

The Predictive Effects of Self-Regulated Writing Strategies on Writing Performance of Saudi EFL University Students

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Abstract: The present study aims to examine the predictive effect of self-regulated writing strategies of students' writing performance and explore the differences between higher and lower writing achievers in self-regulated writing strategies. A total of 202 English as a foreign language students at the Northern Border University in Saudi Arabia volunteered to participate in this study. A Writing Strategies for Self-Regulated Learning Questionnaire and a Writing Test were administered to compare the differences between high and low writing proficient learners in Self-Regulated Learning. Pearson correlation coefficient, multiple regression analysis, and independent-samples t-test were calculated. The results showed that both text processing and course memory strategies predicted the writing performance of the participants. Results also revealed significant differences in course memory and feedback handling strategies between higher and lower writing achievers. The findings also indicated a low relative contribution to the course memory and text processing in predicting writing performance. These strategies explained only 6.4% of the total variance of writing performance. Based on these findings, practical implications and recommendations for future research were provided.

Keywords: Predictive effects, self-regulated strategies, writing performance, English as a foreign language.

الكشف عن الأثر التنبؤي لاستراتيجيات الكتابة للتعلم المنظم ذاتياً على أداء طلاب الجامعة في الكتابة

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مستخلص: هدفت الدراسة الحالية إلى الكشف عن الأثر التنبؤي لاستراتيجيات الكتابة للتعلم المنظم ذاتياً على أداء الطلاب في الكتابة واستكشاف الاختلافات بين مرتفعي ومنخفضي التحصيل في استراتيجيات الكتابة للتعلم المنظم ذاتياً. تكونت عينة الدراسة من 202 طالباً وطالبة من متعلمي اللغة الإنجليزية كلغة أجنبية بجامعة الحدود الشمالية في المملكة العربية السعودية. اشتملت أدوات الدراسة على استبيان إستراتيجيات الكتابة للتعلم المنظم ذاتياً، بالإضافة إلى اختبار الكتابة بهدف مقارنة الاختلافات بين القدرة على الكتابة المرتفعة والمنخفضة في إستراتيجيات التعلم المنظم ذاتياً. تم استخدام معامل ارتباط بيرسون، وتحليل الانحدار المتعدد، واختبار (ت) للعينات المستقلة لتحليل البيانات. أظهر تحليل البيانات أن كلاً من استراتيجيات معالجة النصوص واستدعاء المعلومات قد تنبأت بأداء الكتابة للطلاب. كما كشفت النتائج عن اختلافات كبيرة في إستراتيجيات استدعاء المعلومات ومعالجة التغذية الراجعة بين منخفضي ومرتفعي التحصيل في الكتابة. وأشارت النتائج إلى المساهمة النسبية المنخفضة لإستراتيجيات استدعاء المعلومات ومعالجة النصوص في التنبؤ بأداء الكتابة. علاوة ذلك أوضحت هذه الإستراتيجيات 6.4% فقط من التباين الكلي لأداء الكتابة. وبناءً على هذه النتائج، تم تقديم تطبيقات عملية وتوصيات للأبحاث المستقبلية.

الكلمات المفتاحية: الأثر التنبؤي، استراتيجيات التعلم المنظم ذاتياً، الأداء الكتابي، اللغة الإنجليزية كلغة أجنبية.

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Recently, there has been an increased emphasis on the importance of developing EFL students' writing skills. Writing is one of the most important skills that the learner needs to acquire in the 21st century. The writing process involves various mental activities, including organizing thoughts into sentences, transforming sentences into written text, reviewing written material, detecting errors, and rewriting. Therefore, writing is a method by which students can make meaning and communicate in various content areas and specific domains.

Writing in a foreign language seems to be one of the most challenging skills for language learners in academic contexts. Negari (2011) pinpoints some challenges faced by undergraduate students, such as limited competences, lack of a practical approach, lack of proactive planning, weak academic writing conventions, as well as low motivation and self-efficacy. Likewise, undergraduate EFL Saudi students believe that writing is really a laborious task and claim to have poor writing skills and a lack of awareness of the potential strategies to enhance their writing (Al-Khairy, 2013; Fadda, 2012).

As a social cognitive process, writing in the EFL context requires the ability to plan, revise, and translate. The process of writing can be broken down into four simple stages: Planning, drafting, revising, and publishing. Each stage involves metacognitive activity and is progressively more complicated. Metacognitive skills are essential in the planning stage of writing (Lane et al., 2010). From the social cognitive theory perspective, self-regulated learning (SRL) advocates triadic interplay among the personal, behavioral, and environmental self-regulatory processes that learners use when they perform a task. Self-regulation of the writing process is critical as the writer must be goal-directed, resourceful, and reflective. Self-regulation permits the learners to set goals, use appropriate strategies, and design schedules to improve their writing (Oxford, 2013).

Research on self-regulation attempts to help higher education students use their

most optimal strategies in promoting self-regulation in academic literacy. Hence, the present study aims at exploring the predictive ability of SRL strategies in writing performance among EFL Saudi college students. Moreover, it seeks to identify how EFL students reported that the use of self-regulated writing strategies varies based on their writing performance level.

Literature Review

Self-Regulation Learning

The concept of SRL was formulated by Zimmerman (1986) to describe the features of effective learners. SRL describes how students can be successful or unsuccessful in an academic context, regardless of their mental abilities, as well as social and environmental backgrounds. Additionally, educational systems must empower learners with learning strategies to develop their learning (Oxford, 2013).

SRL process is defined by Ben-Eliyahu and Bernacki (2015) as sequenced processes performed by learners who regulate internal and external misdirection. It indicates the process of directing the self in a way that allows learners to transform their mental capabilities into an academic skill (Zimmerman, 2013). Therefore, SRL could impact subjective well-being, physical health, social interaction, economy, and online education (Kizilcec, Perez-Sanagustin & Maldonado, 2017). In the educational context, SRL significantly influences performance self-efficacy, motivation, conscientiousness, and academic performance (Pascoe et al., 2018).

Zimmerman (1990) developed a conceptual framework of SRL strategies for academic education. He categorized these strategies into (cognitive) beliefs and emotional states (personal), structuring learners' physical or social settings (environmental), and self-regulating overt motoric activities (behavioral) connected with writing. The model contains six scientific questions and their related psychological dimensions. Andrade and Evans (2013) argued that these dimensions fall into four categories of SRL: (a) metacognition, (b) motivation, (c) cognition, and (d) behavior.

Likewise, a profound multidimensional model designed by Teng and Zhang (2016) helps learners become well-regulated in their writing process. This multidimensional model focuses on four different dimensions that help the learners self-regulate their writing process: Cognition, metacognition, social behavior, and motivational regulation. Cognitive learning strategies involve mental review, expanding, and content-organizing, whereas metacognitive learning strategies involve critical thinking, self-learning, organizing, self-controlling, and self-assessment. While the inclusion of cognitive strategies determines students' skills in processing information, metacognitive strategies regulate and control learners' skills (Winne, 2011). Social behavior strategies focus on Feedback Handling (FH) and Peer Learning (PL). They also intend to measure and enhance the performance of students' writing under the assistance of peers and teachers. Motivational self-regulation strategies indicate the active use of strategies that promote learning and make learners autonomous, self-confident, and independent, so they can plan, organize, monitor, and assess their learning (Wigfield, Klauda & Cambria, 2011). Therefore, SRL strategies empower learners with planning, organizing, controlling, and evaluating skills to promote their learning (Ashman & Conway, 2017).

Self-Regulation Learning in Writing

SRL strategies have been shown to predict EFL learners' language proficiency (Wang & Bai, 2017). The authors report that the learners' ability to regulate their learning process is vital for accomplishing learning objectives (Ben-Eliyahu & Bernacki, 2015). EFL students use various strategies to regulate their writing, including cognitive strategies (goal setting, planning, and revising), as well as contextual and behavioral strategies (creating conducive environment and seeking social assistance) (Lane et al., 2010).

Recently, several studies have documented self-regulated writing strategies by undergraduates in EFL settings (Teng, 2016; Teng & Zhang, 2016). However, few studies have been conducted in the Arab world on the role of SRL strategies in EFL

writing among university students. For example, Al-Harthy, Was, and Isaacson (2010) found that the self-efficacy and metacognitive strategies of the students of the United Arab Emirates universities were the strongest predictors of academic achievement.

Sabourin, Shores, Mott, and Lester (2012) found that self-regulated behaviors, including goal setting and monitoring, were predictors of students' success in game-based learning environments. However, analyzing students' responses to update their 'status' in a game-based social network showed that monitoring students' behaviors in real-time were challenging. Students were then categorized into SRL-use that can be predicted by utilizing machine learning techniques. The authors also presented machine learning models to predict SRL strategies in student's interaction to provide scaffolding of self-regulation behaviors.

Csizer and Tanko (2015) examined the effect of self-regulatory strategy and its relationship to second language (L2) motivation, writing anxiety, and self-efficacy in the academic writing of freshmen students in Budapest. The results showed that the students utilized a medium level of strategy use. Additionally, these strategies have a positive relationship with motivation and self-efficacy and a negative correlation with anxiety. On the contrary, Kizilcec et al. (2017) proved that using self-regulating strategies on learners' capabilities in virtual contexts was not effective in improving their learning.

Abadikhah, Aliyan, and Talebi (2018) investigated the attitude of EFL university students towards self-regulated writing strategies. Also, the researchers compared the differences in the attitudes (remove the underline) of the two groups of students (in the third and fourth years) in the use of self-regulated strategies to find out the effect of academic education on the performance of students as future writers. A questionnaire was applied to examine six subscales of SRL: Motive, method, time, physical environment, social environment, and performance. The results showed that the participants were moderate to slightly high in the employment of self-regulatory

strategies and processes. Moreover, certain writing strategies, including pre-writing, goal-setting, and self-consequence, were not appropriately used by the students, indicating an important need to acquire additional strategies for their writing. The fourth-year students more frequently employed self-regulatory writing strategies than did their counterparts in the third year.

Teng and Huang (2018) conducted a study to validate the model of Teng and Zhang (2016) by collecting data administering the Writing Strategies for Self-Regulated Learning Questionnaire (WSSRLQ) to Chinese secondary school students. The authors examined the predictive effects of self-regulated writing strategies on secondary students' writing proficiency and identified characteristics that can predict self-regulated writing strategies. The results revealed that the nine self-regulated writing strategies were significantly effective in predicting EFL secondary school students' writing performance. This result supported the validity of a higher-order model focusing on cognition, metacognition, social behavior, and motivational regulation (Zimmerman, 2011). Moreover, self regulation was found to be an integrated construct that affects EFL students' writing proficiency.

Nabizadeh, Hajian, Sheikhan, and Rafiei (2019) conducted a descriptive-analytic study on 380 students of medical sciences of Shahid Beheshti University of Tehran. A questionnaire of motivational strategies and student outcome expectation scale were utilized for data collection. Students' college grade point average (CGPA) represented students' academic performance. Structural Equation Modeling (SEM) in AMOS software was used to analyze data. The results of the structure of learning strategies, motivational strategies, outcome expectations, and students' GPA did not show significant statistical differences in terms of gender, marital status, residence location, the field of study, and educational level. However, a significant relationship was discovered between the motivational strategies' structures ($R = 0.193, p < 0.001$), learning strategies

($R = 0.243, p < 0.001$), and CGPA. No relationship was detected between outcome expectations and CGPA. Path analysis showed that SRL strategies and motivational strategies can successfully predict the academic performance of students.

Statement of the Problem

Despite the emphasis on teaching academic writing skills to Saudi undergraduate EFL students, they still encounter many challenges (Ali, 2016). Although self-regulated strategies have become an area of interest within writing research, the investigation of the predictive influencers of teaching specific self-regulation strategies in EFL writing classes to upgrade students' writing skills is still scarce. The researcher administered surveys and interviews with 21 undergraduate EFL students at Northern Border University in Saudi Arabia to explore their awareness of the self-regulated strategies. The results of this preliminary investigation were enlightening to the researcher in the present study. Findings showed that those students tended to adopt fewer SRL strategies and had negative attitudes towards writing classes. They showed a weak understanding of the importance of SRL in EFL contexts and reported that teachers rarely train them on these strategies to cognitively, behaviorally, and emotionally promote their learning.

Study Questions

1. What are the differences between high- achievers and low-achievers in the use of self-regulated writing strategies?
2. To what extent do self-regulated writing strategies predict writing performance for Saudi undergraduate EFL students?

Study Aims

The present study builds on the findings of the literature by filling in the lacunae in research concerning SRL in writing. It highlights two areas of investigation: (1) to identify if self-regulated writing strategies can be a predictor of writing performance of Saudi university EFL students and (2) to determine how the use of SRL strategies

may vary according to EFL students' performance level.

Significance

Research related to self-regulation writing strategies is very limited at the tertiary level, in general, and in the Saudi EFL context, in particular. Very few attempts have been made to predict the writing performance of EFL students based on their use of SRL strategies. The present study contributes to this area of literature and provides authors with indicators and suggestions to pursue research in SRL in EFL contexts. Teachers can also be familiar with ways to facilitate the development of writing based on the use of SRL in writing. The study can provide information for curriculum designers and decision-makers to consider integrating SRL in writing and other language skills.

Study Limitations

The study was limited to self-regulated writing strategies (cognitive, metacognitive, social-behavioral, and motivational). It was conducted in the second semester of the academic year 2019/2020. The participants were EFL sophomores and juniors studying at the Department of English and Translation, Faculty of Education and Arts, Northern Borders University, Kingdom of Saudi Arabia.

Methods

Study Design

A descriptive-analytical research design was utilized to achieve the purpose of this study. The first feature is the use of a single group of participants (i.e., a one-group design). All participants were given the same treatments and assessments. The WSSRLQ and the writing test were administered to all participants. The researcher applied a multiple regression analysis to answer the first question and it was performed to examine the predictive effects of self-regulated strategies on writing performance. As for the second question about the relationship between writing performance level and the use of self-regulated writing strategies, the researcher used T-test.

Population

The population covered EFL students of the academic year 2019/2020, second semester in second and third year at the department of English and translation, the College of Education and Arts, at Northern Border University, Kingdom of Saudi Arabia.

Sampling

The sample consisted of 202 students: 148 females (73%) and 54 males (27%). Their ages ranged between 19 and 23 years. They were all Saudi students at the Department of English and Translation, the College of Education and Arts at Northern Borders University. They were three intact classes who were attending the second and third years of their study. All participants had studied a minimum of two writing courses. They had not received any explicit training in self-regulated writing strategies. All students in the second and third years with a grade C+ and above in writing courses were exclusively selected to take part in this study.

Study Instrumentation

Measure of Self-Regulated Writing Strategies

The present study adopted the WSSRLQ developed by Teng and Zhang (2016). The questionnaire has 40 writing strategy items under nine categories. It was designed to measure EFL students' writing strategies, especially the reported use of strategies. It contains writing strategy measurement methods concerning the cognitive, metacognitive, social-behavioral, and motivational regulatory factors. The cognitive category has two subcategories: Text Processing (TP) and Course Memory (CM), which probe into the surface use of cognitive knowledge. The metacognitive category involves two subcategories: Idea Planning (IP) and Goal-Oriented Monitoring and Evaluating (GME), which probe into specific idea-generating behavior before writing and an arsenal of strategies such as setting up goals to direct writing activities. The social-behavioral category has two subcategories: Feedback Handling (FH) and Peer Learning (PL) that include the collabora-

tion or interaction with peers in the learning to write process and students' attitudes towards the teacher and peer feedback. The last category was motivational regulatory, which consists of three subcategories: Interest Enhancement (IE), Motivational Self-Talk (MST), and Emotional Control (EM). These three subcategories are the procedures or thoughts that students apply purposefully to sustain or increase their willingness to engage in a writing task.

Reliability of the WSSRLQ

The internal reliability of the original questionnaire for the nine SRL scales was examined by Teng and Zhang (2016) using scale reliability tests (Cronbach's alpha). Table (1) illustrates that Cronbach's alpha coefficient of the nine scales was higher than the benchmark value .70, indicating high internal reliability of each scale.

Table 1
Means, standard deviations, and internal reliabilities of the 9 factors

Cognition	TP (6 items)	4.67	1.50	.80
	CM (3item)	4.47	1.12	.76
Metacognition	IP (3item)	4.61	0.91	.73
	GME (6 items)	3.76	1.26	.86
Social Behaviour	PL (3item)	3.60	1.11	.80
	FH (4 items)	5.61	1.17	.79
Motivational Regulation	IE (4 items)	4.61	1.02	.84
	MST (8 items)	4.97	1.43	.87
	EC (3 items)	5.17	1.33	.75

Note: TP= Text Processing; GM= Course memory; IP= Ideal planning; GME= Goal oriented Monitoring and Evaluation; PL= Peer learning; FH= Feedback Handling; IE= International Enhancement; MST= Motivational Self Talk; EC= Emotional Control.

Source: Teng and Zhang (2016, p. 16) show the means, standard deviations, and internal reliabilities of the 9 factors.

The questionnaire was translated into Arabic so that it is more comprehensible to the participants. To examine the validity of the translated questionnaire, a panel of EFL specialists reviewed the tool and provided suggestions for the modifications. The translated version of the WSSRLQ was piloted to a group of 25 students other than those taking part in the present study. Students had difficulty understanding some points. Thus, the researcher rephrased 16 items in the WSSRLQ. Addi-

tionally, a 7-point Likert scale (1=not at all true of me, 7=very true of me) was used to explore the features of self-regulated writing strategies. Scale reliability tests showed that Cronbach's alpha coefficient of each of the nine strategies ranged from .78 to .86, and was 0.87 for the overall score. The completion of the questionnaire took approximately 20 minutes per student.

Writing Performance Test

The participants were asked to write a 150 word argumentative essay about a topic entitled "homework assignment is crucial for enhancing learning and teachers should use it regularly." Students were given 45 minutes to complete this test. The essays were assessed based on the marking scheme with the following components: Content, organization, cohesion, word choice, and grammatical accuracy. The essay is scored out of 100 points. To ensure the reliability of scoring of the writing test, three evaluators, i.e. the researcher and two teachers who were not teaching the participants, graded the tests. The results showed a high inter-evaluators correlation between the first and second evaluators (0.88). The inter-evaluator correlation between the first and third evaluators was (0.91), whereas the inter-evaluator correlation between the second and third evaluators was (0.93). The writing test inter-evaluator reliability was statistically significant (0.92) at 0.01. The Cronbach's alpha for the test was (0.82).

Procedures

The questionnaire and writing test were administered in a paper-and-pencil format to the participants in a single session over three consecutive days (90 participants in day 1, 50 in day 2 and 62 in day 3). This test was conducted after obtaining the written consent letters from the participants to participate in this study. The evaluators spent one week for marking the writing tests. The participants were not asked to write their number or the name on the questionnaires and the test but they were assigned codes to facilitate data analysis to maintain and ensure confidentiality.

Results

The collected data were analyzed statistically. The results are presented in light of the research questions.

The first question: What are the differences between high- achievers and low-achievers in the use of self-regulated writing strategies?

To address the first question, a T-test was done to investigate the differences in writing SRL strategies among students with two different performance levels (high and low achievers) in writing performance. High and low achievers were classified based on their results on previous writing courses; the first and second year. Table 2 presents the results of the T-tests.

The results indicated a significant difference in TP (Text Processing) between the

high and low achievers in favor of high achievers ($t = -3.338; p < 0.001$). The results also indicated that there was a significant difference in FH (Feedback Handling) between high and low achievers in favor of high achievers ($t = -2.392; p < 0.001$).

The second question: To what extent do self-regulated writing strategies predict writing performance for Saudi undergraduate EFL students?

Table 3 illustrates the results for the inter-correlation coefficients among the nine subconstructs of the SRL writing measure. To address the second question, a multiple regression analysis was performed to investigate the predictive effects of self-regulated strategies on writing performance. Table 4 presents the results of the multiple regression analysis.

Table 2
T-test results for the differences between high and low achievers in the WSRLS

Variables	Groups	n	Mean	St. Deviation	T
TP	Low achievers	96	35.04	5.47	3.338***
	High achievers	59	37.68	3.34	
CM	Low achievers	96	17.32	2.87	1.193
	High achievers	59	17.85	2.27	
IP	Low achievers	96	17.64	2.79	1.022
	High achievers	59	18.07	2.12	
GME	Low achievers	96	34.49	6.03	1.213
	High achievers	59	35.58	4.22	
PL	Low achievers	96	15.99	3.90	0.492
	High achievers	59	16.31	3.83	
FH	Low achievers	96	22.96	4.79	2.392***
	High achievers	59	24.64	3.22	
IE	Low achievers	96	23.26	4.67	1.017
	High achievers	59	23.98	3.61	
MST	Low achievers	96	48.01	6.49	0.241
	High achievers	59	48.25	5.48	
EC	Low achievers	96	17.70	2.97	0.425
	High achievers	59	17.90	2.64	

*** = $p < 0.001$

Table 3
Intercorrelation matrix of the writing strategies for the SRL questionnaire's parameters

Strategies	TP	CM	IP	GME	PL	FH	IE	MST	EC
TP	1								
CM	0.60	1							
IP	0.67	0.68	1						
GME	0.63	0.72	0.68	1					
PL	0.42	0.53	0.44	0.59	1				
FH	0.63	0.49	0.51	0.62	0.59	1			
IE	0.56	0.58	0.58	0.70	0.56	0.63	1		
MST	0.47	0.50	0.48	0.65	0.47	0.53	0.61	1	
EC	0.32	0.39	0.38	0.56	0.39	0.48	0.52	0.69	1

Table 4
Results of the multiple regression analysis of writing performance

Predictors	B	T	R2	F
TP	0.544	3.662***	0.064	6.776***
CM	-0.686	-2.495***		
IP	-0.033	-0.313		
GME	-0.059	-0.551		
PL	-0.091	-1.112		
FH	0.119	1.331		
IE	0.024	0.270		
MST	0.07	0.852		
EC	0.016	0.206		

*** = $p < 0.001$

The nine strategies were entered as a single group in one step, which represents 6.4% of the variance in the students' writing performance [$F(9, 202) = 6.776, p < 0.001$]. Among these strategies, (CM Course Memory; $b = 0.686$) was the most significant predictor of writing performance, followed by (TP Text Processing; $b = 0.544$). IP, GME, PL, FH, IE, MST, and EM were not identified as significant predictors of university students' writing performance.

Discussion

Regarding the predicting ability of SRL strategies according to the writing performance of EFL students, the results indicated that both TP and CM (Text processing and Course Memory) strategies predicted the writing performance of college students. These strategies are sub-components of cognitive strategies. The researcher argues that students use these strategies to process information or knowledge in completing a task. As Oxford (2013) explained, cognitive strategies help learners construct, transform, and apply L2 knowledge. However, Teng and Zhang (2016) found different results. Their findings (sp) showed that CM strategies did not predict university EFL students' writing proficiency. These strategies are not enough to produce high-quality writing, as effective writing is a result of applying cognitive, metacognitive, social behavioral, and motivational regulation strategies to the writing process.

The present study proved that only the cognition dimension is embedded in TP. Participants reported better CM strategies, as they tended to memorize words and

expressions taught by teachers, which helps facilitate their writing. They also used TP strategies effectively. This result agrees with Teng and Huang (2018) who found that secondary school students indicated that CM strategies were effective in promoting their writing.

The TP strategies include the use of literary devices to make the composition more interesting, checking for correct grammar mistakes, spelling, and punctuation, checking the structure for logical coherence, checking the cohesiveness or connection between sentences, and checking whether the topic and the content have been clearly expressed. This finding is consistent with the results obtained by Olivares-Cuhat (2002) who found that the use of memory strategy highly correlated with students' writing achievement. It also agrees with Taheri, Sadighi, Bagheri, and Bavali (2020) who found that writing highly correlated with compensation and memory strategies. However, it is inconsistent with the results of Chand (2014), Nasihah and Cahyono (2017), Setiyadi, Sukirlan, and Mahpul (2016) that revealed a significant relationship between writing and metacognitive and cognitive strategies.

The results of this study suggested that TP and CM strategies interpreted 6.4% of the total variance in writing performance. This low percentage of variation may be attributed to other factors that contribute to the writing performance, such as metacognitive and emotional regulation strategies. This result contradicted the findings of Teng and Huang (2018) that found that each sub-construct was high (.61-.83).

Regarding the differences between high and low achievers in terms of writing performance in writing SRL strategies, the results indicated that there were significant differences in TP and FH strategies. It is well-known that TP strategies are categorized under cognitive strategies, and FH strategies are categorized under social behavior strategies. The author attributed the significant differences in cognitive strategy utilization to the fact that high achievers tend to rely significantly on their

cognitive and reasoning abilities, which are usually higher than that of the low-achievers.

On the other contrary (either you say On the other hand, or on the contrary), the differences in social behavior strategy utilization may be attributed to the tendency of the high-achievers to receive interactive support from their teachers and peers, which enhances their active learning skills motivation (Schunk & Rice, 1986). When high-achievers are faced with a complex task, they often seek help from others who are knowledgeable, such as their peers, family, and teachers, or consult written resources (Zimmerman & Risemberg, 1997). This result supported the findings of Kizilcec et al. (2017) and Teng and Huang (2018). These studies reported that individual differences including proficiency level could predict self-regulated writing strategies.

This finding is inconsistent with the results obtained by Rustam, Hamra, and Weda (2015) that reported metacognitive and compensation strategies to be most often employed by high-achievers. It also contradicts the results of Taheri et al. (2020) and Dhanapala (2006) that argued that low-achievers make more use of social strategies more frequently. Similarly, the results are inconsistent with Erdogan (2018) that indicated the high-achievers do not differ significantly from low-achievers in terms of affective and social strategies. They disagree with the findings of Al-Alwan (2008) that showed no significant differences in the components of PL and help-seeking between high and low achievers.

Conclusion (Be consistent in the position of headings and follow the format suggested by the journal)

The main concern of this study was to explore the predictive effect of self-regulated writing strategies on students' writing performance and compare the differences between high and low writing achievers in SRLs. The results indicated that both TP and CM strategies predicted the writing performance of EFL university students. Regarding the differences between high and low achievers in terms of writing per-

formance in writing SRL strategies, the results indicated that there were significant differences in TP and FH strategies in favor of the high writing performance level. The study also found that only the cognition dimension was embedded in TP.

Pedagogical implications and recommendations

The present study provides several noteworthy practical implications. First, the predictive results of some self-regulated writing strategies highlight the importance of teaching using these strategies to university EFL students. Due to the low percentage of cognitive strategies in predicting writing performance, teachers should focus on metacognitive, social-behavioral, and emotional regulation as vital resources for enhancing writing performance among undergraduate students. Second, scaffolded assistance and feedback from more capable sources through student-oriented interactions with the learning setting, peers, or teachers must be provided in university EFL contexts. Third, the higher-order model of the SRL can be utilized by all language teachers to raise the awareness of EFL students and identify their preferences in SRL concerning the writing skill.

Follow-up studies should explore methods to meet the needs of EFL university students concerning self-regulated writing strategies. More studies are required to explore learners' characteristics and the interaction of these factors that might influence and predict their writing performance. Researchers need to investigate the inter-relationship between SRL strategies, language skills, and self-efficacy. Future studies should investigate the predictive effect of other SRL subscales on EFL learners' progress in language skills.

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