading skill.

Conclusion

This study focused on the use of learning strategies in CL acquisition among former SJKC non-native CL learners. The strategies used were observed in terms of their process of learning and language used, namely LLS and LUS. Both LLS and LUS were further investigated for vocabulary, reading, and writing (namely VS, RS, and WS). Findings from this study showed

that there was a higher rate of LUS among high-proficiency CL learners. They invested more time and effort in language use strategies than language learning strategies, implying that the use of LUS is vital in favour of achieving high proficiency in CL. Findings also revealed that the participants provided the highest rate in writing (WS), followed by reading (RS), and vocabulary (VS). This result indicated that more effort is required to be competent in writing. Therefore, the low proficiency CL learners should be taught these strategies to help them improve their Chinese proficiency.

It was also revealed in this study that there was a significant relationship between vocabulary strategy (VS), reading strategy (RS) and writing strategy (WS), and that WS is highly dependable on their RS and VS. Consequently, students need to strengthen their RS and VS specifically, in order to better perform WS, which leads to a higher level of language proficiency. Therefore, CSL teachers should teach students more VS, RS and WS in order to master the Chinese language while teaching. This finding has proven that in order to strengthen writing skills, students must first master more Chinese vocabulary, which ensures the ability to read and comprehend. It is hoped that the findings of this study can provide some insight regarding the learning strategies used in learning CL among non-native CL learners in Malaysia, provide teachers and students with some relevant CL learning strategies. As a result, the findings of this study have added value to the body of knowledge regarding the phenomenon of CSL teaching and learning in Malaysia.

Apart from the findings, several limitations could also be identified in the present study. The study only involved 79 participants, and therefore the findings cannot be generalized to all Malaysian non-native Chinese language learners. In terms of data, future research could include more participants from different areas of Malaysia such that the results could be more representative. Another limitation is related to instruments, whereby this study focused only on vocabulary, reading and writing strategies. A suggestion for future research is to include all strategies, i.e., listening and speaking strategies in the instrument, in order to provide more insights about learning strategies in all language skills.

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