Exploring Metacognitive Strategies Employed by ESL Writers: Uses and Awareness

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Abstract

The present study explored metacognitive strategies employed by English as second language (ESL) writers. The study also investigated students' awareness of the effectiveness of these strategies and the relationship between students' language proficiency levels and the frequent uses of metacognitive strategies. The data was collected via a questionnaire completed by non-native English speaker students (23 males, 38 females) at a midwestern university in the United States. The findings indicated that students frequently employed the three components of metacognitive strategies (i.e., monitoring, planning, evaluating; where evaluating was the most frequent strategy, followed by monitoring and planning). Moreover, the results indicated that students had a relatively high awareness of the effectiveness of the strategies discussed in the study which consequently affected students' uses of these strategies during a writing task, such as essays. Among the students, there was a positive correlation between students' proficiency levels and the frequency of the use of strategies. The study suggested several pedagogical implications including the need for increasing students' as well as teachers' awareness of metacognitive strategies in teaching and learning academic writing.

Keywords: academic writing, cognitive knowledge, ESL students, metacognitive strategy, strategic knowledge

1. Introduction

Writing plays important roles in academic success; especially, writing in a second language (L2) which is considered highly complex. L2 writing involves multiple interactions at different levels (i.e. cognitive, affective, social, and metacognitive). L2 writing also involves interactions between internal factors (e.g., first language (L1) writing abilities) and external factors (e.g., guidance of writing tasks, audience) (Hyland, 2003; Wang & Han, 2017). One of the concerns being discussed by educators and researchers is what makes successful students differ from unsuccessful ones. According to Devine (1993), a successful learner is "one who has ample metacognitive knowledge about the self as learner, about the nature of the cognitive task at hand, and about appropriate strategies for achieving cognitive goals" (p.109). Several studies have been conducted to examine the function of learning strategies in ESL/EFL learners' performance of receptive English skills (i.e. reading and listening) (e.g. Alhaisoni, 2017; Sheorey & Mokhtari, 2001). It has been found that the learners' awareness and strategic knowledge about learning play a critical role in those activities (Zhang, 2010).

In the recent decades, among language learning strategies, writing strategies have been one of the major interesting research subjects in the field of applied linguistics (De Silva, 2015; Rahimi & Karbalaei, 2016). Language learning strategies, in general, refer to "behaviors or actions which learners use to make language learning more successful, self-directed, and enjoyable" (Oxford, 1989, p. 235). In specific, writing strategies refer to "the sequence in which a writer engages in planning, composing, revising and other writing related activities" (Torrance, Thomas, & Robinson, 2000, p. 182). To classify language learning strategies, several taxonomies have been developed such as Oxford's (1990) taxonomy for foreign language learning, O'Malley and Chamot's (1990) taxonomy for second language learning, and Wenden's (1990) taxonomy for metacognitive strategies.

2. Literature Review

The following section provides the definition of metacognitive strategies as well as review of literature conducted in various contexts.

2.1 Metacognitive Strategies

The notion of metacognition was first proposed by Flavell (1979). The term generally refers to the process or activity in which one controls and monitors his/her cognitive process. Specifically, metacognitive strategies are the process of thinking about one's own thinking (Flavell, 1979). Flavell (1979) further developed two domains to classify metacognition: metacognitive knowledge and metacognitive regulation. The former consists of knowledge or beliefs that affect one's cognitive process. Flavell also identifies three major categories of metacognitive knowledge: person, strategy, and task. These categories play a vital role in various cognitive activities processing related to language use such as reading comprehension and writing tasks. Metacognitive regulation includes "any conscious cognitive or affective experiences that accompany and pertain to any intellectual enterprise" (p. 906).

Similarly, Wenden (1998) provided a comprehensive definition of metacognitive knowledge as "a prerequisite for the self-regulation of learning: it informs planning decisions taken at the outset of learning and the monitoring processes that regulate the completion of a learning task" (p. 328). The three main categories of metacognitive strategies are: planning (i.e., regulatory skills), monitoring (or cognitive control), and self-evaluation (or self-regulation and self-direction) (Wenden, 1991). The first category, i.e., planning, includes aspects related to how to prepare and to go on through the task. Monitoring deals with measuring learning process and identifying difficulties that interfere with the process. Lastly, self-evaluation refers to self-assessment after completing the task (Flavell, 1979; Wenden, 1998).

Moreover, O'Malley, Chamot, Stewner−Manzanares, Russo, and Küpper (1985) stated that "metacognitive strategies involve thinking about the learning process, planning for learning, and self-evaluation after the learning activity has been completed" (p. 560). Strategic knowledge, a component of metacognitive knowledge domain proposed by Flavell (1979), refers to "knowledge about both cognitive and metacognitive strategies, as well as conditional knowledge about when and where it is appropriate to use such strategies" (Livingston, 2003, p. 3). In a nutshell, metacognition involves several interactive and recursive stages starting from building knowledge of cognition followed by a procedural experience to self-regulate (i.e., planning, monitoring, evaluating) cognitive activities (Tsai, 2009).

2.2 Previous Studies on Metacognitive Writing Strategies

It is evident in the literature that strong metacognitive knowledge is critical to successful learning (e.g., Baker & Brown, 1984; Devine, 1993; Flavell, 1979; Kasper, 1997; Knospe, 2018; Raoofi, Chan, Mukundan, & Rashid, 2014). Several research studies have been conducted to investigate L2 students' writing strategies in different contexts. Most of these studies were conducted in the EFL context (Dülger, 2011; Khaki & Hessamy, 2013; Lu & Liu, 2011; Lv & Chen, 2010; Razı, 2011; Ruan, 2014; Victori, 1999; Zhang, 2010), whereas only a few studies focused on the ESL context (Kasper, 1997; Peñuelas, 2012; Wenden, 1991). One might argue that there is no difference between EFL and ESL contexts. However, the fact is that ESL and EFL contexts are different from each other, where studying a second language in an ESL context has a positive effect on learning L2 language (Freed, 1990; Longcope, 2010; Spada, 1986; Tonkyn, 1996). The ESL context provides a kind of superiority over the EFL one when it comes to the four language skills (i.e. listening, speaking, reading, writing) because of the direct exposure to native speakers in the ESL community and environment.

In recent years, the vast majority of the studies about metacognitive strategies have been conducted in different geographical and pedagogical contexts. In China, recently, Wang and Han (2017) examined metacognitive knowledge and metacognitive control of writing strategy among 62 Chinese students when writing argumentative tasks in English. The authors found that metacognitive knowledge was similar between high- and low-performing EFL students. However, high-performing students applied more cognitive and metacognitive strategies (especially planning and evaluating) on the writing task. Lu and Liu (2011) investigated metacognitive strategies employed by English language students. The result revealed that self-monitoring was the most effective strategy used by successful students, followed by self-evaluation, and finally the frequency of advanced planning. The results also pointed out that successful and unsuccessful students were different in terms of using metacognitive strategies.

As for metacognitive strategic knowledge, Ruan's (2014) study showed that the participants had weak self-awareness as well as metacognitive strategic knowledge which consequently affected the frequent uses of these strategies. Similarly, Zhang (2010) analyzed data collected through questionnaire and written prompts from 120 Chinese students who took English classes from various disciplines. The results revealed that students' metacognitive strategic knowledge was very poor and correlated with their writing performance. Lv and Chen's (2010) study pointed out that students who did not receive metacognitive strategies instruction did not employ

any metacognitive strategies. In Iran, Pitenoee, Modaberi, and Ardestani (2017) investigated the effectiveness of cognitive and metacognitive strategies on the content of the Iranian learners' writing after writing strategies instruction given to students over a semester. The intervention provided evidence that both types of strategies helped develop the content and quality of students' writing.

In a European context, in Turkey, the role of using metacognitive strategies in developing EFL writing was discussed by Dülger (2011). After receiving instruction on metacognitive strategies, students' writing abilities in the experimental group were developed especially in content, texts organization, vocabulary choices, and mechanics through employing various metacognitive strategies. In contrast, Khaki and Hessamy (2013) investigated the effect of metacognitive strategies in writing two tasks (i.e., reading-to-write and a writing-only test task), and the results showed no difference in using these strategies in the two tasks. At the University of North Cyprus, Razı (2011) found out that about half of the participants reported using few planning and evaluating strategies, even though these strategies were explained to all students in the classroom. The study also indicated that the students had weak self-awareness about metacognitive strategies. In Spain, Victori (1999) found out that skilled writers, who had a higher metacognitive knowledge, employed different metacognitive strategies (i.e. planning, organizing, evaluating, and resourcing) more than less-skilled ones did.

Finally, in the United States, Wenden's (1991; 1998) investigations were among the earliest studies that explored the roles and uses of metacognitive knowledge in order to performing a writing task. Wenden (1998) provided a list of characteristics to define metacognitive knowledge as: "(1) a part of a learner's store of acquired knowledge; (2) relatively stable and statable; (3) early developing; (4) a system of related ideas; and (5) an abstract representation of a learner's experience" (p. 517). Furthermore, Kasper (1997) assessed the uses and growth of students' metacognitive knowledge and its components (i.e. person, task, strategy), and he found that there was a correlation between metacognitive strategic knowledge and linguistic proficiency level. Peñuelas (2012) investigated the self-reported strategy use of 231 American students in their writing tasks. The results indicated that proficient and less proficient students use a wide variety of metacognitive strategies.

Generally speaking, it is worth noting that the research conducted on the relationship between metacognitive strategies and ESL/EFL writing is still scarce. That is to say, Raoofi et al. (2014) carried out a comprehensive review of all published qualitative and quantitative primary research on metacognition in scholarly journals between 1999 and 2012. Their analysis found that reading and listening skills were the most researched on metacognition, whereas "relatively little research has dealt with the role of metacognition in the development of speaking and writing skills" (p. 45). In addition, the literature has discussed the frequent uses of metacognitive strategies in relation to task knowledge. Even though a few studies have focused on the roles of metacognitive strategies in developing writing skills, these studies did not identify which strategies were employed by the participants.

While the majority of the research on metacognitive strategies have been conducted in EFL contexts, such studies have been scarce in the ESL context. Therefore, the present study explored metacognitive strategies employed by ESL students in the ESL context when they write a task such as essays, without a given or prepared instruction. Also, the study aimed at describing students' metacognitive strategic knowledge and awareness of the effectiveness of these strategies. The research questions are as follows:

1) What are the metacognitive strategies ESL writers employ according to their self-report?

2) What are ESL writers' perceptions of the effectiveness of these strategies?

3) Is there any relationship between self-reported writing proficiency levels and self-reported metacognitive strategies?

3. Method

3.1 Participants

The participants in the study were 61 undergraduate ESL international students (23 males and 38 females), who completed the questionnaire out of the total population (about 110 students). The students were at the beginning of their second semester at a midwestern university in the United States, majoring in different disciplines. The subjects ranged in ages from 18 to 23 years old. After studying *Composition (1)* course in the first semester, the students enrolled in *Composition (2)* course. The students' proficiency levels were moderate, ranging from low-intermediate to high proficiency. Their native languages varied: Chinese (70.5%), Korean (8%), Arabic (6%), Spanish (3%), and other languages (8%) including Indian, Portuguese, German, and African languages. Table 1 shows the demographic characteristics of the participants.

Table 1. The demographic characteristics of the participants

Demographic Information		Frequency	%	Total Responses
Gender	Male	23	37.7	61
	Female	38	62.3	
Class	Freshman	8	13.3	60
	Sophomore	21	35.0	
	Junior	29	48.3	
	Senior	2	3.3	
Composition 1 Grades	A	40	70.2	57
	B	14	24.6	
	C	3	5.3	
IELTS TOT	Mean=6.05 SD=.1508			11
IELTS WR	Mean=5.85 SD=.4116			10
TOEFL TOT	Mean=81.35 SD=13.263			41
TOEFL WR	Mean=21.33 SD=3.916			28
Note: IELTS TOT= IELTS Total, IELTS WR=IELTS Writing, TOEFL TOT=Total, TOEFL WR=TOEFL Writing				

3.2 Instrument

The data for this study was collected through a questionnaire (see Appendix) designed to explore ESL students' writing strategies. The questionnaire consisted of two sections: the first section addressed various writing strategies that students use while doing a writing task. The second section was designed to elicit some demographic information, such as gender, age, and language proficiency.

The questionnaire items were selected from the existing literature on writing strategies (e.g., Razi, 2011), and then rewritten and revised by the author. There were 33 items involving 7 cognitive strategies and 26 metacognitive strategies (i.e., 8 planning, 11 evaluating, 2 monitoring strategies, and 5 self-awareness) in relation to writing skills. Students were asked to rate each strategy in a Likert-type scale ranged from (1) *Never* to (5) *Always*. To prevent students' prediction, the questions were scrambled in the final form of the questionnaire. The questionnaire was piloted with two Ph.D. TESL students to ensure that it was well-constructed, unambiguous, and logically organized. In light of their feedback, some questionnaire items were revised and reworded for clarity.

In addition, the reliability of the questionnaire was measured by Cronbach's Alpha Coefficients. Obviously, the questionnaire had a high level of internal consistency as measured by Cronbach's Alpha (α= .914). Following this, the questionnaire was administered at the end of individual class periods by classroom instructors. All responses remained anonymous and confidential.

3.3 Data Analysis

Descriptive statistical (i.e., means, standard deviations, frequencies, and percentages) procedures by using (SPSS) software were applied to analyze the obtained data. First, the analysis involved computing the participants' means and standard deviation of metacognitive strategies. Second, the same calculations were applied to ascertain students' self-awareness of the effectiveness of these strategies in students' writing abilities. Oxford's (1990) classification of means method was employed to analyze the results of the questionnaire. That is, 'low' mean scores were ranged between 1.0 and 2.4, 'medium' mean scores were ranged between 2.5 and 3.4, and lastly, 'high' mean scores were ranged between 3.5 and 5.0. Finally, the data was measured by the Pearson correlation coefficient to determine the relationship between students' proficiency levels and metacognitive strategies employed by students. The results and discussion are presented in the next section.

4. Results and Discussion

The results of the three research questions in the study are shown and discussed in the following subsections supported by tables. The mean of overall metacognitive strategy use was 3.62 out of 5.0, which may be considered as high strategy use according to Oxford (1990) classification of means method.

4.1 RQ 1: Metacognitive Strategies Reportedly Employed by ESL Writers

Table 2 shows the results of the first research question, which is designed to explore the students' reported preferences in employing metacognitive strategies. The results demonstrated that the mean scores of metacognitive strategies three components (i.e., planning, monitoring, evaluation) employed by the participants were almost equal. That is, the overall mean scores ranged from 3.58 to 3.66 on 5-point scale descending from

always "5" to *never* "1": planning (3.58), monitoring (3.66), and evaluating (3.65). Evaluating and monitoring strategies were frequently employed by students over planning strategies although the difference between evaluating and monitoring on the one hand and planning on the other was not high. Closer examination demonstrates that cognitive strategies predominated metacognitive ones. Statistically, the obtained Independent *t*-test score [$t(36)= .22$, p>.0063] showed that the difference was considered to be statistically significant. Altogether, according to Mayer (1998) and Torrance et al. (2000), metacognitive and cognitive strategies are highly important for successful writing and the quality of the learners' writing performance. The cognitive strategies refer to "intentional and goal-oriented process that individuals employ to use language to understand or learn for some purposes" (Phakiti, 2007, pp. 6-7).

Table 2. Overall Means of Cognitive and Metacognitive Strategies

Variables		N	Mean	*SD*
Cognitive		7	3.84	.23
Metacognitive	Planning	8	3.58	.32
	Monitoring	2	3.66	.06
	Evaluation	11	3.65	.12
	Overall	31	3.62	.17

In addition, Table 3 presents the most components of metacognitive strategies that students employ when they compose a writing task. The findings of the first research question indicated that students used metacognitive strategies relatively high as follows: monitoring (3.66), evaluating (3.65), planning (3.58). These findings are in line with the studies presented in literature. Lu and Liu's (2011) study reported that self-monitoring is the most effective factor in ESL writing, followed by self-evaluation, and finally the frequency of advanced planning. The reason behind this finding could be related to students' awareness of these strategies, as discussed in the second question below. The awareness of metacognitive strategies plays an important role in how frequently students employ these strategies. In addition, upon an informal talk while administering the questionnaire regarding whether these strategies were taught explicitly or implicitly, an instructor told me that these strategies were taught implicitly, and no special instruction about writing strategies was provided to students. Certainly, exploring students' writing strategies without given special explanation or instruction was one of the main objectives of the present study.

Table 3. Most components strategies used by students

Variables		N	Mean	*SD*
EVA	I revise the draft for content and clarity of the meaning.	60	4.00	.844
EVA	I try to make my essay interesting and easier to read for the reader.	61	4.03	.948
EVA	I am careful about the organization of the paragraphs.	61	3.98	.922
PLN	If I am in an exam, I read the instructions carefully before I start my essay.	61	4.18	.904
PLN	I list my ideas and use examples etc. to make the essay more meaningful.	61	3.84	.952
PLN	If I have given a few essay topics to choose from, I always do a quick brainstorming for all to see how much I know about each topic before I start writing the essay.	61	3.66	1.078
MON	As I write my essay/composition, I stop to check if my grammar and spelling are correct	61	3.70	.989
MON	I reflect upon the written paragraphs and revise accordingly throughout the writing process.	61	3.62	.897

Note. EVA; Evaluating, PLN: Planning, MON: Monitoring.

As can be seen in Table 3, a closer look at the most frequent strategies employed by students could indicate perhaps the types of learners. In fact, when employing cognitive and metacognitive strategies, writers need to reflect their own learning and writing styles and be concerned with the global aspects of writing (Oxford, 1991; Peñuelas, 2012). For example, planning strategies are the first step in the writing process. In the present study, students employed certain strategies to help them concentrate on how to prepare and accomplish the writing tasks. Such strategies encompass reading instructions before starting the writing tasks, brainstorming and writing down the ideas in order to make the writing task clearer and more meaningful (O'Malley & Chamot, 1990).

In the next step, when writers use the most frequent monitor strategies in the present study (i.e., *As I write my essay/composition, I stop to check if my grammar and spelling are correct*, and *I reflect upon the written paragraphs and revise accordingly throughout the writing process*), it indicates that the writers have the sense of concentrating on the quality of writing to avoid grammatical and other mistakes (Lu & Liu, 2010; Peñuelas, 2012; Wenden, 1991).

As far as the evaluation strategies, it seems that the writers focused more on revising the draft for content and clarity. That is, writers used self-assessment strategies to judge their writing whenever they had time to do so. This kind of judgement includes evaluating the organization of the paragraphs or essays in order to make them interesting and readable (Dülger, 2011). Self-assessment strategies could either occur during the writing process with monitoring strategies, or after finishing answering the writing tasks.

4.2 RQ 2: Students' Awareness of the Effectiveness of These Strategies

Table 4 presents the results of the second research question. the results revealed that students' awareness of these strategies was relatively high (*m*=3.56). These results illustrated why students employed metacognitive strategies. In other words, if the students were not aware of how metacognitive strategies could play to improve their writing abilities, the students would not efficiently have known how and when to employ these strategies. Moreover, it is apparent from Table 3 that the students were aware of their strengths and weaknesses along with how to use strategies when performing writing tasks. According to Pintrich (2002), students who are aware of several types of learning strategies, such as metacognitive, are more likely to use them.

Pintrich, however, warns that the awareness of strategic knowledge does not necessarily result in strategy use. That is, in Razı's (2011) study, less than half of the participants reported employing and having self-awareness of metacognitive strategies. Furthermore, Ruan (2014) stated that strategy awareness of planning, text generating, and revising were found typical of novice EFL student writers which consequently affected the employment of these strategies when students write a task, such as essays. Similarly, Zhang's (2010) results demonstrated that "the learners' strategic knowledge is the poorest among the three components of metacognitive knowledge" (p. 39), which means that students are not able to use metacognitive strategies while writing. It can be concluded that when students' self-awareness of cognitive and metacognitive strategies is high, the students can select and employ the most appropriate strategies in writing tasks (Chamot & Kupper, 1989; O'Malley & Chamot, 1990; Victori, 1999).

Table 4. Students' awareness of metacognitive strategies

Variables	N	Mean	SD
I know about my strengths and weaknesses in writing.	61	3.72	1.142
I am aware of what strategies, like brainstorming, planning, editing etc. I use when I write an essay.	61	3.54	.886
I find myself using helpful strategies, like brainstorming, planning, editing etc., automatically.	61	3.49	1.027
I am aware of the effectiveness of the strategies I use, like brainstorming, planning, editing etc.	61	3.46	1.010
I monitor myself throughout the writing process.	60	3.60	.942
Overall Mean	61	3.56	.70

4.3 RQ 3: Relationship Between Self-Reported Writing Proficiency Levels and Metacognitive Strategies

Table 5 presents the results obtained to answer the third research question: this question investigated the relationship between students' writing proficiency levels and the frequent uses of metacognitive strategies. To examine the relationship, a Pearson correlation coefficient was calculated. The result showed a strong positive correlation (*r* = .53; p<.01), showing a significant linear relationship between the two variables.

Table 5. Pearson correlation for relationship between language proficiency and metacognitive strategies

		Language Proficiency	Metacognitive Strategies (MEAN)
Language Proficiency	Pearson Correlation	1	.529[**]
	Sig. (2-tailed)		.000
	N	61	61
Metacognitive Strategies (MEAN)	Pearson Correlation	.529[**]	1
	Sig. (2-tailed)	.000	
	N	61	61

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

The results indicated that there was a strong correlation between students' language proficiency levels and metacognitive strategies. That is, the students whose self-reported English proficiency was higher used metacognitive strategies more frequently than those who considered their English proficiency to be lower. This result is in consistence with previous studies in EFL context (Lai, 2009; Lu & Liu, 2010; Phakiti, 2003; Raoofi1 et al., 2014; Razi, 2014) and with undergraduate native English speaker students (Peñuelas, 2012). For example, Lu and Liu's (2011) results revealed that there were significant statistical differences between successful and less successful learners in their employment of metacognitive strategies. Moreover, there was a correlation between the success rate (students' grades) and frequency of use as well as awareness of metacognitive strategy (Razi, 2014). Peñuelas (2012) further confirmed that as the English language proficiency, especially writing skills, increases, writers employ more strategies.

Consistent with findings by Pitenoee et al. (2017) and Zhang (2010), the findings indicated that the possession of higher level skills such as thinking, planning, monitoring, and evaluating leads to more effective employment of metacognitive strategies. This evidence is clearly seen when we observe students' grades in Composition 1 course. As shown in Table 1, almost 70% of students received (A) in the previous academic writing course, followed by 24% students who gained (B). The result could be related to students' self-effort to improve their writing abilities through increasing their awareness of strategic knowledge. Successful students perhaps spend sometimes to learn different techniques and strategies that could contribute to their academic success.

5. Conclusion

The main purpose of the study was to investigate metacognitive strategies employed by ESL students when they write a task, such as essays. In addition, it investigated students' awareness of these strategies. The findings indicated that students' use of metacognitive strategies while they compose essays was high. Moreover, the findings revealed a significant correlation between students' proficiency level and their uses of metacognitive strategies. The study contributed to the literature of metacognitive knowledge by deepening our understanding of ESL student writers. The study showed that the ESL students, without a prior instruction, could possess and employ cognitive and metacognitive strategies related to academic writing.

The present study suggested several pedagogical implications. First, since this study was an exploratory in nature, it showed a need for increasing students' awareness of metacognitive strategies when students write a task. In other words, equipping L2 learners with techniques on how to employ writing strategies allows these learners to become more autonomous and then improve their learning and writing (Bloom, 2008). As mentioned earlier, students' uses of metacognitive strategies were affected by moderate awareness of these strategies. Second, teachers have to spend much time explaining the effectiveness of these strategies in improving students' writing levels. Teachers also need to teach students explicitly the most effective writing strategies in order to help them in their academic success. Lastly, teachers have to help less proficient students to improve their writing abilities through writing strategies.

This study had some limitations. Due to the sample size, the results of the study cannot be generalized to the wider population. Also, the study explored the uses of metacognitive strategies without a given instruction about these strategies in the ESL context. Other studies are worthwhile to further investigate the uses of these strategies before and after a given instruction, and by using different instruments, such as interviewing and observing both students and teachers.

Acknowledgments

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