

A Mixed-Methods Study of Chinese Non-English Majors' Language Learning Strategies: A Look at Frequency, Gender, and English Proficiency

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Abstract

This study investigated the use of language learning strategies (LLS) among non-English majors at Guangdong University of Foreign Studies in China, focusing on the relationships between LLS use, gender, and English proficiency. Using Oxford's Strategy Inventory for Language Learning (SILL) questionnaire, data were collected from 94 students, complemented by semi-structured interviews with 8 participants. Results showed that students employed LLS at a medium frequency overall, with compensation strategies being the most frequently used and affective strategies the least. Significant gender differences were found: female students used strategies. Correlation analyses revealed positive associations between all six strategy categories and English proficiency. Cognitive strategies emerged as the strongest predictor of English achievement. Interview data supported and explained the quantitative findings, highlighting the importance of conscious strategy use and learner awareness. The study suggests that systematic instruction in LLS, especially cognitive and metacognitive strategies, can enhance learners' autonomy and English proficiency. Implications for learner-centered teaching, gender-sensitive instruction, and the integration of affective and social strategies into the curriculum are discussed to promote more effective language acquisition.

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Chen, Q. (2025). A mixed-methods study of Chinese non-English majors' language learning strategies: A look at frequency, gender, and English proficiency. *Electronic Journal of Foreign Language Teaching [e-FLT]*, 22(1), 165–191. <u>https://doi.org/10.56040/qich2219</u>

1 Introduction

The study of foreign language learning strategies (LLS) is one of the most active domains in second language acquisition research. LLS research initially aimed to observe and describe successful learners' use of learning strategies, but evidence suggests that both successful and less successful learners consistently adopt these strategies. This contradicts the notion that unsuccessful learners lack awareness. The difference is that less successful learners often do not know how to adjust or regulate their own learning, while successful ones have a good command of various strategies and are good at adjusting the use of strategies based on the situation (Ehrman & Oxford, 1990). Soon afterwards, Oxford (2002) conducted a review of previous research on language learning strategies,

revealing that many less successful learners are aware of and can clearly describe their strategies. They even use strategies as frequently as effective learners. Only less effective learners apply these strategies in a random and less targeted manner. Gradually, the field of learning strategies expanded to include comparisons between advanced and less proficient learners, and further evolved to the exploration of relationships between the use of learning strategies and learning outcomes. Research has been conducted across various target languages. For instance, Yılmaz (2010) reported in a study involving 140 Turkish English learners that the proficient learners used a wider variety of strategies than weak learners. Huang (2015) found a positive relationship between the use of learning strategies and language proficiency among 103 Taiwan college freshmen studying English. More recently, Agustin, Wahyudin and Isnaini (2021) concluded that there is an association between students' use of LLS and their learning competency and achievement. However, there are exceptions; some studies have reported no significant relationships between these two variables (Nisbet, Tindall, & Arroyo, 2010; Yabukoshi & Takeuchi, 2009; Yamamori, Isoda, Hiromori, & Oxford, 2003).

The inconsistency implies that learning strategies and outcomes are affected not only by each other, but also by other variables. As a study assessing dozens of studies conducted in different contexts reported, the findings of learning strategies depend largely on learner variables such as cultural background, beliefs, and learning style. The investigation setting and participant group may yield unique results, with each factor's influence varying, making this area complicated and worth exploring (Oxford & Burry-Stock, 1995). Moreover, second language achievement may not be determined by one or multiple learning strategies alone. Factors influencing the learning process may include not only strategies, but also other aspects such as motivation, personality, aptitude, age, gender, anxiety and other individual differences (Cornwell & Robinson, 2000; Dörnyei, 2009; Ellis, 2004).

Regarding this point, LLS has been frequently discussed alongside learner variables in many studies to identify the variables that contribute the most to variance in language achievement. This study focuses on two of the most commonly examined factors - gender and language proficiency - and aims to assess how these two factors and learning strategies interact in the context of China.

2 Literature review

2.1 Gender and language learning strategies

Research on gender differences in language learning suggests that males and females may develop distinct cognitive and metacognitive strategies due to differences in brain structure, cognitive processing, and learning behaviors (Halpern, 2013; Oxford, 2017). Research also indicates that gender differences in cognitive and emotional development may influence learning strategies. Female learners generally exhibit greater maturity in these domains, contributing to a preference for planning, self-monitoring, and reflective learning (Belenky, 1997). Studies further suggest that female learners often report greater use of cognitive and metacognitive strategies. This may contribute to their higher academic achievement in language learning (Montero-SaizAja, 2021).

In the Chinese context, several studies support this trend. Xu (2022) found that female Chinese English learners relied more on structured cognitive and metacognitive strategies, such as organizing information and self-monitoring progress. Similarly, Zhou and Intaraprasert (2015) observed that female pre-service English teachers in China demonstrated significantly higher levels of self-regulated learning compared to their male counterparts. These findings align with earlier research, such as Gu (2002), which reported that female Chinese EFL learners engaged more frequently in memory-related and problem-solving strategies.

However, not all studies confirm strong gender differences. Jiang (2023) examined foreign language enjoyment and elaboration strategies among Chinese EFL learners and found no significant gender effect on strategy use. Similarly, Chen and Zhang (2024) analyzed language learning strategies among learners from Central Asia studying Chinese and concluded that gender-based differ-

ences were minimal, suggesting that while gender may play a role, its influence is not always consistent across different learning settings.

Overall, the literature suggests that female learners tend to report higher use of cognitive and metacognitive strategies, though the extent of these gender-based differences varies. While many studies identify such differences, their consistency remains uncertain, particularly in the Chinese EFL context.

2.2 English proficiency and language learning strategies

In this study, language proficiency is a general term referring to language achievement, performance, and learning outcomes, all of which have been found to be closely associated with LLS use in many representative studies (Dreyer & Oxford, 1996; Green & Oxford, 1995; Gu & Johnson, 1996). Building on these findings, emerging research has attempted to explore these relationships in different cultural contexts, yielding varied results and implications.

In Taiwan, Huang's (2015) mixed-study on 103 non-English majors who were enrolled in compulsory English courses revealed that students' strategy use was the main contribution to their English achievement. The intermediate learners implemented significantly more strategies than the beginning learners, especially compensation strategies, as confirmed by the interview data. The interview also suggested that using certain strategies enabled students to monitor and regulate their learning process.

In Saudi Arabia, Javid, Al-thubaiti, and Uthman (2013) administered an Arabic version of Strategy Inventory for Language Learning (SILL) to 240 English-major undergraduates. The results of Independent-Samples T-test showed that high-proficient learners used LLS more frequently than less proficient ones, the differences were evident in the use of metacognitive, social and cognitive strategies. The study offered an insight that the awareness of language needs could motivate and stimulate learners' adoption of strategies, thereby enhancing their ability to consciously analyse, plan, and evaluate learning. It is concluded that that giving explicit instructions on learning strategies could benefit language learners.

In Thailand, Jantawong, Yuso, and Nilwichien (2018) conducted a mixed-methods study among college students of high and low proficiency level. The data analysis revealed that high-proficient students employed learning strategies more often than low-proficiency students, particularly meta-cognitive strategies. The study stressed the importance of strategy use for facilitating classroom teaching.

The association also exists in the mixed cultural context. In a study involving 302 Korean students who were learning English as a second language in the Philippines, Magno (2010) found that compensation strategies appear to be the strongest predictor of English performance according to a multiple regression model. The research suggested that compensation strategies enable learners to overcome knowledge gaps and trigger LLS usage, ultimately leading to English improvement.

However, the correlation between strategy use and English development is not always positive or clearly evident.

Fewell (2010) conducted a study in Japan using a translated version of SILL to analyze English learning strategies in a university. The study involved 29 English majors and 27 business majors who completed six years of mandatory English courses. Interestingly, in the English major group, an opposite result emerged: the frequency of strategy use decreased along with the increase of proficiency level. Also, in the business group, lower proficiency learners reported more frequent use of compensation and social strategies. After considering other factors (e.g., attitudes towards rote learning, integrative and instrumental motivation and learner beliefs), the researcher found that while LLS did influence English learning outcomes to some extent, it was not a decisive factor in determining students' success or failure.

In Indonesia, Rismayana (2017) recruited 341 college students majoring in English education, English literature and Business English. She found an association between students' TOEFL scores and their reported strategy use on the SILL. In the same context, Maulina (2015) investigated 379

students from English-related majors and discovered no significant correlations between LLS and English achievement; however, both successful and unsuccessful students appeared to use strategies that allowed them to monitor and plan their English learning.

Studies on the relationship between these variables show inconsistent results, suggesting that many possible variables interact in this field and that the results may not indicate causation.

2.3 Applicability of the SILL in various college contexts

The SILL has been widely used to assess language learning strategies among university students, but its validity remains debated. A study of 914 Korean university students found that the SILL's factor structure did not fit well, raising concerns about its construct validity (Park, 2011). Similarly, research on Turkish students suggested a need for context-specific validation (Yeşilbursa & İpek, 2013).

Conversely, some studies affirm its validity. A study on Turkish e-learners confirmed the sixfactor structure and reported satisfactory reliability, supporting the SILL's applicability (Solak & Cakir, 2015). Additionally, a meta-analysis of 41 studies on Chinese university EFL students found positive correlations between SILL strategy use and English achievement, though results varied depending on participant types and assessment methods. This highlights the need for adaptation across different contexts (Li & Zhang, 2018).

2.4 Purpose of the study

In light of the concerns expressed above, the present study seeks to provide further data in the Chinese tertiary education context. It focuses primarily on exploring the links between learners' LLS use, gender, and English proficiency. Specifically, the study investigates the tendency of LLS use among non-English majors at Guangdong University of Foreign Studies (GDUFS), explores its relationships with gender and proficiency levels, and attempts to identify potential predictors for students' ultimate achievement in English learning.

3 Method

3.1 General design

The study was conducted in a two-phase, mixed-methods format, aiming to offer a more comprehensive picture of the learners' actual strategy use. Phase I employed a widely used questionnaire in the field, the Strategy Inventory for Language Learning (Oxford, 1990), which is a survey hoping to gauge the current patterns of students' use of learning strategies. Following the survey, a small sample of participants were invited to a semi-structured interview in Phase II for qualitative data, aiming to confirm their self-reported LLS use and "explain or build upon initial quantitative results" (Creswell & Clark, 2007, p. 71).

3.2Participants

The research included 94 non-English majors (28 males, 29.8%, and 66 females, 70.2%) who were in their second or third year of study at GDUFS in southern China: 44 sophomores and 50 juniors. The lower number of male students in this context is due to the fact that female students constitute the majority at this university. The age range was 19-22. For this generation of students, English has been a compulsory course since their third year of primary school; thus, at the time of the study, they had studied English for at least 10 years. The freshmen and senior students were not included, because freshmen had not taken the College English Test Band 4 (CET-4) yet, and the senior students do not have English course in their last year, some of them might have stopped

learning English regularly. It should be mentioned that the original number of participants was 104, but 10 of them were omitted due to the careless response or the absence of CET-4 scores, bringing the final number to 94. Additionally, it should be noted that GDUFS is regarded as one of the best universities for language learning in China, even if for non-language majors. Therefore, the students had comparatively higher proficiency in English language, but still, with different levels, according to which, they were grouped into advanced learners and ordinary learners. It is also important to note that GDUFS students are recruited from diverse regions across China, as the university's admission process draws applicants nationwide. While they may speak various local languages, including Cantonese, the age range corresponds to a generation in which Mandarin has been widely standardized and taught throughout their schooling. Therefore, all participants are proficient in Mandarin, which is the primary language of instruction and communication.

3.3 Instruments

The study employed a triangulation approach of three types of instruments including the SILL questionnaire, CET-4 scores and a semi-structured interview.

Questionnaire

The SILL was used to measure students' learning strategy preferences as it has been widely used in this field of research. According to Oxford and Burry-Stock (1995)'s review of the use of SILL, its reliability and validity have been extensively verified in numerous studies across different cultures. It is "perhaps the most comprehensive classification of learning strategies to date" (Ellis, 1994, p. 539).

The reliability of the original version was ensured in a great number of studies through Cronbach's alpha of above .90 depending on the investigation settings and the participants (Ehrman & Oxford, 1995). According to Oxford and Burry-Stock (1995)'s review of a variety of Cronbach's alpha coefficients from studies across countries, the SILL can be administered in either English or the participant's mother tongue because the measurement error caused by the confounding language is minimal. The coefficient for this study was estimated to be .94, which demonstrated a fair degree of internal consistency reliability. Table 1 shows the reliability of SILL and its components.

	Cronbach's Alpha	N of Items
SILL	.935	50
Memory	.681	9
Cognitive	.850	14
Compensation	.402	6
Metacognitive	.884	9
Affective	.602	6
Social	755	6

Table 1. Reliability statistics of SILL and its components

As for validity of the SILL, Oxford and Burry-Stock (1995) have collected abundant evidence regarding different dimensions of validity in their assessment of the use of ESL/EFL SILL worldwide. For example, the concurrent and predictive validity were reported high based on a great number of studies, in which relationships between SILL strategies use and different types of language proficiency/achievement tests were demonstrated, as well as learning styles, motivation, and beliefs. The construct validity of the SILL was examined by comparison of proficient and less proficient group in Japan, China and Korea in different studies, in which they found high strategies user tended to have higher language proficiency. In other words, the validity of this instrument is extensively recognized in the field of language learning strategies research.

CET-4

As for the measure of students' English proficiency, the researcher used their scores on CET-4 test. CET-4 is a criterion-related norm-referenced test held by the Department of Higher Education of the Ministry of Education in China nationwide, aiming to make an objective and accurate measurement of non-English majors' English proficiency. CET-4 has a well-organized system, covering test design, invigilation, marking, and result announcements. It consists of four parts: 1) Listening comprehension; 2) Reading comprehension; 3) Cloze/Error correction; 4) Writing and translation, with a total score of 710. Studies have shown that it meets the reliability, validity, authenticity, and washback standards required for large-scale standardized tests (Bo, 2007; Guo, 2003; Wang & Wenjun, 2010). CET-4 accurately reflects Chinese college students' English proficiency and helps universities improve teaching quality. It is also recognized by employers and is used as a recruitment criterion for university graduates (Yang, 2003).

Interview

What SILL cannot provide was the information concerning the factors affecting learners' choices of LLS use, these valuable data were collected using semi-structured interview with selected students across two proficiency groups. Combined with the statistical findings, the researcher designed an interview template to elicit responses, the interview questions concerned their previous English learning experience, learning habits, attitudes toward learning techniques and feelings of the current learning. The questions were design to gain deep insights into students' learning strategy use, and investigate gender and proficiency as factors. Five interview prompts were adapted from the SILL items. 1) How do you usually learn new words or phrases? (e.g., combination of pronunciation, form and meaning, read aloud repeatedly). 2) Do you actively try to use new words in sentences? 3) Do you think it useful to watch English movies, TV programs, or read English articles? 4) When encounter a new word in reading, what would you do? Make a guess or refer to the dictionary? 5) Have you ever felt anxious or nervous when learning English? What would you do to make you feel better? The rest of the interview questions are shown in the appendix. Each of the questions was aimed to gain a better understanding of how and why a specific strategy was used. It should be mentioned that the questions were not asked in a strict order and the interviews were conducted in Chinese.

3.4 Data analysis

The SILL data were processed using Statistical Package for Social Sciences (SPSS) 22.0, multiple statistical methods were employed.

1. Firstly, the descriptive statistics including minimum, maximum, means and standard deviations were calculated to summarize the use of each of the six strategy categories, the overall strategy and the CET-4 scores.

2. In response to the question on the significant difference in the use of learning Strategies and learning outcomes between male and female students, the independent samples t-test was conducted, grouping variable was gender, test variables were the six categories, total learning strategies and CET-4 scores. The significance level for mean variation was set at p < 0.05, a standard used in most quantitative research.

3. To examine whether there are relationships among the use of six categories of learning strategies (memory, cognitive, compensation, metacognitive, affective, and social), total learning strategies, and English proficiency. Pearson Product-Moment Correlation was used.

4. The outcomes were further analyzed with Stepwise Multiple Regression for the purpose to determine the predictability of the strategies use and identify the strongest predictor(s) for English achievement. In this analysis, the predictor variables were: memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies, social strategies, and total learning strategies. They were used to predict the criterion variable: CET-4 scores. This method was

selected because it provides estimates of both the magnitude and statistical significance of relationships between variables (Gall, Borg, & Gall, 1996).

To complement and clarify the strategy use found in the statistical analysis at individual level, the top 25% (N=24) and bottom 25% (N=24) of participants were grouped into advanced and ordinary learners based on their CET-4 scores, in order to establish a clearer distinction in English proficiency. Each interview was then processed as a separate case. The interview data were transcribed, and quality information was carefully translated into English. By combining the interview notes and transcripts with the reported SLL use, profiles of the eight interviewees were created, summarizing their learning strategies in relation to gender and language learning outcomes. The researcher closely examined each case to identify common learning difficulties, key strategies, and potential explanations for the patterns discovered in Phase I. The findings were used to identify a set of strategies used by good language learners.

While English proficiency levels are categorized into distinct groups to analyze patterns of strategy use, learning outcomes are measured by individual CET-4 test scores as a continuous variable. This distinction is crucial for interpreting the findings, particularly in differentiating strategy use between advanced and ordinary learners.

4 Results

4.1 Quantitative results

Question 1: What are the patterns of language learning strategy use by non-English majors in Guangdong University of Foreign Studies?

Table 2 displays descriptive statistics for the reported language learning strategies use and CET-4 scores. In the entire sample, the mean frequency score of total learning strategies was 2.81, falling between 2.5-3.4, indicating medium strategy use generally. The mean frequencies for each of the six strategy categories also fell in this range. Of the six categories, the three most frequently used were compensation (M=2.947), cognitive (M=2.944) and metacognitive (M=2.917), followed by social (M=2.68), affective (M=2.64) and memory (M=2.58), those results indicated that participants used the six categories of strategies at a medium level. On the other hand, the average CET-4 score was 534.90 (out of a total of 710), indicating a comparatively high level of English proficiency among the entire group of students. The minimum, maximum scores and standard deviations are shown in Table 2.

Table 2. Descriptive Statistics for Each of the SILL categories, total learning strategies, and CET-4 Scores

	Minimum	Maximum	Mean	Std. Deviation
Memory	1.22	4.33	2.5824	.52134
Cognitive	1.50	4.64	2.9438	.60426
Compensation	2.00	4.33	2.9465	.47566
Metacognitive	1.56	4.89	2.9174	.73279
Affective	1.17	4.00	2.6440	.57399
Social	1.17	4.83	2.6845	.76974
Total_strategies_score	1.72	4.14	2.8074	.49944
CET_4_score	425	658	534.90	63.278

Notes: N=94, SILL scores out of 5, CET-4 scores out of 710.

As for statistical significance among these mean differences, the results of t-test revealed that, while female students reported using most of the strategies more frequently than their male counterparts, not all of them were statistically significant. To be specific, the significances were found in the following four categories: Cognitive (t = -2.16, P = .034), Metacognitive (t = -2.24, P = .028), Affective (t = -2.21, P = .030) and Social (t = -2.83, P = .006). For memory and compensation strategies, there were no significant gender differences revealed. However, overall, the utilization of total strategies was significantly different (t = -2.47, P = .015) between genders. On the other hand, their CET-4 scores also differed at a significant level (t = -3.07, P = .003), with females outperformed their male counterparts on the English test. The above findings demonstrated that male and female students varied significantly not just in the choice of learning strategies, but also in learning outcomes.

Question 2: Are there any significant differences in students' use of any of the six strategy categories, total learning strategies and English proficiency by gender?

In order to determine whether there were significant differences in LLS use or English proficiency between male and female students, the independent sample t-test was performed. The mean scores of strategy use frequency and CET-4 test across the two groups were calculated as part of the t-test analysis. The descriptive statistics in Table 3 shows that female students (N=66) reported using LLS more frequently than male students (N=28) generally, except for the compensation strategies, with close mean frequencies of 2.95 and 2.94. Specifically, females reported an average use frequency of 2.89 for total strategies, compared to 2.62 reported by males. Other than that, the average score of females (547.39) in CET-4 test was higher than that of males (505.46), indicating females possessed better English competence than their male counterparts on the whole.

	GenderN Mean Std. Deviation	F	t	Sig. (2-tailed)	
Memory	Male 282.4436.54845	220	-1.69	0.002	
	Female662.6414.50209	239	-1.093	9.095	
Cognitive	Male 282.7414.63910	220	-2.15	6 034	
	Female663.0297.57237	.239 -2		0.034	
Compensation	Male 282.9521.53796	> 1 2	1.075	0/1	
	Female662.9441.45109	2.12	1.075	.741	
Metacognitive	Male 282.6632.65040	217	-2.23	8 0 78	
	Female663.0253.74358	247	-2.230	0.020	
Affective	Male 282.4471.62052	107	-2.21	1 030	
	Female662.7276.53634	17/	-2.21	1.030	
Social	Male 282.3514.66583	113	-2.834	1 006	
	Female662.8258.77170	445	-2.83	+.000	
Total_strategies_sco	oreMale 282.6171.46650	165	-2.47	1 015	
	Female66 2.8882 .49424	105	-2.4/	1.013	
CET_4_score	Male 28505.4661.262 .	108	-3.06	8.003	

T-LL 2	D 14 .	- C 4 4 4	C 41	1.66	• • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·
Table 3.	Results	OT T-TEST	tor the	anterences	in strategy	use according to gender
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As for statistical significance among these mean differences, the results of t-test revealed that, while female students reported using most of the strategies more frequently than their male counterparts, not all of them were statistically significant. To be specific, the significances were found in the following four categories: Cognitive (t = -2.16, P = .034), Metacognitive (t = -2.24, P = .028), Affective (t = -2.21, P = .030) and Social (t = -2.83, P = .006). For memory and compensation strategies, there were no significant gender differences revealed. However, overall, the utilization of total strategies was significantly different (t = -2.47, P = .015) between genders. On the other hand,

their CET-4 scores also differed at a significant level (t = -3.07, P = .003), with females outperformed their male counterparts on the English test. The above findings demonstrated that male and female students varied significantly not just in the choice of learning strategies, but also in learning outcomes.

Question 3: Are there any significant relationships among students' use of the six categories of learning strategies, total learning strategies, and English proficiency?

To gain an overall picture of the relationship between strategies reportedly used by the participants and their English proficiency, a scatterplot was generated using SPSS. The frequencies of total learning strategy use were placed on the X axis and CET-4 scores on the Y axis. Each dot corresponded to a frequency on the X axis and a score on the Y axis.

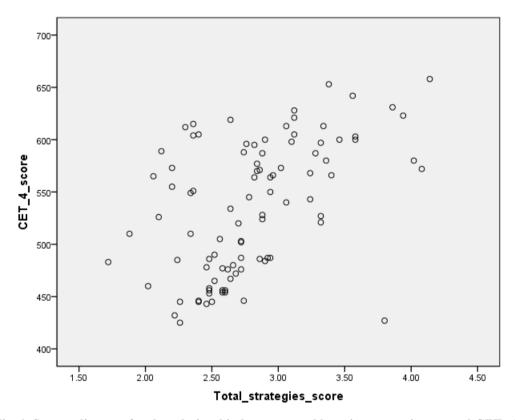


Fig. 1. Scatter diagram for the relationship between total learning strategies use and CET -4 scores

As shown in Figure 1, the dots fell close to a straight line, despite minor outliers, the relationship between strategy use and language learning outcomes was linear. The results suggested a positive association between the frequency of language learning strategy use and CET-4 scores..

Pearson correlation coefficients were calculated for the six categories, total SILL and CET-4 scores to more precisely quantify the relationship between each of the categories of strategies, total learning strategies, and English proficiency. Table 4 displays the results (described from bottom to up). The results showed that the coefficient of total strategy use and CET-4 score was .494 (P < 0.001), yielding a strong positive correlation between students' use of total learning strategies and

their learning outcomes. Likewise, the positive relationships were also found between all the individual categories and test results. The most correlated category was cognitive strategies (r = .536, p < .0001), followed by social (r = .464, p < .0001), metacognitive (r = .398, p < .0001), memory (r = .310, p < .002), compensation (r = .270, p < .008) and affective strategies (r = .237, p < .022). The correlation coefficients indicated all the six types of learning strategies have positive effect on students' English learning. Cognitive, social and metacognitive strategies demonstrated a stronger link with students' English achievement than other types of strategies.

A closer analysis of the internal relations revealed that the six subscales of the SILL were significantly correlated with one another and with the total scale. Among those correlations with total learning strategies, the most correlated category was cognitive (r = .921), followed by metacognitive (r = .867) and social (r = .820), similar to the linkages with CET-4 scores but in a different order. The less correlated ones were memory (r = .727), affective (r = .699) and compensation (r = .651). All the correlations were generally high and significant at the 0.01 level. As for the interrelated relationships between each of the six SILL subscales, the results showed that they were correlated at around .50 and .60, but the highest was .777, found between cognitive and metacognitive strategies, which signified that among the six subscales of learning strategies, cognitive and metacognitive strategies had the closest relationship.

Table 4. Pearson Correlation Coefficients for SILL Components, and Total SILL, With CET-4 Scores

	Memor	Cogni-	Compensa	- Metacogni	-Affec-	Total strate-
	У	tive	tion	tive	tive	Social gies_score CET_4_score
Memory	1	•				
Cognitive	.607**	1				
	.000					
Compensation	.358**	.560**	1			
	.000	.000				
Metacognitive	.511**	.777**	.456**	1		
	.000	.000	.000			
Affective	.531**	.496**	.413**	.541**	1	
	.000	.000	.000	.000		
Social	.461**	.709**	.558**	.634**	.561**	1
	.000	.000	.000	.000	.000	
Total_strate-	.727**	.921**	.651**	.867**	.699**	.820 ** 1
gies_score	.000	.000	.000	.000	.000	.000
CET_4_score	.310**	.536**	.270**	.398**	.237*	.464 ** .494 ** 1
	.002	.000	.008	.000	.022	.000 .000

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

*. Correlation is significant at the 0.05 level (2-tailed).

Question 4: Which category(ies) of learning strategies is (are) the most predictive factor(s) for students' English proficiency?

The analysis revealed a substantial correlation between English proficiency and strategy use, particularly in cognitive, metacognitive, and social strategies. Learners who report frequent strategy use tend to achieve higher proficiency; however, as this study relies on self-reported data, the findings indicate correlation, not causation. Therefore, to establish the predictability of learning strategies, stepwise multiple regression analysis was performed, aiming to identify the strongest predictor(s) among the six SILL categories for English achievement. The results are presented in Table 5.

Table 5. Summary of regression	n model predicting CET-4 sco	ores based on learning strategy
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			Adjusted	RStd. Error o	of			
Model	R	R Square	Square	the Estimate	В	Beta	t	Sig.
1	.536ª	.287	.280	53.711	56.127	.536	6.089	.000
a Predictors: (Constant) Cognitive								

a. Predictors: (Constant), Cognitive

b. Dependent Variable: CET_4_score

use

As shown in Table 5, only one variable entered the regression model as the best predictor of CET-4 scores, cognitive strategies. The standardized regression coefficient was .536, indicating that the model was a moderately near-perfect prediction. The R2 was .287, indicating that approximately 28.7% of the total variance in CET-4 scores could be accounted for by cognitive strategies specified in this model. Cognitive strategies appeared to be the most strongly correlated with English proficiency in this group of students. The result was consistent with the Pearson correlation analysis, where cognitive strategies were found to have the strongest relationship with CET-4 results.

Table 6. Excluded Variablesa for predicting CET-4 scores

						Collinearity Sta-
					Partial C	orrela-tistics
Model	1	Beta In	t	Sig.	tion	Tolerance
1	Memory	023 ^b	210	.834	022	.632
	Compensation	044 ^b	412	.681	043	.686
	Metacognitive	045 ^b	319	.750	033	.397
	Affective	039 ^b	381	.704	040	.754
	Social	.169 ^b	1.363	.176	.141	.497
	Total strategies score	.005 ^b	.022	.983	.002	.151

a. Dependent Variable: CET_4_score

b. Predictors in the Model: (Constant), Cognitive

The remaining variables: Memory, Compensation, Metacognitive, Affective, Social and Total learning strategies, while highly correlated with students' English proficiency (CET-4 scores), were not included in the regression model (see Table 6). Hence, they did not appear to predict students' success in English learning.

4.2 Qualitative results

The interview results are presented by strategy categories with details and contexts related to the strategies. The key information of the eight selected students is presented below.

Pseudonym	Cindy	Nancy	Suzanne	Sylvie	Dan	Mike	Tim	Vin-
								cent
Age	19	21	22	21	19	20	21	22
Sex	Female	Female	Female	Female	Male	Male	Male	Male
English	Ad-	Advanced	Advanced	Ordi-	Ordi-	Ordi-	Ad-	Ordi-
Proficiency	vanced			nary	nary	nary	vanced	nary

Table 9. Background information of the interviewees

Memory strategies

When asked how they learned and memorized new words, both advanced and ordinary students reported repetition as a common strategy. Their responses did not seem to vary much. In fact, the interviewees cited memorization and repetition frequently when they recalled how they learned English. They did not view repetition as rote learning, but rather memorizing with understanding. Apparently, the eight interviewees were aware of the method to repeat the word by combining its pronunciation, form and meaning. In the words of Cindy (interviewee names are pseudonyms), "Repetition is the mother of learning." She described her vocabulary learning experience by stating,

I normally write the new word several times while mouthing it, I repeat it as many times as possible and review it on the second day. Sometimes I learn a new word or phrase by understanding its meaning in an example sentence.

Repetition seemed unavoidable for second language learners, but they did not repeat mechanically, as Tim stated,

After you have acquired a large vocabulary, you could gradually find out the rules of how the letters construct words and the association of words, I memorize a word then extend to its derivatives, instead of using Chinese pronunciation to note every syllable on every single word as we did when we first started learning English.

Apart from those, six students described some learning methods not included in the questionnaire. For example, they learn new words or phrases in passages or magazines. They seek opportunities to practice the new words, such as doing exercise, so as to get familiar with their usage in various contexts. As Nancy noted,

I use an English learning app, it is interesting and effective, it provides sounds, example sentences and pictures, and I could practice with it to consolidate my memory. Plus, I could listen to it while walking, or waiting in lines.

In general, students have various extra strategies for the consolidation and strengthening of memory, but they viewed rote repetition as a fundamental and reliable way for memorization.

Cognitive strategies

When students recalled their learning process and learning activities, advanced learners tended to use the terms like "analyze, associate, compare, find out and practice." They described their learning as a constant summarization of language patterns and accumulation of English-related knowledge. Cindy, Nancy and Tim explained that they would try to use new words in different contexts. When it comes to exams, they prefer to use familiar words. They recorded mistakes, made comparison with already known knowledge, and added new-encountered words on sticky notes. To effectively process information, they mentioned the fast-reading technique with one accord. For example, Cindy illustrated her process to comprehend the text,

I use skimming and scanning reading method, for those typical sentences with grammatical points, I would try to analyze the sentence structure, divide it into parts, memorize the patterns...it is helpful to me, because once I find out the rules, I could use it to make as many sentences as I want, some of my classmates said it is not necessary to understand certain rules, just remember the patterns and imitate them. Yeah...that is helpful too, but I prefer to know 'why' as well, that way I remember them deeply. Except for those complicated grammars, like subjunctive mood.

Cindy' case revealed that a conscious learning should include rational understanding, which is a higher level of knowing.

Other students, like Dan and Vincent, expressed that they seldom use less frequent words unless they believe they have mastered them. In the words of Dan, 'I would try to use those fancy words, but I prefer not to take risks if I am not sure about the correct usage, particularly in composition examinations.' Ordinary learners' accumulation of knowledge did not seem to allow them to process and produce information effectively.

When asked about how they felt about watching English TV shows, movies or reading magazines to learn English. All eight interviewees agreed that it was helpful, but to different extents. Female learners seemed to value this approach more than male learners. Nancy described her feelings by stating,

I watch American dramas in leisure time, I used to subscribe magazines like English Street. It is certainly helpful if you pay attention to it, you know, some of the daily or idiomatic expressions cannot just be learned from textbooks. It also trains your listening too, the biggest problem is that it costs times, and sometimes I just watch the movies with Chinese subtitles for fun, it is too distractive.

Compensation strategies

When asked what they would do when encounter unknown words in reading. Six students said they would make guesses in most cases. They realized the importance of context in understanding a passage; most of the students expressed that they normally did not look up the dictionary unless the words hinder their understanding of the passages. In Dan's response,

Generally, I would not look up dictionary if the meaning of unknown words could be inferred through contextual information, I would first choose to make a guess, for the words that occur many times, I would stop to check a dictionary, to make sure I did not misunderstand the passage. The frequency of using the dictionary depends on the difficulty of the passage.

Similarly, Nancy said she would skip the unknown words and read the rest text. Usually, she could guess the meanings by nearby sentences. She checks dictionary when the uncertainty causes misunderstanding. Two ordinary students, Mike and Sylvie reported that they looked up dictionary in most cases.

When it comes to the situation where they lack the right words in a conversation or composition, not surprisingly, students replied that they would use synonyms or gestures. Dan and Nancy said they would try another words or phrases with close meanings, sometimes use body language, like gestures and facial expression. Mike added that he would use a subordinate clause to describe the word he was looking for. Sylvie and Suzanne mentioned that they would turn to APP dictionary for an appropriate word.

Metacognitive strategies

Metacognition is the cognition of cognition, it regulates the cognitive activities. When talked about the English learning regulation, students reported that they did not actually make formal plans on English learning or record their progress in notebooks, but they have a broader plan in mind. In Cindy' words, 'I barely reviewed my progress; rather, I pay attention to the retrogress, and when it happens, I try to figure out why and fix it.' Tim and Suzanne responded that they located and made up the deficiencies in the learning process, and made decisions on what to do next based at their own pace. These cases from the advanced learners reflected the following features: noticing mistakes, looking for best way, monitoring learning process, making adjustment according to their own learning curves. Apart from that, they were clear about how to learn, as Nancy noted,

I memorize some passages from textbooks when it's necessary, a "model" passage usually covers the new vocabularies and grammar knowledge of that unit, then I would do a lot of practice using the associated workbook, which revolves the text content and expands to tests. I would repeatedly do exercise with time limit, it is my way to check what I have learned and prepare for a test.

In China, this "repeatedly doing a lot of exercise" frequently mentioned in the interviews is known as "inscribes sea" tactics (immerse in the sea of questions). The exercise materials are usually provided or recommended by teachers, specifically designed for different grades of students. They are the bridges of learning tasks in the classroom and contents of examination. Exercises are a popular technique to consolidate previously learned knowledge; the fact that students sought out opportunities to practice reflected their level of awareness of seeking progress.

Ordinary learners' responses showed less frequency of evaluation of learning process. Two students believed they would make progress gradually through consistent exercises. One student said he focused on the knowledge that the teacher highlighted. They expressed that they did not deliberately spend time thinking of how to learn or what had learned. They believed that they had been taught the skills and techniques to learn, and preferred to take the time to do more exercises.

Affective strategies

When asked how to deal with anxiety or depression caused by English learning. Male and female students' answers differed significantly. Female learners' responses included having a break, going shopping and chatting with friends. For example, Suzanne described her experience by stating,

I'd go shopping when I feel frustrated with the learning problems, the complicated grammar rules, the unexpected quizzes, etc. Shopping diverts my attention from those stuff, I could catch a short break not to think about it... One time I complained about the problem with my friends while we were hanging around at the shopping mall, my friend told me that she had the same problems, we spent the whole afternoon discussing how to deal with it, though, in the end, we did not come up with a good solution, we went back and kept working hard the next day. I think it just makes me feel better when I know I am not the only one who gets distressed by English.

Suzanne's case indicated that relaxing oneself and expressing feelings could help reduce anxiety. Similarity, the other two female learners said that they would talk to friends or parents about their feelings. Nancy summed up that through talking, she found her other classmates had encountered a similar situation, then she would convince herself that it was not a big deal. Cindy added that while she did consult with teachers or classmates on specific English problems, she usually adjusted herself to the situation.

Male learners did not explicitly describe their approaches to relieving pressure in English study, but they did not chose to talk about it except for Tim, who stated that he would consult with teachers or classmates to determine the source of the problem. The other three male learners did not seem to take the feelings seriously. In Dan'words, 'I basically never talked with others when I was down, neither kept a diary or took actions to make me feel better. It is not that bad, the negative feelings would just subside after exams'. Mike gave a short answer, 'No, I have got many other courses to be upset about; is it necessary to talk about every problem?' Vincent commented, 'It upsets me when I have to memorize pages and pages of new vocabularies, it is just tedious, until I found I could actually remember new words while reading passages.'

Although male learners and female learners treated learning stress in different ways, they did not express high anxiety about learning English on the whole. Neither male learners nor female learners paid extra attention to the nervousness or had the habit to keep diaries about feelings.

Social strategies

When asked how frequently they worked with others? Students explained that they did not have many opportunities to interact with native speakers; instead, they did pairwork in class or practiced in groups. Female learners showed more positive attitudes towards groupwork. According to Suzanne, 'Doing pairwork with my deskmate deepens my impression of the dialogues, compared with talking to myself with boredom'. She mentioned that she joined a culture exchange club to practice English outside of the classroom, and she went to the English Corner every Sunday night. Nancy, the other student who frequented English Corner, expressed a desire to spend time in an Englishspeaking country. She noted,

I have been thinking of furthering my study abroad, and I understand how important an environment could be for language learning, so I have always wanted to live or travel abroad for a while... but I don't have any foreign friends, and I am afraid of making a fool of myself when I am speaking to foreigners.

Same thing happened to Cindy, she expressed that she loved to communicate with foreigners, but she was concerned that she would not be able to do so and end up saying nothing. Male learners reported that they rarely went to English Corner due to the same concerns of their "poor oral English", besides that, they noted that they felt stressed because the place was normally full of female learners.

5 Discussion

In the order of the research questions posed at the beginning of this study, this section discusses the outcomes of the SILL and interviews, with references to previous research.

5.1 The most and least used strategies

With regard to RQ1, the data indicated medium frequencies in the use of either total learning strategies and their subscales. Among the six SILL categories, compensation and cognitive strategies were most frequently used, followed by metacognitive and social strategies, then memory and affective strategies. The findings are similar to those in studies involving college students across Asian contexts - such as Taiwan (Huang, 2015; Lai, 2009; Yang, 1992). Hong Kong (Bremner, 1999), Singapore (Wharton, 2000) and Japan (Mochizuki, 1999) - where the high use of compensation strategies and low use of affective and memory strategies were reported. According to Oxford's strategy system described earlier in this paper, by adopting compensation strategies, such as guessing, using synonyms or gestures, learners are able to compensate for limited knowledge. Second language learners need to rely on such techniques to cope with language problems. Moreover, students reported in the interview that they used synonyms or subordinate clauses to describe something when they were unable to think of the exact term in English. Another set of popular categories is cognitive and metacognitive, which are executive processes that monitor language learning, such as reasoning, analysis, planning and evaluating. The popularity of cognitive/metacognitive strategies indicates that students were aware of their learning progress and invested considerably more time in regulating and managing their learning. On the other hand, the infrequent use of memory strategies seems to contradict the widely held belief that Chinese students favor memorization. It is reported that they are encouraged to memorize texts and repeatedly read aloud (Kohn, 1992). They are also extensively taught grammar rules and to scrutinize phrases or sentence structure. A possible explanation is that students did use memorization, but in a different way from the techniques described in

the SILL questionnaire. Examples include physically acting out a word, remembering words by making mental pictures or their location on pages. Students may not be familiar with those techniques.

The speculation of memorization was later confirmed by interviewing the eight students. Their accounts indicate that they did use some techniques mentioned in the questionnaire, such as connecting the pronunciation, form and meaning of a word, making a sentence with it, using flashcards and repeatedly writing or mouthing the new word. But five of them (item 1, 4, 5, 7 and 9), such as acting and using rhymes, were rarely employed since they were deemed less effective or time-consuming. To some extent, the interview findings on memorization explain the GDUFS students' high performance than the national average in the CET-4 test; they demonstrated that they did not largely depend on rote learning, instead, they selected techniques as appropriate and even developed their own tricks. For example, a student reported that he normally learned new words through sample phrases or paragraphs because a word makes greater sense in context. Another student said she loved to learn new vocabulary using a smartphone application, and that she occasionally memorizes the example sentence to consolidate her memory. Based on their test scores, these students are proven to be flexible and effective strategy users in language learning. Just as Oxford (1990) has pointed out, high frequency of SILL strategies use does not guarantee successful learning outcomes; it is the quality of strategies use that matters.

5.2 Gender differences in affective/social strategies

In relation to gender differences, results showed that variations in some groups of learning strategies and English proficiency did appear to be influenced by gender, with female learners scoring higher than male learners in both the SILL and CET-4 tests. Significant differences were mainly found for cognitive, metacognitive, affective, social and total learning strategies. No significant gender differences were found in compensation and memory strategies. The findings appeared to confirm the popular assumption from previous research that female learners possess better language learning aptitude than male learners among Chinese learners (Foong & Goh, 1997).

In the four significant categories, affective strategies are specific means for learners to manage their emotions when confronted with anxiety, nervousness, fear and disappointment. The SILL included six strategies to deal with the negative feelings. They are relaxation, self-encouragement, self-rewarding, being aware of nervousness, expressing feelings in a journal or talking to others. The SILL data indicate female students adopted significantly more affective strategies than males. Moreover, the interviews reveal that female learners tend to pay more attention to their sentiments than male learners. For example, among the four female interviewees, three responded that they would talk to their parents or classmates when they experience frustration, while one said that she usually tried to self-adjust. On the contrary, of the four male students, only one stated that he would choose to talk when experiencing anxiety; the other three said they basically never discuss their concerns with others or take steps to deal with them. One boy explained that the tension or pressure would gradually disappear after examinations. Apart from these, neither male learners nor female learners reported that they noticed nervousness or felt tense frequently (item 42).

These findings explain the low use frequency of affective strategies found in the quantitative data. Similar results were observed for social strategies, which include asking for clarification, cooperating with native speakers and developing cultural awareness. The use of social strategies is not frequent, either, but female learners tend to exceed male learners in applying these strategies. Based on the interviews, male learners showed less or no interest in foreign cultures and barely communicate in English, owing to their limited exposure to an English-speaking environment. Except for the English Corner, which is normally dominated by female students. This may be explained from the sociocultural perspective that "female superiority in verbal aptitude and social orientation, as well as possible sex differences in integrative (socially-based) motivation" (Ehrman & Oxford, 1989, p. 8). It is worth mentioning that both male learners and female learners voiced fears about losing face or getting embarrassed. Despite this, they showed their willingness to exchange with foreign friends

if offered plenty opportunities.

The above results indicate that female learners are more active users of affective and social strategies. These are consistent with previous findings (Dreyer & Oxford, 1996; Politzer, 1983; Yılmaz, 2010), which also favored females as more frequent users of affective/social strategies in comparison with males.

5.3 Gender differences in cognitive/metacognitive strategies

The SILL also reported that female students tend to use significantly more cognitive and metacognitive strategies than their male counterparts. However, the interview results did not reveal obvious gender differences. While the quantitative findings align with Sy (1994), who also found significant gender differences in the use of cognitive/metacognitive strategies favouring female learners in the Chinese EFL context.

Overall, female students tend to outperform male students in total strategy use, a finding consistent with several studies (Dreyer & Oxford, 1996; Green & Oxford, 1995; Gu, 2005; Wen & Johnson, 1997). A common explanation for this trend is that male and female learners experience differences in physical and mental developments, which can lead to distinct learning styles and knowledge processing modes (Belenky, 1997). Nevertheless, gender differences in learning strategy use are not universally found. A growing number of studies suggest no gender significance in the use of LLS (Chou, 2002; Griffiths, 2003; Lee & Oxford, 2008; Peng, 2002; Shmais, 2003).

5.4 Proficiency differences in cognitive/metacognitive strategies

In respect of proficiency differences, the scatter diagram recognizes a general tendency that the CET-4 scores increase with the frequency of overall strategies use, indicating a positive liner relationship between students' English achievement and language learning strategies. The correlation analysis further proved that English proficiency was significantly connected with the use of total learning strategies and across the six categories. Cognitive strategies are the most correlated ones, followed by metacognitive strategies. These two categories were also found to be the most correlated ones with the total strategies scores, and they are highly correlated with each other, with greater proficiency tending to relate to greater strategy use.

5.5 Proficiency differences in affective/social strategies

Apart from that, students' English proficiency is associated with the frequency of social strategy use. This result could be attributed to the gender effect. Consider the fact that female students (M=547.39) scored significantly higher than male students (M=505.46) on the CET-4 test, as well as the gender differences in social strategies. One could conclude that the high-proficiency females use significantly more social strategies than lower-proficiency males.

5.6 Cognitive Strategies as a Predictor of English learning outcomes

The last finding of the study indicates that cognitive strategies emerged as a significant predictor of English learning outcomes in multiple regression analysis. Many researchers have emphasized the crucial role of cognitive strategies in language proficiency differences. For instance, Ehrman and Oxford (1995) reported that cognitive aptitude had the strongest correlation with achievement, attributing this to deep processing learning behavior, such as analyzing, making associations and recognizing patterns. Similarly, Bautier-Castaing (1977) highlighted that cognitive strategies (e.g., generalization of linguistic rules) reflect the "creative construction" process, wherein learners actively construct their concept of the target language. Zare-Ee (2010) further strategies are among the most effective learning strategies and significantly predict language proficiency. Therefore, the

finding of the present study once again corroborates the predictability of cognitive strategies for the ultimate achievement in language learning.

6 Conclusion

The study has observed the patterns of language learning strategy use by the GDUFS students and explored the significant relationships within the patterns relating to gender and proficiency level. The interviews added a more in-depth view to explain the quantitative results by students themselves. Thus far, this mixed-methods study has generated several significant findings. For one, students overall did not particularly use learning strategies frequently; all six categories of strategy were used at a medium level, in the following order of frequency: compensation, cognitive, metacognitive, social, memory and affective strategies. The inconsistency of the results of the most and least strategies were explained by the fact that students used some non-SILL strategies, as reported by the interviewees. Furthermore, the SILL yielded substantial results concerning relationships between frequency of strategy use on the one hand and gender and proficiency level on the other. Firstly, the independent t-test showed that female students outperformed their male counterparts in both the CET-4 test and the usage of learning strategies in general. Specifically, significant gender differences emerged for the use of cognitive, metacognitive, affective and social strategies with females demonstrating higher usage. Interview data confirmed that female students were more active strategy users, consistent with previous findings among Chinese English learners (Foong & Goh, 1997; Gu, 2002), where such differences were attributed to individual and contextual factors. Regarding the interactive effects between English proficiency and LLS use, the Pearson product-moment correlation revealed that all the six categories of strategy were significantly correlated with students' English proficiency. The highest correlation was found for cognitive strategies, which also emerged as the strongest predictor of English achievement in the regression analysis. This suggests that using the six types of strategies - particularly cognitive strategies - can potentially contribute to success in English acquisition in this context. Learners who actively construct their concept of the target language are more likely to perform better in English learning. This is supported by Sinclair (2000), who proposed that engaging in learning processes with explicit awareness could help language learners make informed decisions. Students are therefore encouraged to make conscious efforts to develop linguistic awareness through cognitive engagement. According to Dörnyei (2001), instruction in learning strategies can enhance learners' language awareness and problem-solving skills, thereby improving their academic performance. Therefore, students would benefit from systematic LLS training, to enhance their ability to employ appropriate methods to learn English. This implies that, in teaching practice, teachers should reinforce students' awareness of learning strategies, particularly cognitive and metacognitive ones.

Another important implication of this study relates to the shift in teaching philosophy. The College English Curriculum Requirements places strong emphasis on transitioning from a teacher-centered to a learner-centered approach, highlighting both practical English communicative competence and learner autonomy for non-English majors. To support this shift, teachers are encouraged to embed learning strategy instruction into classroom teaching. To practice student-centered teaching, teachers must first understand students' learning preferences and cognitive style. Teachers should be attentive to gender-related differences in language learning. For example, female learners should be encouraged to build on their strengths by developing broader linguistic competence, instead of relying on memorization alone. Male learners, on the other hand, should be encouraged to coordinate and communicate with others and overcome the perception that English is a "female" subject. Teachers should also be attentive to students' emotional expressions and address common misconceptions. For instance, they could design mixed-gender activities that allow male students to actively practice the target language in natural settings and engage in casual conversation, while encouraging female learners to deepen their engagement and reinforce their knowledge through peer explanation. As Xiang (2003) noted, the fact that Chinese teachers have been neglecting the affective factor is one

of the main reasons for the unsatisfactory results of the current English teaching. Therefore, to facilitate and expedite the language learning process, teachers should act as coordinators, sharing ideas and expertise with students in a sincere, receptive and understanding manner. Similarly, another reason for students' limited language application abilities, particularly in oral communication, is the insufficient use of affective and social strategies. Awareness of these strategies, like listening to movies, songs, reading novels, and vocabulary, can significantly enhance communicative competence and make language learning enjoyable for learners (Wahyudin, et al, 2021). Considering the fact that the ultimate aim of language learning is to communicate, syllabus designers/teachers are recommended to incorporate these strategies into the curriculum, take actions to create active language environments and encourage students to participate in social activities.

Beyond all that, the learning pattern of students from GDUFS provides evidence to justify memory-based learning. As the biggest population of English language learners in the world, Chinese learners are known to memorize grammar and vocabulary in a traditional way. The interview findings explain that memorization is not equal to rote learning. In fact, it is an engagement of a powerful part of brain, which stores input for deeper learning. Besides, due to the inexplicable nature of some forms of language syntax - such as idiomatic expressions - memorization is unavoidable. Therefore, teachers should not discourage students from reciting English because of the controversial features of memory-based strategies. After all, the more important consideration of strategy use is not frequency, but quality and effectiveness (Dörnyei, 2005). Students should be guided to explore their own learning strategies and gradually grow to be autonomous and efficient learners. In this manner, they will truly learn and lay a solid foundation for lifelong learning.

Although the study has drawn practical implications for English learning, it has certain limitations in terms of the instruments and samples. It should be acknowledged that the quantitative results are based on a self-report questionnaire with 50 items. As such, the long list of questions might result in uncertain or random answers. Furthermore, some of the SILL items might not apply to students. While the data suggest that higher strategy use tends to correlate with higher language proficiency, further research, such as longitudinal studies or experimental designs, is needed to establish causal relationships. It should also be noted that the correlation analysis between the total result and each category (cognitive, affective, and social) reveals that the cognitive category has a stronger influence on the total score, likely due to its larger number of questions (14 compared to six for affective and social). While this imbalance is a limitation of the current tool, it is important to interpret the results with this in mind. Future iterations of the assessment tool could benefit from a more balanced distribution of questions across categories to ensure a fairer comparison. However, while cognitive strategies demonstrated a strong relationship with English proficiency in this study, it is important to also consider the potential influence of other categories of strategies. Students may employ multiple strategies simultaneously, contributing to their success. Future research should explore the interplay between different categories of strategies to determine whether cognitive strategies alone have the strongest predictive power or if their impact is reinforced by the combined use of other strategies. The interview was able to compensate for the deficiencies of the inaccurate data; however, it was impossible to conduct interviews for a large number of participants to check the consistency of their responses. Future studies are recommended to adopt different means to add other dimensions in this area, such as thinking aloud and observation. On the other hand, the fact that only 29.8% of the participants were males may also have effect on the outcome. Other factors such as aptitude, attitude, personality and motivation may have confounding impact on results, which could be further explored in future research.

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Education (with distinction) from the University of Reading. Her research centers on second language learning strategies, with a growing emphasis on how digital technologies enhance language acquisition. Her current work investigates how tertiary students employ e-learning and mobile tools in their language learning practices.

Appendices

Appendix 1

语言学习策略量表 Strategy Inventory For Language Learning

亲爱的同学:您好!本问卷旨在了解大学生的英语学习状况,以期共同进步。调查以匿名 形式展开,所集数据将用于学术研究并会得到妥善保管。为保证调查结果的真实性,请您 认真阅读问卷中的每一道题目,并根据自身的实际情况和第一反应作答。感谢您的参与! Dear student, this survey aims to help better understand our English learning experience for future progress. Its conducted anonymously, the data collected will be used exclusively for academic research and be properly kept. In order to ensure the authenticity of the results, please read carefully and give your first reaction to each statement according to your own actual circumstance. Many thanks for your participation!

- o 我从来/几乎没有 Never or almost never true of me
- o 我通常没有 Usually not true of me
- o 有点像我 Somewhat true of me
- ○我通常是这样 Usually true of me
- 我一直/几乎一向如此 Always or almost always true of me

Memory Strategies 1-9

1、我会思考学过的和新学的英语之间的关系。I think of relationships between what I already know and new things I learn in English.

2、为了记住新学的英语单字,我会试着用这些生字来造句。 I use new English words in a sentence so I can remember them.

3、背单词时,我会将音、形结合起来。 I connect the sound of a new English word and an image or picture of the word to help me remember the word.

4、背单词时,我会在脑中制造出某个生词出现的情境来帮助记忆。 I remember a new English word by making a mental picture of a situation in which the word might be used.

- 5、我会使用押韵的方式来记住生词。 I use rhymes to remember new English words.
- 6、我会使用闪示卡来背生词。I use flashcards to remember new English words.
- 7、我会用肢体语言把生词演出来。 I physically act out new English words.
- 8、我常常复习英语课程。 I review English lessons often.

9、背生词或短语时,我会按照它们出现在课本、黑板或是街道看板的位置来记忆。 I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign.

Cognitive Strategies 10-23

10、我会重复说或写英语单词好几遍。 I say or write new English words several times.

11、我会尝试像英语母语者一样说话。 I try to talk like native English speakers.

12、我会练习英语的发音。 I practice the sounds of English.

13、我会以不同的方式使用学过的英语单词。I use the English words I know in different ways.

14、我会以英语开启对话。 I start conversations in English.

15、我会看英语电视节目或电影。 I watch English TV shows spoken in English or go to movies spoken in English.

16、我闲暇之余会阅读英文。 I read for pleasure in English.

17、我会以英语来记笔记、讯息、书信或是报告。 I write notes, messages, letters, or reports in English.

18、读英语文章时,我会先快速阅读,再回来细看。 I first skim an English passage (read over the passage quickly) then go back and read carefully.

19、我会在我的母语里寻找和英语意思相近的字词。 I look for words in my own language that are similar to new words in English.

20、我会尝试找出英语的模式。 I try to find patterns in English.

21、我会把英语单词拆解成几个我认识的部分,以理解它的意思。 I find the meaning of an English word by dividing it into parts that I understand.

22、我避免逐字逐句翻译。 I try not to translate word-for-word.

23、我会把听到或是读到的英文资讯做成摘要。I make summaries of information that I hear or read in English.

Compensation Strategies 24-29

24、遇到不熟悉的英文单字,我会去猜它的意思。 To understand unfamiliar English words, I make guesses.

25、在对话中想不起来恰当的词语时,我会借用手势。 When I cant think of a word during a conversation in English, I use gestures.

26、如果我不知道英语该怎么说,我会自己造新词。 I make up new words if I do not know the right ones in English.

27、阅读时,我不会每遇到生词都查字典。 I read English without looking up every new word. 28、我会试着用英语来猜别人接着会说什么。I try to guess what the other person will say next in English.

29、当我想不起来某个英文单词时,我会用别的词或词组来表达相同的意思。 I can't think of an English word, I use a word or phrase that means the same thing.

Metacognitive Strategies 30-38

30、我会尽量找机会练习英语。 I try to find as many ways as I can to use my English.

31、我会注意到自己所犯的错误,以更好地学习英语。 I notice my English mistakes and I use that information to help me do better.

32、当有人在说英语时,会引起我的注意。 I pay attention when someone is speaking English. 33、我会想找办法让自己成为更好的英语学习者。 I try to find out how to be a better learner of English.

34、我会做好规划,以便有足够的时间学英语。 I plan my schedule so I will have enough time to study English.

35、我会找能用英语谈话的人练习英语。 I look for people I can talk to in English.

36、我尽量找机会阅读英语。 I look for opportunities to read as much as possible in English. 37、对于如何提高英语能力我有清晰的目标。 I have clear goals for improving my English skills.

38、我会回顾自己在英语学习中的进步。I think about my progress in learning English.

Affective Strategies 39-44

39、当我感到害怕用英语时,我会尽量让自己放松。 I try to relax whenever I feel afraid of using English.

40、即使我很怕会说错,我还是鼓励自己多开口说英语。 I encourage myself to speak English even when I am afraid of making a mistake.

41、当我在英语方面有良好表现时,我会犒赏自己。 I give myself a reward or treat when I do well in English.

42、我会留意自己在学习或使用英语时是否紧张。 I notice if I am tense or nervous when I am studying or using English.

43、我会在学习日记里记下自己的学习体会。I write down my feelings in a language learning diary.

44、我会和别人交流自己学习英语的感受。 I talk to someone else about how I feel when I am learning English.

Social Strategies 45-50

45、听不懂时,我会请对方放慢语速或重复一遍。 If I do not understand something in English, I ask the other person to slow down or say it again.

46、说英语时,我会请英语母语者纠正我的错误。 I ask English speakers to correct me when I talk.

- 47、我会和同学练习英语。 I practice English with other students.
- 48、我会求助以英语为母语的人。 I ask for help from English speakers.
- 49、我用英语来提问。 I ask questions in English.
- 50、我想了解英语系国家的文化。 I try to learn about the culture of English speakers.
- 51、性别 Gender
- o 男 Male
- 女 Female
- 52、目前就读年级 Which year are you in currently?
- o 大一 Freshmen
- 大二 Sophomores
- o 大三 Junior
- o 大四 Senior
- 研究生 Postgraduate student
- 53、学习专业 Major
- ○英语相关专业 English-related Major
- 非英语相关专业 Non English-related Major
- 54、大学英语四级成绩。 Score on the CET-4

56、如被选中,是否愿意接受采访,请留微信或邮件。 If selected, would you like to take an interview? Please leave your email address here, thank you for your participation!

Appendix 2

Interview list

Dear students, for the interview, please try to recall your own English learning experience, the answers are only used for academic research, all information will be kept confidential.

1. When did you start learning English?

2. How do you usually learn new words or phrases? (e.g., combination of pronunciation and form, and meaning, read aloud repeatedly) What memory techniques do you use?

3. Do you actively try to use new words in sentences? Do you keep journals/diary in English? Or take note?

4. Do you think it useful to watch English movies, TV programs, or read English articles? Do you take the initiative to do that?

5. When encounter a new word in reading, what would you do? Make a guess? Or refer to the dictionary?

6. What would you do if you can't find a right word when you are writing or talking?

7. Did you notice any obvious improvement in your learning experience? Will you review your progress from time to time and summarize the reasons for progress?

8. Have you ever made a plan on how to learn English?

9. Have you ever felt anxious or nervous when learning English? Would you talk about your feelings with others? Or write it in a diary?

10. Learning languages can be influenced by culture. Are you interested in foreign cultures? Do you like to communicate with foreign friends? Are there more exchange opportunities? If you have the opportunity, would you like to participate in activities that communicate in English?

11. Among the above-mentioned methods or tips (memory, repeated reading, practice, classmates' communication, conscious) which are the ones you use the most? What learning techniques seem to have worked for you, and which have not? Have you found the most effective way to learn English?