Gender and Language Proficiency Interaction on Language Learning Strategies of ESL Learners

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ABSTRACT

Employing language learning strategies will lead to greater language communication ability and academic achievement. Even though studies on language learning strategies have been conducted over the years, it is still crucial to look at individual factors affecting the choice of language learning strategies used among the learners. Gender and language proficiency of learners are two prominent variables influencing the use of language learning strategies in learning English as a second language (ESL). Thus, this study aims to identify the interaction effects between gender and language proficiency of 1699 first-year undergraduates in utilising language learning strategies in learning the English language through a self-reported survey using an adapted version of the Strategy Inventory for Language Learning (SILL) (Oxford, 1990) in a Malaysian public university. Findings revealed that the ESL learners were found to use the language learning strategies in an average manner irrespective of their gender and language proficiency. Data analysis through two-way ANOVA revealed a significant interaction between gender and learner's language proficiency in utilising effective strategies. The differential effects of these two independent variables on affective strategies were further investigated through their simple effects and Tukey's HSD tests. These tests revealed that female average achievers differed significantly in employing effective strategies compared to male average achievers. This study implied that investigating the employment of language learning strategies in various contexts is worthwhile, as well as incorporating mixed method research for richer data.

Keywords: *Gender, language proficiency, ESL learners, affective strategies, achievers.*

INTRODUCTION

A second language demonstrates "the social and communicative functions within the community" (Oxford, 1990, p. 6) where the language is learned. Even though English is the second language in Malaysia, poor English language proficiency was among the reasons that caused high unemployment among graduates (Job Majestic, 2021). Since graduates' low levels of language proficiency could hinder the achievement of the national development agenda (Ali, 2013), government and private sector organisations have stressed the importance of English language proficiency among students, teachers, and lecturers (Devaraj, 2016). Furthermore, English proficiency is regarded as a "highly prized ability in the job market" (Khamis et al., 2024, p. 462) due to its prominent role in job hunting. Additionally, Beeh and Baun (2022) stressed that English is considered the "language of worldwide communication, the language of science, modern technology trade, and politics" (p. 332) and is employed mostly in every field in this globalised world. Therefore, it is crucial that university graduates meet certain academic requirements, such as proficiency in English and other languages (Yusop, 2024). Hence, examining language learning strategies based on individual

factors like gender and language proficiency could be one possible way to increase the learners' language command.

Gender plays a pivotal role in language learning. UNESCO (2012, as cited in Tienxhi, 2017) has revealed that the disproportion between men and women in pursuing tertiary education is a worldwide phenomenon. Tienxhi (2017) revealed that the gender gap in Malaysian public universities was significantly higher than in Malaysian private universities, and there was an increase in the number of males being underrepresented in public universities. Despite overcoming such a gender gap issue in higher education in Malaysia, was crucial as it might affect the overall social equality. However, there were still inadequate studies addressing the gender gap in Malaysia (Tienxhi, 2017). Therefore, there is a need to examine the gender differences in learning a second language efficiently and effectively, as it could enhance the learners' language competency. Employing appropriate yet varied language learning strategies (LLSs) is one possible way to make these learners more self-regulated in the learning process and enhance their language proficiency (Chen & Sukying, 2024).

LITERATURE REVIEW

Background of Language Learning Strategies

LLSs research has begun in the 1970s and beyond (Grenfell, 2007). Studies in learning strategies have evolved from simply listing strategies to comprehensive taxonomies in categorising learning strategies (Nambiar, 1998). Nevertheless, research on LLSs is still crucial because it could determine the success of learning a language (Jaradat & Bakrin, 2016; Sartika et al., 2019, as cited in Anggarista & Wahyudi, 2022). Using appropriate LLSs in language learning enables learners to be more self-regulated (Chen & Sukying, 2024; Samaie et al., 2015), indirectly affecting their academic achievement. Such a view was echoed by Kashefian-Naeeini et al. (2011), who indicated that effective use of LLSs will enhance performance and increase the learners' autonomy in language learning. Additionally, Tuncer (2009, as cited in Yayla et al., 2016) highlighted that successful students could utilise diverse language learning strategies, creating a greater sense of responsibility in the language learning process.

Definition of Language Learning Strategies

There were various definitions of LLSs. Literature has revealed that the term "strategy" could be labelled as "techniques", "tactics", "cognitive abilities", "language processing strategies," and "problem-solving processes" (Nambiar, 1998). Learning strategies could include three phenomena, namely "language learning behaviors" of learners while learning a language, "the knowledge revealed when learners are asked to retrospect on aspects of the learning," and the learners' prior knowledge influencing the choice of strategies (Nambiar, 1998, p. 2). Griffiths (2007) has defined strategies as the activities consciously employed by learners to regulate their learning. Similarly, Cohen (2007, as cited in Khan, 2012) defines strategies as thoughts and actions consciously employed by learners to assist them in learning and using the language to complete specific language tasks. Oxford (1990) revealed that "strategy" originated from the ancient Greek term "strategia," which meant "generalship or the art of war" (p. 7). Tactics is another related word to "strategy", which denotes the tools used to apply strategies successfully (Oxford, 1990). The concept of strategy was later transformed into "learning strategies", which are defined as the "operations" of the learner to assist the "acquisition, storage, retrieval and use of information" (Oxford, 1990, p. 8). Oxford further described learning strategies as the learners' specific actions to ensure learning becomes

"easier, faster, more enjoyable, more self-directed, more effective and more transferrable to new situations" (p. 8). Hence, the important features of language strategies include "problem orientation, action basis, involvement beyond just cognition, ability to support learning directly or indirectly, degree of observability, level of consciousness, teachability, flexibility, and influences on strategy choice" (Oxford, 1990, p. 11).

Oxford's Classification of Language Learning Strategies
Oxford (1990) has categorised these strategies into direct and indirect strategies. Direct strategies are LLSs that are directly related to the target language and comprise three groups, namely memory, cognitive, and compensation. Memory strategies, also known as mnemonics, are divided into four sets, namely "creating mental linkages, applying images and sounds, reviewing well, and employing action". Cognitive strategies enable learners to "understand and produce new language" using various means (Oxford, 1990, p. 37). Such cognitive strategies are also divided into four sets, namely "practicing, receiving and sending messages, analysing and reasoning and creating the structure for input and output" (Oxford, 1990, p. 44). Compensation strategies, which are used to overcome limitations in knowledge and "inadequate repertoire of grammar and especially, of vocabulary" (Oxford, 1990, p. 47), consist of two sets, namely "guessing intelligently and overcoming limitations in speaking and writing" (Oxford, 1990, p. 48). Conversely, indirect strategies "support and manage language learning without direct involvement in the target language" (Oxford, 1990, p. 135) and are divided into metacognitive, affective, and social strategies (Oxford, 1990). Metacognitive strategies assist the learners in coordinating their learning process and include three strategy sets, namely "centering your learning, arranging and planning your learning, and evaluating your learning" (Oxford, 1990, p. 137). Affective strategies will help regulate emotions, motivations, and attitudes and comprise three main sets: "lowering your anxiety, encouraging yourself, and taking your emotional temperature" (Oxford, 1990, p. 141). Social strategies encourage learners' interaction with others and include three sets, namely "asking questions, cooperating with others, and empathising with others" (Oxford, 1990, p. 145).

Gender and Language Learning Strategies
Various studies have indicated numerous factors that could affect the choice of LLSs. Ellis (1994, as cited in Akay & Cingillioglu, 2016) classified the existing studies on how the factors affected the use of strategies into three areas, namely "learners' beliefs about learning, learner factors, namely individual learner differences and situational and social factors" (p. 99). Gender is considered an important variable that could affect the use of LLSs (Brown, 2000, as cited in Bashosh et al., 2013; Gu, 2002; Meisani et al., 2020). Susan Hugar described gender as "a result of biological differences between the two sexes, psychological effects or socio-cultural influences" (as cited in Maghsudi et al., 2015, p. 162). Maghsudi et al. (2015) further explained that gender denoted the "social and contextual expectations" imposed by each society on males and females in the cultural and social contexts (p. 163) and could alter the preferences for various linguistic strategies (p. 162). Similarly, gender was also classified as a social factor influencing strategy use (Akay & Cingillioglu, 2016). Chamot (2004) added that males and females displayed differences in brain hemispheric, cognitive style, and socialisation and employed learning strategies differently. Sunderland (2000, as cited in Chamot, 2004) and Samiyan (2015) revealed that females were more successful in language learning than males.

Numerous studies using LLSs based on gender showed mixed conclusions (Chamot, 2004). Most studies indicated that females have a greater tendency to deploy more LLSs (Alhaysony, 2017; Božinović & Sindik, 2011; Liyanage & Bartlett, 2012; Samaie et al., 2015; Yayla et al., 2016). For instance, a study by Božinović and Sindik among 181 college students using SILL revealed that females had greater use of all the LLSs except for socio-affective strategies. Samaie et al.'s (2015) research on 150 tertiary learners in Iran revealed that females significantly had higher use of all LLSs except for metacognitive strategies compared to their male counterparts. A study on 524 undergraduates at a Turkish university revealed that females employed more strategies than males, with a significant difference in the overall sub-categories except for affective and cognitive strategies (Yayla et al., 2016).

Contrarily, some studies also discovered that males utilised more LLSs compared to females (Ayachi, 2015; Wharton, 2000; Zarei & Branch, 2013). For example, Ayachi's study on 60 executives from private companies in Tunisia revealed that males used more cognitive, compensation, metacognitive, and social strategies than females. Similarly, Zarei and Branch's research on 15 males and 35 females using a translated Persian SILL Inventory indicated that males significantly employed more strategy for all the LLSs except for social strategies, in which both groups of learners equally deployed this strategy. Wharton's study on 678 university students in Singapore found that males employed more strategies than female learners.

Research also indicated gender variables showed significant differences in the use of LLSs (Akay & Cingillioglu, 2016; Ho & Ng, 2016; Kayaoğlu, 2012; Platsidou & Sipitanou, 2015). For example, Akay and Cingillioglu's (2016) study on 90 male and 137 female university students using SILL reported significant differences in using cognitive, metacognitive, social, and affective strategies based on gender. A study among first-year undergraduates found that female learners significantly utilised more indirect strategies compared to males in learning English (Ho & Ng, 2016). Another study on 115 science students in a Turkish university found that females surpassed male learners in using all five strategy categories, namely memory, compensation, cognitive, metacognitive, and social strategies. Yet, no significant difference was found in the overall LLSs based on gender (Kayaoğlu, 2012). Additionally, Platsidou and Sipitanou's study on 1302 children and early adolescents reported that female learners significantly employed more LLSs except for compensation strategies compared to male learners.

Nevertheless, other past studies also revealed the use of LLSs was insignificant based on gender (Ansyari & Rahmi, 2016; Chang, 2012; Kashefian-Naeeini et al., 2011; Mohammed & Thabit, 2015; Mutar, 2018; Sadeghi & Soleimani, 2016; Viriya & Sapsirin, 2014). For example, Ansyari and Rahmi's (2016) study on 90 males and females respectively in a senior high school revealed the use of overall strategies did not differ significantly with gender. Likewise, Chang's study on 279 EFL at a comprehensive university in Taiwan revealed that gender did not influence the statistical use of LLSs. Similarly, Kashefian-Naeemi et al.'s study on 64 university students at Universiti Kebangsaan Malaysia revealed that gender did not influence the use of LLSs.

Language Proficiency and Language Learning Strategies
Besides gender, learners' language proficiency is another important factor in language learning. Various researchers have attested that language proficiency played an important role in determining the choice of LLSs (Alfian, 2018; Alhaysony, 2017; Griffiths, 2003; Jaradat & Bakrin, 2016). In addition, a few scholars (Brown, 2002; Green & Oxford, 1995; Oxford,

1990) stressed the importance of examining the relationship between language proficiency and the use of LLSs because LLSs could be taught in a classroom to some extent. It serves as a tool to develop communicative competence for "active and self-directed" learning (as cited in Kato, 2009, p. 142). Researchers have determined language proficiency or achievement using numerous methods, like "self-ratings, language achievement tests, entrance and placement examinations, and career statutes" (Suwanarak, 2012, p. 3). Al-Qahtani (2013) indicate that highly proficient learners demonstrated better academic achievement, whereas Bagheri (2015) implied better English language achievement for highly proficient learners. Some researchers (Green & Oxford, 1995; Khaldieh, 2000; Wharton, 2000) also viewed that language learning achievement or proficiency is commonly associated with the choice of strategy (as cited in Suwanarak, 2012, p. 3). Nevertheless, Suwanarak indicated that such relationship is complicated and not merely a "simple linear connection" between strategy use and academic improvement because it is based on the type of strategy used (p. 3).

Previous studies have suggested mixed conclusions on using LLSs based on language proficiency. Yet, most studies have corroborated the view that more proficient learners demonstrated higher use of LLSs effectively than less proficient ones (Chu et al., 2012; Rao, 2016; Sukying, 2021). For example, Chu et al.'s study on 253 freshmen at a Taiwan university showed that higher proficient learners used more LLSs than the less proficient learners. In addition, they also revealed that all six learning strategies correlated positively with the learners' academic achievement respectively. Rao's (2016) research on 225 university students in a Chinese university revealed that students' levels of language proficiency significantly affected their use of LLSs. Similarly, Sukying (2021) indicated that more proficient learners employed more language learning strategies. However, Fewell's (2010) study on 29 English majors and 27 business majors 56 Japanese learners indicated obverse results, whereby the more proficient learners utilised less LLSs.

Past researchers (Alfian, 2018; Jaradat & Bakrin, 2016; Nadif, 2025; Sukying, 2021) further indicated a positive relationship between using LLSs and the learners' language proficiency. Alfian's (2018) study on 286 undergraduates found a linear relationship between using LLSs and their language proficiency, whereby the more proficient learners used strategies more frequently. Significant differences were found in the overall use of LLSs and their language proficiency. More specifically, these significant differences were found between the low and the high levels and between the middle and high levels in utilising language learning strategies. Likewise, Jaradat and Bakrin's research on 120 Jordanian undergraduates at Universiti Utara Malaysia found that proficiency level and LLSs had a positive and significant correlation. Nadif's (2025) study among 294 EFL undergraduates also revealed a moderate positive correlation between language learning strategies and academic achievement. Likewise, Sukying (2021) reported a positive correlation between language learning strategies and language proficiency among 1523 first-year undergraduates using SILL.

Conversely, several studies demonstrated that language proficiency did not differ significantly from the strategy used (Boroujeni et al., 2014; Del Ángel Castillo & Gallardo Córdova, 2014; Sadeghi & Soleimani, 2016). For example, Boroujeni et al.'s study on 122 Iranian EFL learners supported the finding that language proficiency did not differ significantly with LLSs despite more proficient learners employing more strategies. Another study on 1283 students in a private non-profit university in Nothern, Mexico, indicated no significant difference between the LLSs and learners' academic success (Del Ángel Castillo & Gallardo

Córdova, 2014). Similarly, Sadeghi and Soleimani's study on 132 advanced and pre-intermediate male and female Iran revealed no significant difference between LLSs and learners' proficiency.

Even though gender and language proficiency are two crucial variables that might affect the choice of LLSs, research on these two variables is still inadequate. Kayaoğlu (2012) claimed that language learning research focusing on the influence of gender and the choice of strategies was still inadequate compared to educational and psychological research. Likewise, Salahshour et al. (2013) indicated that regardless of the importance of language proficiency and gender on LLSs, these two variables had not received much attention and were investigated separately. They believed that more insights on the learning strategies could be obtained if the effect of these two factors were examined. Additionally, research on LLSs, especially on Malaysian ESL learners, is still inadequate despite vast research on learning strategies in ESL (Nambiar, 1998). Hence, the present study aimed to investigate the interaction effect between gender and language proficiency in employing LLSs by first-year undergraduates in a public university. It will address the following research questions:

- Is there any interaction effect between gender and learners' language proficiency on their LLSs?
- What are the simple effects of those significant interactions of gender and language proficiency on a particular LLS?

METHODOLOGY

This study employed a quantitative method using a self-reporting survey questionnaire to identify the interaction effect between gender and language proficiency in using LLSs among first-year undergraduates in a Malaysian public university, Universiti Malaysia Sarawak.

Subjects

Only 1699 first-year undergraduates were included in the statistical analysis. The number of females outweighed the number of male undergraduates, in which 534 (31.43%) were males and 1165 (68.57%) were females. 669 (39.38%) undergraduates were categorised as low achievers, 951 (55.97%) as average achievers, and 79 (4.65%) were categorised as high achievers based on their results for the Malaysian University English Test (MUET). Undergraduates who scored MUET Bands 1 and 2 were categorised as "low achievers", Bands 3 and 4 as "average achievers," and Bands 5 and 6 as "high achievers".

Instrument

This study utilised the adapted version of the Strategy Inventory for Language Learning (SILL) ESL/EFL version 7.0 (Oxford, 1990) because it comprised a comprehensive learning strategies taxonomy and had high reliability and validity (Oxford, 1990). This study also confirmed that the instrument was reliable (α = .926). This inventory comprised six underlying constructs: memory, cognitive, compensation, metacognitive, social, and affective strategies. Demographic questions were also incorporated into the questionnaire. Chamot (2004) revealed that questionnaires are the most frequent and effective ways to identify students' learning strategies. A pilot study was initially conducted on 133 participants to assess the feasibility, reliability of the instrument, and appropriate language use. Brace (2008) further supported that such a tailoring process was necessary as it might enlighten the researcher on the relevant and necessary information of the respondents.

Data Analysis

The survey's quantitative data was analysed using the SPSS (Statistical Package for the Social Sciences) software package version 25. Descriptive statistics was first reported through the mean and standard deviation of each LLS based on two categorical variables, namely gender and language proficiency. This was followed by the inferential analysis using two-way ANOVA (Analysis of Variance) to determine whether there was any significant interaction between the two independent variables (IVs) on each LLS with significance level at .05. If analysis revealed a significant interaction effect, a profile plot was then used to depict the interaction visually. This would lead to further statistical analysis in determining the simple effects of gender at each level of language proficiency. Such simple effects analysis enables further exploration of the IVs' interacting nature (Clark-Carter, 2010). Post-hoc Tukey's Honestly Significant Difference (HSD) test was employed to determine the significant differences of all possible levels of the IVs.

Prior to statistical analyses, outliers that exceeded 1.5 (interquartile range) of boxplots were removed (Hoaglin et al., 1986). Hence, there were 1677 (98.7%) remaining responses for both memory and metacognitive strategies, 1655 (97.4%) for cognitive strategy, 1676 (98.6%) for affective strategies, and 1693 (99.6%) for social strategy. Since no outlier was detected for compensation strategies, all the 1699 (100.0%) responses collected were used for statistical analyses. The percentage of responses identified as outliers ranged from 0.4% to 2.6% of the total responses for all the categories of LLSs. Skewness values of all categories of LLSs that ranged from -.083 (SE = .060) to .099 (SE = .060) were categorised as "fairly symmetrical" distributions (Bulmer (1979, p. 63). The Kurtosis values for all categories of LLSs ranged between -.365 (SE = .119) and -.029 (SE = .119).

RESULTS AND DISCUSSION

Table 1: Cross-tabulation of gender and language proficiency on language learning strategies

LLSs		Gender	Language Proficiency								
			Low Achievers			Average Achievers			High Achievers		
			n	M	SD	n	M	SD	n	M	SD
Direct	MEM	Male	192	2.95	.58	308	2.96	.57	25	3.04	.59
		Female	467	3.02	.52	633	3.10	.58	52	3.07	.61
	COG	Male	189	3.07	.52	302	3.26	.55	23	3.51	.44
		Female	465	3.09	.47	624	3.34	.55	52	3.56	.58
	COM	Male	196	3.08	.62	312	3.23	.62	26	3.26	.85
		Female	473	3.03	.57	639	3.25	.66	53	3.24	.63
Indirect	MET	Male	194	3.32	.71	306	3.38	.70	24	3.63	.70
		Female	468	3.44	.64	633	3.51	.66	52	3.61	.78
	AFF	Male	195	3.03	.59	306	2.78	.60	25	2.82	.77
		Female	467	3.12	.56	632	2.96	.59	51	2.59	.62
	SOC	Male	195	3.17	.69	309	3.26	.72	26	3.39	.80
		Female	471	3.21	.66	639	3.33	.74	53	3.42	.77

Note. LLSs = language learning strategies, MEM = memory, COG = cognitive, COM = compensation, MET = metacognitive, AFF = affective, SOC = social

Table 1 illustrates the use of LLSs of first-year undergraduates based on gender and language proficiency as indicated by the mean scores. Based on Oxford's classification (1990), the learners were labelled as medium users with mean scores ranging from 2.5 to 3.4, whereas the mean scores of more than or equal to 3.5 were classified as high users. These

undergraduates mostly had "medium" use of LLSs regardless of gender and language proficiency. In addition, male and female high achievers "highly" utilised cognitive and metacognitive strategies. Nevertheless, female high achievers demonstrated a slightly higher mean score in employing cognitive strategies, whereas male high achievers showed greater use of metacognitive strategies. Besides that, female average achievers were high users of metacognitive strategies.

Table 2: Interaction effect of gender and language proficiency on language learning strategies

LLSs	Type III SS$_{GxLP}$	df$_{GxLP}$	MS$_R$	F	p
Direct	.367	2	.191	.960	.383
(i) Memory	.686	2	.316	1.085	.338
(ii) Cognitive	.317	2	.275	.576	.562
(iii) Compensation	.543	2	.394	.689	.502
Indirect	.443	2	.284	.780	.459
(i) Metacognitive	.349	2	.451	.387	.679
(ii) Affective	2.776	2	.347	3.996*	.019
(iii) Social	.126	2	.501	.126	.882

Note. LLSs = language learning strategies, G = gender, LP = language proficiency, R = residual

Table 2 indicates the interaction effect of two IVs, namely gender and language proficiency in using LLSs. Two-way ANOVA tests revealed that there were no significant interactions of gender and language proficiency in using memory, cognitive, compensation, metacognitive, and social strategies ($p > .05$) except for affective strategies, $F_{(2, 1670)} = 3.996$, $p < .05$. With such significant interaction, the differential effects of IVs on affective strategies could be depicted visually (Leech et al., 2008) as shown in Figure 1.
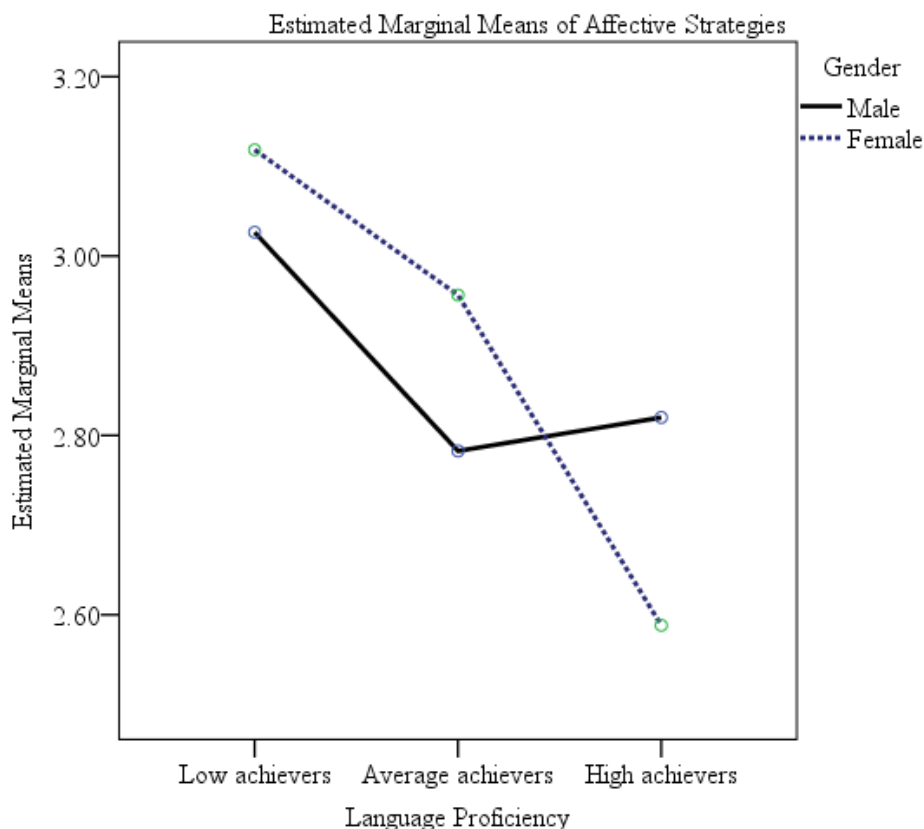

Figure 1: Profile plot of gender and language proficiency in using effective strategies

The nonparallel lines indicate an interaction between gender and language proficiency in employing effective strategies in learning English (Figure 1). Moreover, utilising effective strategies in learning English between male and female learners becomes more visible with the increase in respondents' language proficiency levels, as depicted by larger gaps between the plotted lines (Figure 1).

Table 3: Simple effect of gender and language proficiency on effective strategies

Source	Type III SS	df	MS	F	p	Tukey's HSD
G X LP	29.722	5	5.944	17.115*	.000	ML, FL, FA > MA, FH
Error	580.035	1670	.347			FL > FA

Note. G = gender, LP = language proficiency, ML = male low achievers, MA = male average achievers, FL = female low achievers, FA = female average achievers, FH = female high achievers; ">" = significant higher mean scores at p < .05

Analysis of simple effect based on gender and language proficiency of these undergraduates revealed that these two IVs had a high significant effect on the use of affective strategies $F_{(5, 1670)} = 17.115$, $p < .05$. Tukey's HSD statistical test was further conducted to identify significant differences among the six levels of interaction effects of respondents' gender and language proficiency in employing affective strategies. Tukey's HSD test was chosen as the test for homogeneity of variances as Levene's test was not significant ($p > .05$) (Leech et al., 2008). It was found that male low achievers, female low and average achievers had higher significant use of affective strategies compared to male average achievers and female high achievers ($p < .05$). Female low achievers also significantly employed greater affective strategies compared to female average achievers ($p < .05$).

The use of effective strategies was relatively high for males and females with low levels of English language proficiency (Figure 1). Although female low achievers (M = 3.12, SD = .56) highly used affective strategies compared to male low achievers (M = 3.03, SD = .59), Tukey's HSD test indicated no significant difference between them ($p > .05$). In addition, females with higher English language proficiency (M = 2.59, SD = .62) significantly applied less affective strategies in comparison to female low achievers (M = 3.12, SD = .56) and female average achievers (M = 2.96, SD = .59) ($p < .05$).

The use of effective strategies by male high achievers (M = 2.82, SD = .77) did not differ significantly from male low achievers (M = 3.03, SD = .59) and male average achievers (M = 2.78, SD = .60). Despite the obvious differences in using effective strategies between male and female learners as their levels of language proficiency increase (Figure 1). Nevertheless, Tukey's HSD test showed that female average achievers significantly utilised more affective strategies than male average achievers ($p < .05$).

DISCUSSION

The first-year undergraduates had a medium deployment of LLSs irrespective of gender or language proficiency levels. Given this, the current finding partially concurs with the finding by Ansyari and Rahmi (2016) on 180 students at a senior high school, which revealed that the learners employed all the strategies at a medium level, regardless of their gender. Conversely, this study's result partially contradicted the findings of a study in which male and female university students sometimes applied the LLSs (Viriya & Sapsirin, 2014). Since the current study has attempted to discuss the interaction effect of gender and language proficiency simultaneously on their use of LLSs, such finding might complement further past literature as

the majority of past empirical investigations reported the use of LLSs based on individual variables like gender (Ansyari & Rahmi, 2016; Viriya & Sapsirin, 2014) or language proficiency (Boroujeni et al., 2014; Sukying, 2021).

In addition, past research (Chang, 2012; Hastuti, 2014; Nadif, 2025; Yayla et al., 2016) also focused on the frequency of the overall use of LLSs. For example, Yayla et al.'s (2016) study on 524 university students found they employed all six strategy categories on average. Similarly, Hastuti's study on 49 college students revealed that all students employed strategies employed strategies at medium range. Chang's research on 279 EFL at a comprehensive university in Taiwan also indicated the learners had average use of LLSs. Nadif's study on 294 EFL undergraduates found a moderate use of language learning strategies. However, this research is unique as it incorporated two variables, namely gender and language proficiency, and investigated the interaction effects since language learning is a complex process and could be affected by many other variables. Furthermore, there is still a paucity of research investigating the interaction effect of more than one variable that might affect the preferences of strategies in the literature.

This study reported that even though male and female high achievers highly used metacognitive and cognitive strategies, male high achievers had greater use of metacognitive strategies. In contrast, female high achievers favored more cognitive strategy. Female average achievers also demonstrated higher use of metacognitive strategies. Such findings partially adhered to the findings in a study on 96 Iranian EFL university learners, which revealed that learners had a higher use of metacognitive strategy than cognitive strategies (Vahdany et al., 2016).

The current study also shows that first-year undergraduates with better language proficiency demonstrated greater deployment of metacognitive strategies. Rahimi and Katal (2012, as cited in Vahdany et al., 2016) stated that metacognitive strategies assisted learners in greater academic achievement and better learning outcomes in face-to-face and virtual contexts. Raoofi et al. (2013) also proclaimed that previous research showed metacognition might contribute to second or foreign language learning achievement as learners employing metacognitive strategies know how and when to employ suitable strategies to attain a particular task effectively. Zhang and Goh (2006, as cited in Roofi et al., 2013) also stipulated that learners who employed metacognitive strategies could plan, monitor, and evaluate their own language learning process. Similarly, Sun (2013) acknowledged that metacognitive strategies are the most important and promote independent learning. Roofi et al. (2013) also opined that metacognitive strategies encourage learners to self-regulate their learning.

Another interesting finding was that a significant interaction effect of gender and language proficiency variables was only found when utilising effective strategies. Despite the obvious differences in using affective strategies by highly proficient undergraduates, further tests revealed that only male and female average learners differed significantly in employing affective strategy. Additionally, female average learners had greater use of affective strategies than male average achievers. The results of the current study contradicted the findings of a study on 403 Iranian engineering students at a university in Iran, in which a significant effect was found on the use of memory strategies between gender and language proficiency (Nahavandi & Mukundan, 2014). Another study by Salahshour et al. (2013) did not further elaborate on the interaction effect between gender and language proficiency on the use of LLSs. Instead, it revealed that metacognitive and social strategies differed significantly between the high and low-proficient learners, whereas female learners had more significant use of cognitive strategies than males (Salahshour et al., 2013).

CONCLUSION

The first-year undergraduates were medium users of all the LLSs despite their gender and language proficiency levels. Results also illustrated that both male and female high achievers greatly employed metacognitive and cognitive strategies. Nevertheless, male high achievers generally employed more metacognitive strategies than female high achievers. The current study also revealed that significant interaction effects of gender and language proficiency were found in utilising affective strategy.

Future research should endeavour to reinforce the use of diversified language learning strategies, especially metacognitive strategies, in various contexts, like online and offline learning, through strategy training. Moreover, online learning is gaining popularity nowadays as students are encouraged to learn independently besides the traditional teaching methods (Azuddin et al., 2024). Hence, identifying appropriate strategies to cater to different learning contexts could encourage motivation and self-directed learning among learners. Additionally, since "gender style is the most resistant to technological reshaping" (van Deursen & van Dijk, 2014, as cited in Fung, Ting, & Chuah, 2023, p. 293), therefore it is worth investigating further gender differences in employing electronic or technology-based learning. For example, digital game-based learning can be incorporated into an effective and fun learning process (Ghani & Daud, 2023). This study ought to be replicated and incorporated with some qualitative methods like interviews or observations to obtain richer data on learners' variables and language learning strategies.

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