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The Relationships between Self-Regulated Language Learning, Language Learning Strategies and Language Proficiency

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ABSTRACT

Although self-regulated language learning (SRLL) has attracted much attention recently, few studies have investigated how this variable contributes to learners' language proficiency. In addition, previous studies have not compared the relationships between SRLL and LP with language learning strategies (LLS) and LP. The present study examined the correlation between SRLL, LLS, and LP among 313 Iranian high school English language learners. Participants completed the SRLL questionnaire developed by Salehi and Jafari (2015), the translated version of the EFL version of the Strategy Inventory for Language Learning (SILL), which was translated and validated by Tahmasebi (1999), and a self-assessment form. To achieve the study's objectives, a correlational analysis design and convenience sampling were used. The data analysis revealed the strongest correlations between metacognitive strategies ($r = .553$, $p < .05$) and other learning strategies (LLS). Furthermore, metacognitive strategies significantly predicted SRLL, $F(1, 309) = 135.932$, $p < .05$. Additionally, the strongest correlations were found between metacognitive strategies ($r = .499$, $p < .05$), SRLL, and LP. Finally, metacognitive strategies emerged as the best predictors of LP, $F(1, 308) = 92.089$, $p < .05$. The study highlights the correlation between SRL, LLS, and LP, emphasizing the importance of incorporating SRL into the teaching and learning process for educators. The pedagogical implications of the findings and suggestions for further research are also discussed.

KEYWORDS: Language learning strategies; Language proficiency; Self-regulated language learning

INTRODUCTION

Many research studies in education and psychology have focused on self-regulated learning (SRL) (e.g., Schunk & Zimmerman, 1997; Zimmerman, 1998) and have tried to show how students can learn and achieve their goals despite unfavorable learning conditions. Generally, self-regulation has been defined as students' efforts to direct their learning by setting goals, planning how to achieve them, monitoring the learning task, employing learning strategies to solve problems, and evaluating performance (Thao & Long, 2020). Ben-Eliyahu and Bernacki (2015) tried to shed light on the complexities of SRL. Zimmerman (2000) reported that self-regulation includes all cognitive, metacognitive, behavioral, affective, and motivational learning characteristics. Different research studies have shown that self-regulation positively affects second language learning. For example, Amini, Anhari, and Ghasemzadeh (2020) reported that self-regulation positively contributes to L2 reading development.

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Since the 1970s, various studies have indicated that the ability to use language learning strategies (LLS) is an essential aspect of communicative competence, and it has been shown that effective strategy use could improve students' performance (Cohen, 2014; Graham, 2007; Grenfell & Harris, 2002; Macaro, 2002; O'Malley & Chamot, 1990; Oxford, 1990). Dell Hymes (1966) coined the term *Communicative Competence* to react against the concept of linguistic competence, which Chomsky (1965) proposed. Hymes's conceptualization of communicative competence was later extended, and it was argued that there are four components of language competence: linguistic competence, sociolinguistic competence, discourse competence, and strategic competence (Bachman, 1990; Bachman & Palmer, 1996; Canale & Swain, 1980; Celce-Murcia, Dörnyei, & Thurrell, 1995; Hymes, 1971, 1972; Oxford, 1990; Pawlikowska-Smith, 2002). O'Malley and Chamot (1990) and Oxford (1990) elaborated on strategic competence. They presented a classification of different learning strategies, which refer to the processes and actions the language learners consciously use to help them acquire the target language. Communication strategies that the learners use to overcome communication problems were also introduced to shed light on another aspect of strategic competence (Bialystok, 1990; Ellis, 2008; Selinker, 1972). More recently, Oxford (2016) proposed a modified taxonomy based on her previous framework in 1990 and proposed the Strategic Self-Regulation (S2R) model of language learning. In S2R, she discriminated between previously introduced strategies and meta-strategies and elaborated on the learner's self-regulation of cognition, social interaction, and affect.

According to Fukuda (2017), the number of studies examining the relationship between SRL and L2 proficiency needs to be improved. As indicated by Abbasian and Hartoonian (2014), there are a few research findings on the relationship between LLS and L2 proficiency; however, there are few traces in the literature. Although previous research in education and language teaching underscored the role of both SRLL and LLS in language acquisition and language learners' performance, few studies have investigated the relationships between SRLL and LLS empirically. In addition, the studies have not compared the relationships SRLL and strategies have with language proficiency (LP). In this study, therefore, we have tried to address these issues by answering the following research questions:

RQ1: Are there any statistically significant relationships between different components of language learning strategies (metacognitive, cognitive, memory, compensation, affective, and social) and SRLL?

RQ2: Which type(s) of language learning strategies (metacognitive, cognitive, memory, compensation, affective, or social strategies) can best predict SRLL?

RQ3: Are different language learning strategies (metacognitive, cognitive, memory, compensation, affective, or social strategies) and SRLL significantly related to language proficiency?

RQ4: Which variables (different types of strategies or SRLL) are the best predictors of language proficiency?

REVIEW OF THE RELATED LITERATURE

The ability to regulate one's learning is now considered an essential area of education research. Zimmerman and Schunk (2011) considered SRL as the ability to establish learning goals, apply practical learning strategies, and maintain motivation. In the study conducted by Thao and Long (2020), English-major first-year students utilized SRLL strategies to enhance their English LP. As Thao and Long (2020) mentioned, language learners use strategies for self-regulated language learning (SRLL) to enhance their LP. Fukuda (2018) investigated the relationship between learners' SRLL and proficiency by examining the differences between low- and high-proficiency students. The findings indicated that motivational factors had clear connections with English proficiency. Developing self-regulated learning strategies (SRLS) may establish a sense of self-efficacy and engage students in language learning more actively. Mirhassani, Akbari, and Dehghan (2007) studied the relationship between goal-orientedness, SRL, and LP among Iranian EFL learners. The results demonstrated that language learners who self-regulate the learning process perform better on LP tests. Therefore, Mirhassani et al. (2007) concluded that SRL relates to LP. Wang and Bai (2017)

asserted that SRL strategies and self-efficacy beliefs can predict EFL students' English proficiency in EFL classes. In addition, different research studies on SRLS have been carried out (e.g., Gharbavi & Mousavi, 2012; Ok, 2003; Pazhakh, 2006), and in some of the studies, the relationship between SRLS and learners' LP has been examined. The results of these studies demonstrated a connection between English LP and the utilization of SRLS (Baker & Boonkit, 2004; Lan & Oxford, 2003; Zhang, Gu, & Hu, 2008). They have also shown that English language learners who depend on these strategies achieve better proficiency scores (Green & Oxford, 1995; Lan & Oxford, 2003). Abbasian and Hartoonian (2014) studied the relationship between SRLS, learners' LP, and reading comprehension. They reported that learners' LP statistically increased due to using SRLS. The results showed that SRL is a strong predictor of LP. Besides, the results showed a positive correlation between all subscales of SRL (planning, self-checking, effort, self-efficacy) and LP. The results indicated a remarkable correlation between EFL learners' LP and their employment of SRLS. Mirhassani et al. (2007) indicated a significant relationship between SRL and LP as they investigated the relationship between SRLS and LP in general and reading comprehension.

Amini et al. (2020) investigated how self-regulation mediates metacognitive strategy awareness (global, problem-solving, and support) and second language reading proficiency. The results demonstrated that strategy instruction alone cannot guarantee increased reading proficiency. Morshedian, Hemmati, and Sotoudehnama (2016) suggested that EFL readers could be educated through SRL and become proficient in second-language reading. Morshedian and her colleagues experimentally tested Zimmerman's three-stage model of self-regulation (Zimmerman, 2013) for developing second-language reading proficiency, and the results illustrated that it can positively affect L2 reading. They concluded that the study can motivate teachers to employ self-regulation strategies in their reading classes. They also pointed out that the findings can encourage EFL material developers and educators to create opportunities for students to use self-regulation strategies through the appropriate textbooks and activities. Ghonsooly and Shirvan (2010) demonstrated a significant positive correlation between EFL students' motivational self-regulatory strategies and L2 reading and writing achievements. Nevertheless, Gelbar (2013) demonstrated that SRLSs, oral reading fluency, and cognitive ability do not predict reading comprehension.

A qualitative study by Andrade and Bunker (2011) demonstrated clear progress in L2 writing because of self-regulatory strategies. Teng and Zhang (2016) investigated writing proficiency and SRL. The results showed that self-regulated writing strategies strongly predict students' writing proficiency in EFL classes. Teng and Zhang (2016) mentioned that self-regulation functioned as an integrated construct that impacts students' writing proficiency in EFL classes. The authors also investigated the predictive effects of writing strategies for SRL on EFL learners' writing proficiency. The results confirmed that nine self-regulated writing strategies considerably affected students' writing outcomes in EFL classes. The findings endorse the validity of a higher-order model focusing on cognition, metacognition, social behavior, and motivational regulation (Zimmerman, 2011). Yabukoshi (2018) studied the effect of self-regulation and self-efficacy on L2 listening proficiency. The findings of this qualitative inquiry clarify the possible interactions between self-regulation, self-efficacy, and language achievement in the self-instructional learning classes.

LANGUAGE LEARNING STRATEGIES AND LANGUAGE PROFICIENCY

LLS have been defined in the literature in different ways. Wenden (1987) believed that LLS are plans, routines, and operations that learners use to obtain, store, retrieve, and use information. According to O'Malley and Chamot (1990), they help learners understand, learn, and remember information. As Oxford (1990) pointed out, they are used to increase language learners' chances of success in language learning. In his definition of LLS, Cohen (2014) emphasized that learners consciously select LLS to overcome language learning obstacles.

O'Malley and Chamot (1990) divided strategies into cognitive, metacognitive, and social-affective strategies. They described the first as strategies related to processing information, the second as strategies that include thinking about

the learning process, planning for learning, and monitoring comprehension or production, and the third as strategies involved in managing emotions and interacting with others. Oxford (1990) also presented an influential taxonomy of LLS that differentiated between cognitive, metacognitive, affective, and social strategies and classified them as direct or indirect.

Several studies have shown the relationship between LLS and language learning proficiency. Rao (2012) studied the relationship between students' use of LLS and English proficiency. The results indicated that regular use of LLS may result in high English proficiency, encouraging the students' use of LLS. Yildirim and Akcayoglu (2013) studied the effect of strategy-based English language instruction (SBELI) on the LP of gifted students. The results indicated that SBELI positively affected LP and helped them improve and make their language learning quick, easy, practical, and pleasant. Forbes and Fisher (2015) examined the effect of LLS use within secondary school foreign language lessons and proficiency in speaking. The results indicated that metacognitive strategies positively affected students' confidence and proficiency in speaking skills. Furthermore, Stander (2020) also reported statistically significant relationships between the use of strategies and LP.

METHOD

RESEARCH DESIGN

The study was a quantitative one that used a comparative research strategy. The study design was based on correlational analysis. In correlational designs, participants can present data related to two distinct variables. Within correlation analysis, researchers attempt to identify the extent of the relationship between two or more variables. Correlation studies allow researchers to find out the degree to which the relationship between results on a particular test and scores on another (Hatch & Farhady, 1982).

PARTICIPANTS

The sample comprised 127 female and 186 male English language learners selected from seven classes in three senior high schools in Sari, Iran. The number of participants in the 10th, 11th, and 12th grades was 135, 164, and 14, respectively. The learners' ages ranged between 15 and 21, with a mean of 16.40. Because of its advantages and the limitations of the research, the convenience sampling method was used to choose the students who volunteered to participate in the study by completing a consent form. As stated by Cohen, Manion, and Morrison (2017), a convenience sample is a sampling strategy used for case studies or series, as it is easily accessible and does not generalize about the wider population, with negligible generalizability parameters.

INSTRUMENTS

The first instrument used in the study was a 40-item questionnaire developed and validated by Salehi and Jafari (2015) in English and Persian. The questionnaire was used to assess SRLL on a six-point Likert scale by measuring intrinsic motivation, self-efficacy, locus of control orientation, attitude, organization, memory strategies, self-monitoring, self-evaluation, planning, goal setting, concentration and sustained attention, effort regulation, regulation of the environment, and help-seeking in language learners. The reliability of the data obtained through this questionnaire was .85. Confirmatory and exploratory factor analyses supported the questionnaire's construct validity and satisfactory reliability coefficient. Consequently, the questionnaire's attributes strengthened the measurement's validity.

The second instrument used in the study was a Persian version of Oxford's (1990) Strategy Inventory for Language Learning (SILL) questionnaire, which was adapted for Iranian learners by Tahmasebi (1999). This instrument assessed students' use of memory, cognitive, compensation, metacognitive, affective, and social strategies. The Persian version of the questionnaire has been utilized in several studies (e.g., Tahmasebi, 1999; Azar & Saeidi, 2013; Akbari &

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Hosseini, 2008; Abedini, Rahimi, & Zare-ee, 2011), and its reliability, as measured by Cronbach's alpha, was reported to be 0.89. The instrument comprises 50 items categorized into six groups: (1) memory-related strategies, (2) cognitive strategies, (3) compensatory strategies, (4) metacognitive strategies, (5) affective strategies, and (6) social strategies.

A self-assessment form was also used as the third instrument to obtain data related to the participants' LP. This self-report assessment tool, which was used by Taguchi, Magid, and Papi (2009), was administered to obtain data about language learners' proficiency levels and classify them into five categories: (1) beginner, (2) advanced beginner, (3) pre-intermediate, (4) intermediate, and (5) advanced intermediate.

PROCEDURE

At the beginning of data collection, arrangements were made with three senior high schools, and permission was acquired after clarifying the objectives of the study. Only those students who showed their agreement to participate in the study by completing a consent form were involved. They filled out the SRLL questionnaire, SILL, and the self-assessment form. The instructions for completing the questionnaires and the form were provided on the first page of the instruments, and the participants responded to the items in 35 minutes. All the participants were personally appreciated after gathering the data.

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RESULTS

DESCRIPTIVE STATISTICS

In the first stage of data analysis, the participants' SRLL and proficiency scores were analyzed using descriptive statistics. In addition, students' scores related to each subscale of the SILL were analyzed, and the results are presented in Table 1. The normality of the data was also checked by calculating skewness and kurtosis. As shown in Table 1, the skewness and kurtosis values were within the acceptable range (e.g., Gravetter & Wallnau, 2014), and therefore, it was concluded that the data were normally distributed.

Table 1
Descriptive Statistics of SRLL questionnaire

						Skewness		Kurtosis	
	N	Min	Max	Mean	SD	Statistic	Std. Error	Statistic	Std. Error
SRLL	311	85.00	206.00	159.6527	20.74006	-.593	.138	.861	.276
Cognitive	313	14.00	64.00	46.0096	10.35352	-.459	.138	-.166	.275
Memory	313	9.00	42.00	28.8083	6.73122	-.499	.138	.124	.275
Metacognitive	313	9.00	45.00	32.5080	7.83529	-.611	.138	-.014	.275
Compensation	313	6.00	29.00	19.1853	4.61715	-.446	.138	-.070	.275
Affective	313	6.00	30.00	18.2652	4.95977	-.168	.138	-.383	.275
Social	313	6.00	30.00	21.3482	5.11817	-.629	.138	.051	.275
Pro_Self_test	311	1.00	6.00	3.69	1.116	-.824	.138	.164	276
Valid N (listwise)	309								

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ANSWERING THE FIRST RESEARCH QUESTION

The first research question examined the relationships between SRLL and various types of LLS. The data were analyzed using the Pearson correlation coefficient to explore these relationships. Table 2 displays the results of the Pearson product-moment correlation. As shown in Table 2, the strongest correlations are observed between SRLL and metacognitive strategies ($r = .553$, $p < .05$), social strategies ($r = .504$, $p < .05$), and cognitive strategies ($r = .492$, $p < .05$). The correlation between SRLL and compensation strategies, while statistically significant, is the weakest ($r = .386$, $p < .05$).

Table 2
Correlations Between SRLL And Different Types of LLS

		SRL	Memory	Cognitive	Com	Meta	Affective	Social
SRLL	Pearson Correlation	1	.470**	.492**	.386**	.553**	.464**	.504**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	311	311	311	311	311	311	311

Note: Meta = Metacognitive, Com = Compensation
**. Correlation is significant at the 0.01 level (2-tailed)

ANSWERING THE SECOND RESEARCH QUESTION

The second research question focused on the best predictors of SRLL. The first research question was answered, and the relationship between SRLL and other strategies was statistically demonstrated. Table 3 shows the results of regression analysis, which was used to see to what extent different kinds of strategies can predict SRLL. The R square value ($R2 = .306$) indicates that metacognitive strategy can explain 30% of the variance, and it is the strongest predictor of SRLL. Moreover, the results have shown that the addition of memory strategy to the regression model can increase the predictive power by almost 2%, and finally, metacognitive, memory, and social strategies account for 33% of the total variance.

Table 3
R-Square Values for Predictor and Dependent Variables (SRLL)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.553[a]	.306	.303	17.31187
2	.572[b]	.327	.322	17.07288
3	.579[c]	.335	.329	16.98914

a. Predictors: (Constant), Metacognitive
b. Predictors: (Constant), Metacognitive, Memory
c. Predictors: (Constant), Metacognitive, Memory, Social

As shown in Table 4, metacognitive strategies significantly predicted SRLL, $F(1, 309) = 135.932$, $p < .05$. Additionally, the results indicated that metacognitive and memory strategies together significantly predicted the dependent variable, $F(2, 308) = 74.738$, $p < .05$. Finally, the regression model that included metacognitive, memory, and social strategies was also significant, $F(3, 307) = 51.666$, $p < .05$.

Journal of Applied Linguistics Studies, Vol.4, No.1, 2024: 148-161
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Table 4
Statistical Significance of the Final Regression Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40738.934	1	40738.934	135.932	.000[b]
	Residual	92607.561	309	299.701		
	Total	133346.495	310			
2	Regression	43569.701	2	21784.850	74.738	.000[c]
	Residual	89776.794	308	291.483		
	Total	133346.495	310			
3	Regression	44736.828	3	14912.276	51.666	.000[d]
	Residual	88609.667	307	288.631		
	Total	133346.495	310			

a. Dependent Variable: SRL
b. Predictors: (Constant), Metacognitive (M)
c. Predictors: (Constant), Metacognitive, Memory (MM)
d. Predictors: (Constant), Metacognitive, Memory, Social (MMS)

ANSWERING THE THIRD RESEARCH QUESTION

The third research question of this study explored the relationships between SRL, LLS, and PL. To determine the extent of these relationships, correlations between the variables were calculated. Table 5 illustrates the magnitude of these relationships. The results indicate that the strongest correlations are observed for metacognitive ($r = .499$, $p < .05$), cognitive ($r = .478$, $p < .05$), and compensation ($r = .475$, $p < .05$) strategies. In contrast, social ($r = .363$, $p < .05$), affective ($r = .341$, $p < .05$), and memory ($r = .337$, $p < .05$) strategies show the weakest, though statistically significant, correlations with LP.

Table 5
Correlations Between SRLL, Different Types of LLS and LP

	SRL	Memory	Cognitive	Compensation	Metacognitive	Affective	Social
Language proficiency Pearson Correlation	285*	.337**	.478**	.475**	.499**	.341**	.363**
Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
N	309	311	311	311	311	311	311

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

The fourth research question of this study investigated the predictive power of SRLL and different types of strategies. Table 6 presents the results of a multiple regression analysis, which was conducted to identify the best predictors of proficiency level. According to the findings, the use of metacognitive strategies accounts for 23.1% of the total variance ($R^2 = .231$). Additionally, the combined use of metacognitive and compensation strategies explains 27.5% of the variance ($R^2 = .275$).

Journal of Applied Linguistics Studies, Vol.4, No.1, 2024: 148-161
https://jals.aliabad.iau.ir
ISSN: 2820-9974

Table 6
R-Square Values for Predictor Variables and LP

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.480[a]	.231	.228	.965
2	.524[b]	.275	.270	.939

a. Predictors: (Constant), Metacognitive
b. Predictors: (Constant), Metacognitive, Compensation

ANSWERING THE FOURTH RESEARCH QUESTION

The F-ratio in the ANOVA tests in Table 7 indicates which variables significantly contribute to the regression model. The results show that the metacognitive strategy significantly predicted the dependent variable, LP, $F(1, 308) = 92.089$, $p < .05$. Furthermore, the combination of metacognitive and compensation strategies also significantly predicted LP scores, $F(1, 308) = 51.030$, $p < .05$.

Table 7
Statistical Significance of The Final Regression Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	85.789	1	85.789	92.089	.000[b]
	Residual	285.997	307	.932		
	Total	371.786	308			
2	Regression	102.061	2	51.030	57.893	.000[c]
	Residual	269.726	306	.881		
	Total	371.786	308			

a. Dependent Variable: Language proficiency
b. Predictors: (Constant), Metacognitive
c. Predictors: (Constant), Metacognitive, Compensation

DISCUSSION

The core objective of the current study was to examine the relationships between SRLL, LLS, and LP. The findings of the present study indicated that metacognitive and compensation strategies are the best predictors of LP, accounting for 27% of the total variance. Other variables, including SRLL, could not predict LP. Consequently, it was concluded that metacognitive strategies can be considered the most important predictor of LP, while SRLL does not significantly contribute to language learners' level of proficiency. Moreover, it was found that the use of metacognitive strategies is the strongest predictor of SRLL.

The results support the previous six SRL models proposed by scholars (e.g., Zimmerman, 1986; Winne, 1995; Winne & Hadwin, 1998; Pintrich, 2000; Efklides, 2011; Hadwin, Oshige, Gress, & Winne, 2010). The results also support Zhang and Zhang (2019), who indicated that metacognition and SRL are closely interconnected. Metacognition has been introduced as an essential component of different SRL models. For instance, Efklides (2011) proposed the Metacognitive and Affective Model of Self-Regulated Learning (MASRL), in which the role of metacognition in SRL is delineated. In other models, including the six-component model of SRL (Boekaerts, 1996)

and Pintrich's SRL model (Pintrich, 2000), metacognition is also a component of SRL. The study found that metacognitive strategies contribute most to SRLL. It was also found that memory and social strategies can only slightly improve the model's predictive power (see Table 3), while cognitive and affective strategies do not significantly contribute to SRLL. Our findings, therefore, reflect the superiority of metacognitive strategies over other LLS introduced by Oxford (1990) and underscore the vital role metacognitive strategies play in SRLL.

The results have also indicated weak to moderate relationships between LLS and LP (see Table 5). In addition, metacognitive and compensation strategies are the strongest predictors of L2 proficiency. The results support Stander (2020), who investigated the relationship between LLS and LP and found a significant correlation between compensation strategies and learners' proficiency levels in South Africa. However, she did not report a significant correlation between other language learning strategy types and L2 proficiency. Stander (2020) also reported that LP is significantly related to LLS ($r = 0.26$).

Moreover, the present study's findings support the idea that metacognitive strategies have the most vital relationship with different aspects of second LP, including reading (Amini et al., 2020). Amini, Anhari, and Ghasemzadeh (2020) explored the relationship between metacognitive strategy awareness, self-regulation, and reading proficiency of Iranian EFL learners and showed that metacognitive reading strategies positively affect reading proficiency through self-regulation. Fukuda (2018) investigated SRLL and proficiency among Japanese EFL learners. The results of this study revealed that metacognitive strategies and two other variables associated with SRLL (effort regulation and coping with problems) significantly predict language learners' proficiency. The study also showed that, compared with SRLL and other types of strategies, metacognitive strategies can be regarded as the strongest predictor of L2 proficiency.

Therefore, the present study's findings show the importance of metacognitive strategy use, which has the most vital relationship with SRLL and is generally the strongest predictor of SRLL. Most of the theoretical models of SRL also reflect the vital role of metacognitive strategies and metacognition (e.g., Efklides, 2011; Winne & Hadwin, 1998). In addition, compared with other kinds of learning strategies and SRLL in general, metacognitive strategy was found to be the strongest predictor of L2 proficiency. Interestingly, SRLL, which has a multidimensional and complex construct and consists of many different variables, cannot predict the level of proficiency and is excluded from the regression model. The study's findings primarily support the MASRL model proposed by Efklides (2011). The model consisted of four main components: metacognition, motivation, and affect. However, the study's results demonstrated the significance of metacognitive strategy in SRL. The study's findings also relate to the previous SRL models and provide empirical evidence to support SRL's necessity for (meta)cognition in SRL (Panadero, 2017).

CONCLUSION

The current study examined the relationships between SRL, LLS, and LP. The ability to use learning strategies has been considered an essential aspect of communicative competence (e.g., Canale & Swain 1980), and the results obtained in this study shed light on the relationships between these strategies, second language proficiency, and SRL, which is a relevant concept initially developed and introduced in educational psychology. The results can be used to propose models of SRL learning in second language acquisition, and because the use of metacognitive strategies was found to be the most critical predictor of L2 proficiency, materials developers, language learners, and teachers might need to think about how they can be developed more effectively in English language classes. Follow-up research can examine the extent to which the unique sociocultural characteristics of the population affect the results, and they can explore the role of age, gender, and different aspects of the learning environment in the relationships between SRLL, learning strategies and L2 proficiency.

The present study has several important pedagogical implications. First, SRL appears to have a strong relationship with LLS, and language teachers and educators might consider improving metacognitive strategies to potentially

increase students' SRL. Metacognitive strategies are also strongly related to LP. Therefore, language teachers and educators should improve this LLS to enhance students' LP. The impact of SRL on LP should be further explored. However, the results indicated that only metacognitive strategies significantly enhance students' LP. These findings can assist high school language teachers in improving students' LP for their final exams.

Finally, this investigation had some limitations. Only male and female high school pupils participated in this study, and exclusively quantitative data were acquired. Future research could employ college students from various fields of study and use random sampling to ensure a closer comparison between research participants and the target population. Additionally, a mixed-methods design could be utilized to generate more valid and reliable results.

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