INVESTIGATING COLLEGE STUDENTS' METACOGNITIVE AWARENESS IN ENHANCING ESP WRITING PROFICIENCY

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Abstract. *This study investigated levels of metacognitive awareness among Saudi Arabian applied college students, focusing on the impact of gender and academic majors on their writing skills. A total of 90 participants from Information Technology (IT) and Supply Chain Management majors were recruited, and data were collected through the Metacognitive Awareness of Writing Questionnaire (MAWQ). Results showed that participants had a moderate level of knowledge of cognition related to writing skills and a relatively high degree of regulation of cognition when it came to writing. Female students demonstrated higher metacognitive awareness than males, and IT students had higher mean scores on both "knowledge of cognition" and "regulation of cognition" than Supply Chain Management students. These findings have implications for educators and policymakers seeking to promote academic success and metacognitive awareness among college students, especially in terms of developing targeted interventions to improve writing skills.*

Keywords: metacognitive awareness, writing skills, ESP writing, applied college students, Saudi Arabia.

1. INTRODUCTION

Writing is crucial for academic and professional success, but it can be challenging, especially for non-native speakers of the language of instruction. This is particularly true in English for Specific Purposes (ESP) courses, where students must write for specific purposes and audiences, such as drafting professional emails or reports for their future careers. Integrating metacognitive strategy instruction can enhance writing instruction by promoting conscious control and regulation of cognitive processes, such as planning, monitoring, and evaluating one's own learning. This approach can help students gain insight into their own writing processes and identify areas for improvement, ultimately resulting in more effective writing (Chamot, 2005; Liu et al., 2022; Utkina, 2022). However, research on the application of metacognitive knowledge and strategies in EFL writing for Saudi Arabian students is limited (Basaffar & Bukhari, 2023).

Although many studies have examined the application of metacognitive techniques in teaching writing, there is a lack of research on the effectiveness of these strategies among applied college students in Saudi Arabia, as noted by Wu (2022). Furthermore, it is necessary to investigate whether these students are knowledgeable about metacognitive strategies and how they evaluate the impact of such strategies on their writing abilities. To address this research gap, this study proposes to investigate the influence of metacognitive awareness on the writing competence of Saudi Arabian applied college students who are taking ESP courses, with a particular emphasis on composing professional emails.

This study aims to investigate the impact of metacognitive strategies in writing instruction on the writing proficiency of Saudi Arabian applied college students enrolled in ESP courses, specifically in composing professional emails. Through a comprehensive review of literature, detailed methodology, and discussion of implications, this research addresses a gap in previous studies regarding the limited attention given to learning strategies, particularly metacognitive strategies, in developing writing skills. The study's findings will provide valuable insights into the effectiveness of incorporating metacognitive strategies into writing instruction, ultimately contributing to the advancement of writing pedagogy.

1.1. The importance of the study

This study aims to investigate how metacognitive awareness affects writing skills among applied college students in Saudi Arabia, focusing on gender and academic majors, specifically Information Technology and Supply Chain Management. Unlike previous studies, this research provides more comprehensive insights into the effects of metacognitive strategies on male and female students. By addressing gaps in the literature, this study aims to develop interventions that promote metacognitive awareness and improve writing skills among applied college students in Saudi Arabia. The following research questions will guide this study:

R.Q.1: How does knowledge of cognition impact the writing skills among applied college students in Saudi Arabia?

R.Q.2: How does the regulation of cognition impact the writing skills among applied college students in Saudi Arabia?

R.Q.3: Are there any statistically significant differences among students based on their academic majors in levels of metacognitive awareness and its relation to writing skills?

R.Q.4: Are there gender differences in the levels of metacognitive awareness and writing performance among applied college students in Saudi Arabia?

1.2. Study Hypotheses

1. There is a significant difference in metacognitive awareness levels between female and male students.
2. There is a significant difference in mean scores of knowledge of cognition and regulation of cognition between IT and Supply Chain Management students.
3. The mean score for knowledge of cognition and regulation of cognition among the participants is significantly different from the neutral score of 3.0.

2. LITERATURE REVIEW

Metacognition is akin to being the captain of one's own ship, with the power to guide and regulate one's own cognitive processes. It involves deliberate management of one's learning through tasks such as planning, monitoring, and evaluating (Soto et al., 2022). It involves thinking about thinking, reflecting on knowledge (Jones et al., 2020; Hanten et al., 2004), and being aware of the steps and strategies used to solve a problem (Bezanilla et al., 2019). Additionally, metacognition encompasses an individual's knowledge of how and when to use certain strategies to complete a task and others (Hanten et al., 2004), as well as knowledge of how cognitive processes work and awareness of comprehension (Perkins, 1992).

Research links metacognition and writing, where regulating mental activities is crucial for using appropriate strategies to write. There are four phases in the writing process: orientation, organization, execution, and verification, as identified by scholars. Effective writing performance is greatly impacted by the utilization of writing strategies by learners. However, there has been limited discussion on metacognition-based writing strategies in EFL contexts. Recent years have seen a surge of interest in teaching metacognitive thinking to novice writers to enhance their writing skills. Previous studies have shown that group metacognitive support can benefit writing outcomes. (Gay, 2022; Sato, 2022; Teng, 2020a; Teng, 2020b; Teng & Yue, 2022).

Gender differences have been a topic of interest in various fields, including education. In the context of metacognitive awareness and writing performance, some researchers have explored potential differences that may exist between male and female students. According to some studies, gender differences in metacognitive awareness do exist. For example, Aydin & Ayranci (2018) found that female students demonstrated higher levels of metacognitive awareness than male students in their writing processes. Graham and Harris (2003) found that female students had higher metacognitive awareness scores than males. However, studies on gender differences in writing performance have yielded inconsistent results. Some studies show no significant differences between male and female students, while others suggest otherwise (Trapman et al., 2018). Additionally, some studies have shown that female students perform better in writing tasks than males (Abdelrahman, 2020; Aydin & Ayranci, 2018).

Inconsistent findings in previous studies on gender differences in writing may be due to variations in the specific writing tasks being assessed. Ozfidan and Mitchell (2020) found notable gender differences in argumentative writing, with males facing challenges in organizing and structuring their essays, integrating scholarly sources, composing counterclaim and refutation paragraphs, and establishing an appropriate academic style. Female students, on the other hand, struggled with developing a strong thesis statement, locating sufficient evidence, and ensuring the content and development of the essay. The study suggests that gender differences in writing performance may depend on the specific writing task being assessed.

The development of metacognitive strategies is essential in enhancing writing skills. Metacognition refers to the ability to consciously reflect on one's own thinking and learning processes and make informed decisions on how to approach a task. The use of metacognition in writing can aid in improving various writing aspects, such as planning, organizing, and revising. Several studies have explored the efficacy of teaching metacognitive strategies to enhance writing skills. Teng et al. (2022) conducted a recent

study to investigate the influence of metacognitive strategy-based writing training on students' writing skills. The experimental group that received the training showed a noteworthy improvement in their writing skills compared to the control group, which received standard writing instruction.

One of the most popular metacognitive strategies for writing improvement is the process approach, which involves breaking down the writing process into a series of steps and guiding students to reflect on their progress at each stage. The process approach has been found to be effective in improving students' writing skills in several studies (Alodwan & Ibnian, 2014; Sun & Zhang, 2022).

Self-regulated strategy development (SRSD) is another highly effective metacognitive strategy that can be used to enhance writing skills in students. The SRSD offers a structure that instructs students on how to prepare, keep track of, and assess their writing procedure, while also giving them techniques to conquer challenges they may encounter while writing. SRSD is based on providing students with clear guidance on using particular writing strategies, including brainstorming, outlining, and revising. This approach enhances students' awareness of their writing abilities and helps them regulate their thoughts and actions while writing, resulting in more confident and skilled writers (Collins et al., 2021; Sun, et al., 2022: Teng, 2022).

In addition to these specific strategies, several best practices have been identified for teaching metacognitive strategies for writing improvement. These include providing explicit instruction, modeling, scaffolding, and feedback. Teachers can also encourage metacognitive thinking by asking students to reflect on their writing processes, setting goals, and monitoring their progress (Askell-Williams et al., 2012; Zohar & Ben-Ari, 2022).

Using metacognitive strategy instruction in writing can be beneficial for English for Specific Purposes (ESP) courses. Metacognitive strategies can enhance writing proficiency by improving self-awareness of learning processes and developing cognitive skills. Technical or academic papers require strong writing skills and subject-specific knowledge, making metacognitive strategies helpful for planning, monitoring, and evaluating writing performance. This approach promotes independent learning, enabling students to identify strengths and weaknesses and overcome obstacles. Incorporating metacognitive strategy training in writing can effectively improve students' writing skills in ESP courses (Alhaqbani and Riazi, 2012; Chen, 2022; Cheng, 2021; Zohar & Ben-Ari, 2022).

3. METHOD

3.1. Participants

The participants of this study were 90 Saudi Arabian applied college students, 49 females, and 41 males, who are currently enrolled in English for Specific Purposes (ESP) course focused on professional email writing. They were in their third semester, which runs from September to December 2022. They were recruited using convenience sampling (Emerson, 2015). In other words, the participants were chosen because they were easily accessible and convenient to recruit.

3.2. Instrument

The Metacognitive Awareness Writing Questionnaire (MAWQ) was used in this study, developed through a literature review and previous research studies (Farahian, 2017; Ramadhanti & Yanda, 2021). The self-report instrument had two sections, knowledge of cognition and regulation of cognition, both containing 41 statements, to measure participants' metacognitive awareness related to writing skills. The knowledge of cognition section assessed understanding of writing processes and strategies, while the regulation of cognition section evaluated the ability to regulate writing processes and strategies. Participants completed the questionnaire to evaluate their metacognitive awareness and identify changes. Internal consistency was measured by examining the correlation between each scale dimension and the total score using a table.

Table 1 Correlation Analysis of Item Score, Dimension, and Total Score

Questionnaire's Dimensions							
Knowledge of cognition				Regulation of Cognition			
Item No	Correlation coefficient	Item No	Correlation coefficient	Item No	Correlation coefficient	Item No	Correlation coefficient
1	.834**	12	.838**	22	.836**	33	.787**
2	.863**	13	.834**	23	.821**	34	.799**
3	.856**	14	.837**	24	.879**	35	.812**
4	.872**	15	.876**	25	.823**	36	.859**
5	.827**	16	.842**	26	.847**	37	.841**
6	.834**	17	.827**	27	.811**	38	.853**
7	.837**	18	.873**	28	.767**	39	.879**
8	.872**	19	.867**	29	.783**	40	.776**
9	.881**	20	.868**	30	.829**		
10	.865**	21	.811**	31	.784**		
11	.793**			32	.872**		
Dimension correlation with the total score		.712**		Dimension correlation with the total score		.612**	

**. significant at the 0.01 level.

Table 1 shows significant correlation coefficients between items and total scores for dimensions and between total scores for dimensions and the scale, indicating acceptable internal consistency. Scale stability was assessed using methods including Cronbach's alpha coefficients, which were 0.992 for the first dimension and 0.827 for the second dimension, indicating an acceptable level of stability.

The split-half reliability was evaluated by dividing each sub-dimension into odd and even items and calculating the correlation coefficients between the two halves using the Spearman-Brown-Guttmann equation. The results are reported in Table 2.

Table 2 The values of the stability coefficient for each dimension of the scale

Dimensions	Number of Items	Spearman-Brown	Guttman Split-Half
Knowledge of Cognition	21	0.923	0.911
Regulation of Cognition	19	0.856	0.832

Table 2 presents the values of the stability coefficient for each dimension of the scale. The two dimensions are knowledge of cognition and regulation of cognition, which consist of 21 and 19 items, respectively. The stability coefficient was calculated using two methods: Spearman-Brown and Guttman Split-Half. For the dimension of knowledge of cognition, the stability coefficient was 0.923 for Spearman-Brown and 0.911 for Guttman Split-Half. For the dimension of regulation of cognition, the stability coefficient was 0.856 for Spearman-Brown and 0.832 for Guttman Split-Half. These coefficients indicate the degree of stability of each dimension of the scale, with higher values indicating greater stability.

Additionally, Test-Retest was used to calculate the reliability coefficient of the scale. The value of the reliability coefficient for the test-retest method was (0.763), indicating that the scale has an acceptable level of stability using the test-retest method, and is suitable for the application.

3.3. Data Analysis

To analyze the Metacognitive Awareness of Writing Questionnaire (MAWQ), this study will utilize a blend of descriptive and inferential statistical techniques. To gauge the dependability of the MAWQ, its reliability will be evaluated through two different methods: measuring its internal consistency using Cronbach's alpha coefficient, and test-retest reliability using the intraclass correlation coefficient (ICC). To investigate the associations between metacognitive awareness, writing skills, academic major, and gender, the study will utilize inferential statistical methods, such as the Pearson correlation coefficient and independent sample t-tests. The main data analysis tool will be SPSS, and a significance level of $p < .05$ will be considered significant. The findings of the study will be presented using an array of mediums such as tables, graphs, and narrative form to communicate the results of the analysis.

4. RESULTS OF THE STUDY

Question 1: How does knowledge of cognition affect the writing skills of applied college students in Saudi Arabia?

To answer this question, standard deviations, means, and the order of each item was calculated as follows:

Table 3 The means and standard deviations for the "Knowledge of Cognition" domain

	Items	Mean	Std. Devation	Order	Level
15	I know how to plan, develop, review, and evaluate my writing.	3.978	1.357	1	High
18	I know when to use effective writing strategies, starting from planning and developing ideas to evaluating writing.	3.867	1.424	2	High
19	I have discovered the most effective writing strategy.	3.789	1.434	3	High
7	I rarely make mistakes when writing, whether in the structure of the text or in grammar.	3.789	1.426	4	High
17	I know how to write articles, especially explanatory texts, with attention to grammatical rules and text structure.	3.778	1.497	5	High
22	I prepare a writing outline before generating ideas.	3.733	1.498	6	High
9	I prefer writing down my ideas instead of relying on random writing.	3.711	1.516	7	High
16	My childhood experiences have shaped my writing strategies	3.700	1.449	8	High
1	Writing is a tool for me to share my knowledge and experience.	3.700	1.369	9	High
10	I am familiar with different types of texts, including drama, poetry, commentary, news reporting, paraphrasing, realistic description, and fiction.	3.678	1.571	10	High
8	Proper vocabulary and grammar are essential components in effective writing.	3.644	1.425	11	moderate
20	. I know what to do when the strategies I use do not work.	3.589	1.476	12	moderate
21	I am aware of the most significant challenges I face in writing and the parts that require more attention than others. I am aware of the significant writing challenges and the areas that require more attention.	3.578	1.453	13	moderate
12	I excel in expressing coherent and grammatically correct sentences and paragraphs with appropriate vocabulary and logical organization.	3.578	1.506	14	moderate
14	I carefully begin each paragraph and expand it with explanatory sentences.	3.567	1.484	15	moderate
3	I believe that writing skills are developed through extensive practice in addition to talent.	3.556	1.500	16	moderate
5	A skilled writer should be familiar with writing strategies, from planning ideas to developing and revising them.	3.522	1.478	17	moderate
13	I can distinguish writing with or without coherent relationships.	3.511	1.486	18	moderate
4	I base my writing on my understanding of the subject matter for effective writing.	3.467	1.493	19	moderate
11	I understand that each text follows specific rules and structures.	3.456	1.508	20	moderate
6	Skilled writers aim to make the least number of errors in each stage of writing.	3.400	1.564	21	moderate
2	Writing is more challenging than listening, speaking, and reading because it requires critical thinking and analysis.	3.389	1.541	22	moderate
Total Degree (knowledge of cognition)		3.630	0.774	-----	moderate

Question 2: How does the regulation of cognition impact the writing skills among applied college students in Saudi Arabia?

To answer this question, standard deviations, means, and the ranking of each item are calculated as follows:

Table 4 Arithmetic means and standard deviations for the field of (regulation of cognition) N=90.

No.	Items	Mean	Std. Devation	Order	Level
13	I avoid using unfamiliar vocabulary and grammar.	4.022	1.349	1	High
2	Starting writing is a challenge for me.	3.878	1.305	2	High
8	I use my existing knowledge to develop my ideas.	3.878	1.421	3	High
10	I pay close attention to the structure and rules of the text.	3.778	1.436	4	High
15	I often discuss writing topics with colleagues.	3.767	1.461	5	High
6	I begin by reading before writing.	3.767	1.454	6	High
17	I revise my writing according to the structure and rules of the text.	3.744	1.473	7	High
1	I prepare a detailed plan before writing.	3.733	1.498	8	High
4	My initial plans focus on language resources.	3.711	1.486	9	High
18	I review grammatical rules.	3.700	1.525	10	High
9	I review the text structure for ideological integration.	3.644	1.509	11	Moderate
11	I use my writing time effectively.	3.600	1.428	12	Moderate
7	I write as I think.	3.556	1.415	13	Moderate
19	I review the text structure for ideological integration.	3.544	1.623	14	Moderate
3	I visualize my writing in different ways before starting.	3.489	1.545	15	Moderate
12	I write in a comfortable environment.	3.489	1.545	16	Moderate
5	I set goals and sub-goals for my writing.	3.444	1.507	17	Moderate
14	I use simple sentences when necessary.	3.433	1.558	18	Moderate
16	A comfortable environment is crucial to my writing process.	3.389	1.512	19	Moderate
	Total Degree (regulation of cognition)	3.661	0.810	------	High

Table 4 presents data related to the writing skills of applied college students in Saudi Arabia, particularly in relation to the regulation of cognition. The items are numbered from 1 to 19 and are arranged in order from highest to lowest mean score. The mean and standard deviation are given for each item, as well as the order and level (high or moderate) of each item.

The highest-level statements in the data on students' writing practices are listed first, with item 13 having the highest mean score of 4.022, indicating that students are generally effective at using their time during writing. The next four highest items also relate to effective writing practices, such as using background knowledge, focusing on structure and rules, and engaging in peer discussions. The lowest-level statements are listed last, with item 9 indicating that students focus more on delivering messages than providing detailed explanations. Other moderate-level statements include avoiding unfamiliar vocabulary and grammar, simplifying sentences when necessary, and setting goals. Overall, the data suggest that students have a relatively high degree of cognition regulation in writing, with a mean score of 3.661.

Question 3: Are there gender differences in the levels of metacognitive awareness and writing performance among applied college students in Saudi Arabia?

To investigate the relationship between the levels of metacognitive awareness and writing performance according to gender, an independent samples t-test was applied to determine the mean differences as follows:

Table 5 T-test for gender-based differences

Item	Gender	N	Mean	S.D	D. of freedom	t	Sig.
Knowledge of cognition	Male	41	3.45	0.69	88	2.095	0.039*
	Female	49	3.78	0.82			
Regulation of cognition	Male	41	3.47	0.73	88	2.112	0.037*
	Female	49	3.82	0.85			

*. The difference is significant at the 0.05 level.

Table 5 presents the results of an independent t-test examining gender differences in metacognitive awareness levels among applied college students in Saudi Arabia. The findings reveal significant gender differences in metacognitive awareness levels for both knowledge of cognition (t=2.095, p=0.039) and regulation of cognition (t=2.112, p=0.037). Female students obtained higher mean scores than their male counterparts, implying that they had greater metacognitive awareness levels in both areas.

Question 4: Is there a statistically significant difference in the levels of metacognitive awareness and its relation to writing skills among students based on their academic majors?

An independent samples t-test was used to explore potential differences in mean scores between levels of metacognitive awareness and writing performance based on academic major.

Table 6 T-test for metacognitive awareness and writing performance by academic major

Item	academic majors	N	Mean	S.D	D. of freedom	t	Sig.
Knowledge of cognition	IT	47	4.07	0.644	88	7.04	.000**
	Supply Chain	43	3.14	0.599			
Regulation of cognition	IT	47	4.15	0.659	88	7.84	.000**
	Supply Chain	43	3.12	0.586			

**. The difference is significant at the 0.01 level.

Information regarding the levels of metacognitive awareness among IT and Supply Chain students is presented in Table 6. The data reveals that there are noteworthy variations between the mean scores of the two groups for knowledge of cognition and regulation of cognition items, with IT students obtaining higher mean scores than Supply Chain students. The t-values for both items were 7.04 and 7.84, respectively, with a significance level of .000**, indicating a statistically significant difference between the two groups. These findings suggest that IT students are more proficient in metacognitive

skills, which may contribute to their better performance in writing tasks. Overall, these results strongly indicate that the observed differences are not due to chance.

The study's hypotheses were supported by the results, providing insights into the metacognitive awareness and writing performance of Saudi Arabian applied college students. While students have a moderate level of knowledge of cognition related to writing skills, additional guidance and instruction may be necessary to improve their writing strategies. Furthermore, IT students outperformed Supply Chain students in both knowledge and regulation of cognition. These findings have important implications for educators and policymakers, emphasizing the need for targeted interventions to enhance students' metacognitive skills and writing performance. Future research should explore the factors contributing to these differences and develop effective interventions to promote students' metacognitive awareness and writing skills.

5. DISCUSSION

In this discussion, we will delve into the results presented in the tables, which provide data on the levels of metacognitive awareness among applied college students in Saudi Arabia, specifically looking at the impact of gender and academic majors. We aim to analyze and interpret these findings to offer insights into how educators can foster the development of these essential skills and improve teaching and learning in higher education.

Upon examining the first research question, the results of this study suggest that the level of metacognitive awareness related to writing skills among applied college students in Saudi Arabia is moderate. This finding is consistent with previous studies conducted by Al-Zubeiry (2019) and Alodwan and Ibnian (2014) that found similar levels of metacognitive awareness among college students in Saudi Arabia. The MAWQ high-level items reveal that students possess a solid comprehension of the writing process. However, the moderate-level items suggest that there is still room for improvement and additional guidance in their writing strategies. This discovery aligns with the findings of a study conducted by Song and August (2002), which highlighted the need for students to receive explicit instruction and practice to enhance their writing strategies. It is important to note that effective writing skills are essential for producing well-written texts, and further research is necessary to identify the factors contributing to the moderate level of knowledge of cognition and to develop effective interventions to enhance students' writing skills (Teng & Yue, 2022; Tomak & Ataş, 2019).

The study's second question yielded results that align with previous research, indicating that applied college students in Saudi Arabia possess a moderate level of knowledge of cognition pertaining to writing skills, which is consistent with the findings of Al-Zubeiry (2019) and Alodwan & Ibnian (2014). However, the finding that students possess a relatively high degree of regulation of cognition during writing is consistent with studies by Abdelrahman (2020), Aydin & Ayranci (2018), and Collins et al. (2021). These studies found that students are proficient in utilizing background knowledge to develop ideas, focusing on the text structure and rules, and participating in peer discussions about writing topics. This finding is also consistent with Alhaqbani & Riazi's (2012) and Farahian's (2017) research, which found that students possess effective writing practices. While this suggests that students have effective writing practices and a relatively high degree of regulation of cognition, targeted instruction and practice may be necessary to improve their writing strategies, as recommended by Aydin & Ayranci (2018), Collins et al. (2021), and Farahian (2017).

Therefore, further research and intervention strategies are necessary to improve students' writing skills and cognitive abilities.

Regarding the third question of this study, results indicate that female students exhibited higher levels of metacognitive awareness compared to male students. This finding is in line with previous research, which suggests that females tend to engage in more metacognitive processes. However, the underlying factors responsible for these gender differences require further investigation. Previous studies have found that females tend to exhibit higher levels of metacognitive awareness than males (Basaffar & Bukhari, 2023; Collins et al., 2021; Farahian, 2017; Sun et al., 2022). However, the reasons for these gender differences remain unclear and require further investigation (Alhaqbani & Riazi, 2012; Alodwan & Ibnian, 2014). The present study's findings have implications for educators and policymakers aiming to enhance students' academic performance by promoting metacognitive awareness. These findings suggest that promoting metacognitive processes could be particularly beneficial for male students in Saudi Arabia. Further research is needed to determine the underlying causes of gender differences in metacognitive awareness and to develop effective strategies to improve metacognitive awareness among male students.

In the fourth question of the study, it was found that IT students scored higher in knowledge of cognition and regulation of cognition compared to Supply Chain students. This could be due to several reasons. Firstly, IT programs typically emphasize critical thinking and self-regulated learning activities, which can improve students' cognitive abilities. Such programs often require complex tasks, which demand higher levels of cognitive processing and self-regulation. Secondly, writing-intensive courses are often mandatory in IT programs, which can help students develop their writing skills and enhance their understanding of the writing process. Moreover, IT students are usually required to produce technical reports and documentation as part of their studies and professional responsibilities, which necessitates a deeper understanding of the writing process and a higher level of cognitive regulation to create clear and concise technical writing. Overall, these factors suggest that IT students may have a better understanding of the writing process and improved cognitive regulation, leading to higher scores in knowledge of cognition and regulation of cognition when compared to Supply Chain students.

This study provides important information about the factors that impact metacognitive awareness in Saudi Arabian college students. The results can be utilized to implement specific interventions and strategies to enhance the development of these critical skills and improve the quality of teaching and learning in higher education. Although the study's applicability to other populations may be restricted, the findings have noteworthy consequences for policymakers and educators who aim to support academic achievement and metacognitive awareness in college students.

6. PEDAGOGICAL IMPLICATIONS

English instructors teaching writing to Saudi Arabian applied college students can use the findings of this study to improve their pedagogy. Specifically, they can focus on promoting metacognitive awareness by incorporating strategies such as self-reflection, planning, and self-evaluation into the writing process. Instructors can also assess students' level of metacognitive awareness using the modified version of the Metacognitive Awareness Writing Questionnaire (MAWQ) and provide feedback to help them improve their writing skills. Additionally, instructors can design writing tasks that require students to apply metacognitive

strategies and provide opportunities for students to receive feedback on their writing from peers and the instructor, focusing on the writing process, as well as the final product. By doing so, students can develop their metacognitive awareness and improve their writing skills.

7. LIMITATIONS AND RECOMMENDATIONS

The study has limitations, including a small sample size, self-reported data, and not considering other factors that could affect metacognitive awareness and writing performance. Future studies should replicate the current study with larger and more diverse samples and use multiple sources of data to measure participants' skills. Additionally, future studies should investigate other factors that may influence metacognitive awareness and writing performance, such as motivation and learning styles. Practical implications include identifying areas where students may need further support and instruction, tailoring feedback and instruction to address the specific needs of students in different academic majors, and promoting metacognitive awareness and writing skills as part of the curriculum in applied colleges in Saudi Arabia.

7. CONCLUSION

This study provides insights into the levels of metacognitive awareness among applied college students in Saudi Arabia and the impact of gender and academic majors on their writing skills. The results show that while participants had a moderate level of knowledge of cognition related to writing skills, they had a relatively high degree of regulation of cognition when it comes to writing. Moreover, female students had higher levels of metacognitive awareness than male students, and IT students outperformed Supply Chain Management students in both dimensions of metacognitive awareness. These findings highlight the importance of promoting metacognitive strategies in writing instruction to enhance the writing proficiency of applied college students. Additionally, educators and policymakers could use this information to develop targeted interventions and practices that improve students' metacognitive awareness and academic success. Overall, this study contributes to the existing literature on the role of metacognitive awareness in academic writing, and its findings have practical implications for improving writing instruction and student performance in Saudi Arabian applied college settings.

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