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Indonesian master students' motivation and metacognitive strategies in academic writing

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ABSTRACT

In higher education, students must complete their studies by writing academic papers and publishing research articles. Students might have experienced ups and downs because not all students like to write, especially academic papers. Good writers use metacognitive strategies and maintain their motivation to improve their writing skills. The current researchers conducted a mixed-method study to determine master students' motivation and metacognitive strategies in their writing and how metacognitive strategies affected their motivation in academic writing. The participants were 40 master's students of English Education at Sanata Dharma University, Yogyakarta. The researchers gathered the data using a close-ended questionnaire on Academic Writing Motivation and Metacognitive Strategy and a semi-structured interview. The first finding revealed that master students were more extrinsically motivated to write academic papers. However, both intrinsic and extrinsic motivation were involved in their success. The second finding indicated that master students were conscious of metacognitive strategies applying the stages namely planning, monitoring, and evaluating in different ways in writing. Data analysis also revealed a strong positive correlation between motivation and metacognitive strategies. They agreed that motivation and metacognitive strategy were connected in academic writing to achieve goals. Therefore, the results underlined that students must activate and maintain motivation and metacognitive strategy during the writing process. The implications and future research opportunities were discussed in this research.

Keywords: *Academic writing; Metacognitive strategies; Motivation*

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1. Introduction

For ESL learners, mastering writing skills in a second language is essential, particularly for academic writing. Academic writing is a common learning activity in higher education (Karlen & Compagnoni, 2017). More specifically, students are required to write academic papers such as essays, research papers, and theses to complete their studies successfully (Ka, 2017; Payne, 2012a), including in Indonesia (Azizah & Budiman, 2017; Ratnawati et al., 2018). Students need to develop their academic writing skills and maintain their motivation to succeed in higher education and beyond. They need to plan and prepare what and how they will write and monitor and revise their writing. Besides that, master students need to apply effective writing strategies.

The process of writing an academic paper can help students develop cognitive, metacognitive, and critical thinking skills. Oxford (2013) classified self-regulation into four strategies: metacognitive strategies, affective strategies, cognitive strategies, and social-interactive strategies. Metacognitive strategy guides the process of planning, monitoring, and evaluating, while motivation and emotions are managed through affective strategies (Teng et al., 2022). These skills are valuable for academic success as future professional and personal endeavors in exploring the difficulties and challenges of a changing world and their creative work. Academic writing can be a challenging task for master students. They might frequently face complex writing problems, such as generating ideas about the topics, writing thesis statements, topic sentences, and supporting sentences (Al Murshidi, 2014; Shukri, 2014). Moreover, students must control their thoughts, emotions, and motivation in writing (Cer, 2019; Rinnert & Kobayashi, 2009). Researchers have discovered that these factors can significantly impact the quality and effectiveness of academic writing. A skilled writer understands the strategies and planning skills required to create an organized written product (Monem, 2010). A good understanding of strategy will help students form skilled planners in academic writing. Therefore, metacognitive strategies can help students improve their academic writing process by reflecting on their thinking and applying them effectively.

In the academic writing process, it is also essential for the students to stay motivated. Students might have experienced ups and downs because not all students like to write, especially in academic papers such as essays, journals, or a thesis (Toba et al., 2019). They should read a lot and sort out various references from books, previous research journals, theories on the topics to be discussed, and appropriate research methods. They must also be able to write and convey the meaning of their writing communicatively (Qamariah, 2016).

Previous studies have investigated EFL Indonesian students' challenges in academic writing. These studies revealed that students had problems in terms of linguistics, grammar, diction, paragraph organization, and spelling errors (Ariyanti & Fitriana, 2017; Rahmatunisa, 2014; Toba et al., 2019). Furthermore, some studies also revealed that students had challenges in academic writing, such as low motivation, low writing skills and strategies, and low English proficiency (Reynolds & Teng, 2021; Teng

et al., 2022). Indeed, both intrinsic and extrinsic affect students' motivation in writing. By having strong and high motivation, students will have the persistence to finish the writing (Kulusakli, 2021; Mbato & Cendra, 2019). They are better prepared to complete the goals that have been set.

Several studies have shown that using a metacognitive strategy and maintaining motivation positively impact writing performance (Aliyu et al., 2016; Cer, 2019b; Fatiha, 2017; Karlen, 2017). They argue that more research on students' metacognitive strategies and motivation in academic writing should be conducted to determine the best strategy for their writing process. A study by Cer (2019) discovered that students who used metacognitive strategies were less likely to improve writing skills significantly than those who use traditional writing practices. This study was conducted at a private secondary school by having an experimental group and a control group. This study concluded that effective use of metacognitive strategies in classroom instruction is required to improve writing skills. The results of this study aligned with the research result conducted in Private and Government Schools in Jordan by Talafhah et al. (2018). This study revealed that metacognitive strategy training improved 12th-grade students' writing performance, with experimental groups getting instruction over 12 weeks. In line with that, recent research on students in the English Education department also discovered that students successfully used motivation-regulation strategies to complete academic writing tasks (Diasti & Mbato, 2020; Wijaya & Setiawan, 2021). These studies have examined the metacognitive and motivation-regulation strategies applied in academic writing at various levels of education, schools, and universities.

Previous studies above have discovered that motivation and metacognitive strategies play a role in students' writing process, with higher metacognitive strategies leading to higher performance and motivation, helping students realize their goals. Thus, the study by Wijaya and Setiawan (2021) recommended that future researchers conduct further correlational motivation regulation studies of students' motivation regulation using learning strategies, such as emotion regulation, cognitive strategy, metacognitive strategy, and performance goal experience. Therefore, the present research was conducted to address the gaps to determine master students' motivation and metacognitive strategies in academic writing. The study examined how students' motivation correlated to their metacognitive strategies and focused on finding the answers to three research questions (1) to what extent are master students motivated toward academic writing? (2) how do master students employ metacognitive strategies in academic writing? 3) is there any relationship between master students' motivation and metacognitive strategy in academic writing? The third research question was developed into the following hypothesis.

H0: There is no significant correlation between master students' motivation and metacognitive strategy in academic writing.

H1: There is a significant correlation between master students' motivation and metacognitive strategy in academic writing.

2. Literature review

2. 1. Metacognitive strategy

Metacognition is simply thinking about thinking and learning (Anderson, 2002). The one aspect that could be important for success in learning is good monitoring of one's knowledge. According to Flavell (1979), metacognition refers to the organization of data, experiences, goals, and strategies, including critical thinking, problem-solving, and decision-making. Metacognition is distinguished between metacognitive knowledge and strategies. Metacognitive strategies encompass a range of activities where learners engage in planning, monitoring, and evaluating their cognitive processes (Oppong et al., 2019; Vosniadou et al., 2021). These strategies include a deep understanding of one's cognitive processes, such as attention, memory, and problem-solving strategies. In line with that, Wanna (2019) mentioned metacognition as central to learning, the process that supports effective strategies, and the principle of intelligent behavior. Remembering, rehearsing, and problem-solving are just a few examples of the higher-order executive cognitive processes monitored and coordinated by metacognition (Tobias & Everson, 2009).

Brown identified the main regulatory skills: planning-in-action, evaluating, and revising, which empowered the writers to generate and select ideas in writing (Wanna, 2019). These skills are crucial for writers, as they help them plan and organize their ideas, monitor their progress, and evaluate their writing to make revisions and improvements. Planning involves setting goals, generating ideas, and developing a writing plan. Monitoring includes keeping track of the progress, identifying areas that need more attention, and making adjustments as needed. In evaluating, writers assess the quality of their writing, identify the strengths and the weaknesses, and revise the final product to make improvements (Graham & Harris, 2000; Hayes, 1996).

Many researchers have presented their findings on learning strategies. Weinstein et al. (2000) stated that understanding new knowledge and abilities is a learning strategy. The concepts of language learning strategy have been indicated by some researchers (O'Malley & Chamot, 1990; Oxford, 1990; Wenden, 1991). Language learning strategy reflects the learners' strategic involvement to improve their learning effectively in the second language field. Taxonomy of language learning strategies was developed based on the findings of some researchers' research on learning strategies. Learners can implement cognitive, metacognitive, social, and affective language learning strategies (Dörnyei, 2005).

Students can use both cognitive and metacognitive strategies in academic writing. The cognitive strategy should be emphasized as a metacognitive strategy for successful writing. Metacognitive strategies foster learning awareness to plan, control, evaluate, and regulate the learning process (Karlen & Compagnoni, 2017). Metacognitive strategies are aimed at assisting students in becoming more conscious of their thought processes when they learn (Rahimi & Katal, 2012). A study conducted on secondary students at Almazar school by Al-Jarrah et al. (2019) discovered that using metacognitive strategies helps teachers and students be more self-regulated. The results of this study are supported by

the findings of previous studies which found that effective use of metacognitive strategies in classroom instruction helps students successfully improve their writing performances (Cer, 2019; Talafhah et al., 2018). To sum up, these strategies support students in developing better learning habits, especially in academic writing.

2.2. Motivation in academic writing

Writing proficiency is influenced by the motivation to write (Pajares, 2003). In the larger context, motivation involves the writer's performance, guides the writer, and maintains the writer's activity in the process of writing. Moreover, motivation can also influence the writing process by engaging the metacognitive strategy. Payne (2012) stated that students who lack writing motivation are less likely to participate in academic writing tasks. These students may struggle with writing because they are anxious and have low self-efficacy. According to Maier and Richter (2014), motivation is the primary requirement for students to stimulate and maintain cognitive and metacognitive skills during the writing process. It is believed that motivation contributes to students' achievements or failures.

A study of 82 articles on students in grades 1-12 identified 24 motivation-related constructs, with 46% being unclearly defined. Girls were found to be more motivated to write, with a moderate link between motivation and writing performance. Teaching practices include handwriting instruction, self-regulated strategy development, and collaborative writing positively influenced students' motivation (Camacho et al., 2021). Mbato (2013) also claims that motivation is one of the aspects of self-regulation. Self-regulation applies to the process in which students control and evaluate their learning and behavior. It involves monitoring the thoughts, emotions, and actions, planning strategies, setting goals, and making adjustments to achieve them (Payne, 2012). Self-regulation helps students succeed by independently monitoring and evaluating their learning process results, which is important in the writing process.

Goal orientation is an important aspect of motivation. There are two categories of writing motivational incentives: intrinsic and extrinsic (Ryan & Deci, 2000). Intrinsic motivation examines the items assessed, including curiosity and involvement. Intrinsic factors that influence students come from within students and without any influence from parents, peers, or parents. Students who are engaged primarily for enjoyment and satisfaction from performing the tasks have been seen as intrinsically motivated. Meanwhile, extrinsically motivated behavior is defined as being engaged in achieving a goal (Hayamizu, 1997). Extrinsic motivation is something outside the students that makes them interested in doing the tasks. For example, the social support from their parents, peers, and lecturers related to the formal learning context given by them (Listyani, 2022). Consequently, extrinsic motivation examines the impact of grades, competition, and social recognition. In the study of English language learners, motivational beliefs (Graham et al., 2021) revealed that students' motivation influences the number of times, effort, actions, writing tools, and the interaction they use to collaborate with other writers.

Several studies at the higher level of education have examined that students successfully used motivation-regulation strategies to accomplish academic writing tasks. A study by Listyani (2022) of 33 English Language Learners in a private university revealed three factors of students' demotivating: delaying tasks, having too many tasks, and being lazy. This study also found that intrinsic and extrinsic motivations are important for students' success and instrumental and idealistic motivation. Another study (Wijaya & Setiawan, 2021) involving 36 master students of English Education revealed that master students become more skilled and resilient in academic writing by applying motivation regulation strategies. A recent study (Zhang & Dong, 2022) of 230 college students in China discovered that students' motivational regulation predictors are stable predictors of writing well-being.

As previously mentioned, motivation and metacognitive strategy are interconnected in supporting students' academic writing process. By acknowledging the goal or objective of academic writing, students have successfully maintained their motivation. The study on this topic is highly relevant to the requirements of master students, as they must write published research articles, especially in Indonesia. Therefore, further research needs to be carried out on the students' motivation and metacognitive strategy in academic writing.

3. Method

3.1. Research design

This study is designed to explore the extent of master students' motivation and how they applied metacognitive strategies in academic writing. This research used a mixed-method design in which the quantitative and qualitative data are connected and the results are integrated (Creswell & Creswell, 2017; Ivankova et al., 2006). Quantitative data was collected to gain insight into master students' motivation and their metacognitive strategies in academic writing. Qualitative data was collected to obtain a deep understanding and to explore the phenomenon of master students' motivation and metacognitive strategy in academic writing.

3.2. Participants

This research was conducted at Sanata Dharma University, Yogyakarta. The participants in this research were 40 students of the English Education Master Program. These 40 students were studying the same subject, Educational Psychology. They were also experienced in writing research papers for publication. The researchers used purposive sampling to select the participants with the necessary knowledge and experiences. Purposive sampling is a nonrandom technique that selects participants based on specific qualities, such as availability, willingness, and communication skills, to gather relevant information and achieve research goals (Etikan et al., 2016). The subjects of this study were chosen because they met three main criteria. First, academic writing was an essential component to complete master students' assignments at Sanata Dharma University. Second, master students had studied motivation and metacognition theories

in Semester 1. The researchers were curious whether these two theories contributed to their academic writing assignments. Third, the selected students had prior experience writing research papers for publication. These criteria ensured that their insights and experiences would be valuable for the research objectives. The researchers asked for the participants' approval by giving them informed consent related to the research objectives and funding before they agreed or disagreed to participate in the research.

3.3. Research instruments and data gathering technique

This research used two research instruments, a questionnaire, and semi-structured interviews. The questionnaire was divided into two parts: academic writing motivation and metacognitive strategy. The online survey was distributed to 40 participants to understand their traits, attitudes, and perspectives toward academic writing. Semi-structured interviews for the chosen participants were conducted to gain more data to support the findings. The researchers analyzed online survey results and identified the participants with varying motivation and metacognition strategy utilization levels. Two participants from low, medium, and high levels of motivation and metacognitive strategy utilization, as indicated in their responses to the questionnaire, were selected to capture diverse answers and insights.

The data on master students' motivation was collected by distributing the Academic Writing Motivation Questionnaire adapted from Payne (2021). The original questionnaire consisted of 37 statements in eight factors. However, the researchers used 15 statements in four aspects of writing motivation because the statements were relevant to the research objectives and correlated to the metacognitive strategy. This five-point Likert scale questionnaire contained 15 items indicating intrinsic (enjoyment and self-efficacy) and extrinsic motivation (instrumentality and recognition) (see appendix B.1. Meanwhile, master students' metacognitive strategy was measured using Metacognitive Strategy Knowledge (MSK) adapted from Karlen (2017) (see appendix B.2. The researcher used all of the items in the original questionnaire but changed some of the sentences to ensure the statements were relevant to master students' experience in academic writing. This questionnaire consists of eight items on planning, five on monitoring, and six on evaluating. The original and adapted Academic Writing Motivation and Metacognitive Strategy Knowledge questionnaires can be seen in the appendix. A set of interview questions for several volunteers was prepared to discover master students' opinions and study how their metacognitive writing strategies affect their motivation in writing. There were ten semi-structured interview questions involving the process of writing and their motivation in writing adapted from (Goctu, 2017) (see appendix B.3). These two research instruments were used for triangulation.

Furthermore, the researchers piloted the questionnaire for participants to improve the research's validity and reliability, as indicated in Table 1.

Table 1
Validity of the questionnaire items.

Questionnaire	Category	Number of Items	
		Valid	**Invalid**
Academic Writing Motivation	Motivation	1,2,3,4,5,6,7,8,9,10,11,12,13 ,14,15	-
Metacognitive Strategy	Planning	1,2,3,4,5,6,8	7
	Monitoring	9,11,12,13	10
	Evaluating/Revising	14,15,16,17,18,19	-

Table 1 shows that two items on the Metacognitive Strategy Questionnaire were invalid. The researchers conducted a validity test three times using SPSS. The reliability of a questionnaire can be verified by assessing its internal consistency, which is measured by the correlations between individual items and the total score. According to Heale and Twycross (2015), a correlation coefficient of less than 0,3 implies a weak correlation, 0,3-0,5 implies a moderate correlation, and greater than 0,5 suggests a strong correlation. Thus, the researchers used valid items for data processing.

Table 2
Cronbach's alpha coefficient for academic writing motivation and metacognitive strategy questionnaire.

No	***Variable***	***N of items***	***Cronbach's Alpha***	***Status***
1.	Students' motivation	15	0.897	Reliable
2.	Metacognitive strategy	17	0.839	Reliable

After the two invalid items were removed, Cronbach's alpha coefficients for the Academic Writing Motivation and Metacognitive Strategy Questionnaire were found to be .897 and .839. The coefficient of the Academic Writing Motivation questionnaire indicated that the items were strongly correlated and effectively measured the same underlying variables. Similarly, an alpha coefficient for Metacognitive Strategy indicated good internal consistency among the items, although it is slightly lower than the coefficient for the Academic Writing Motivation questionnaire. In short, these coefficients implied that the questionnaires were reliable for measuring their respective variables.

Table 2 indicates the Cronbach's alpha coefficient value ≤ .6. Both questionnaires had good internal consistency, with the Academic Writing Motivation questionnaire

showing slightly higher reliability. As a result of the testing, the questionnaires employed in this research were considered to be valid and reliable for measuring the respective variables.

3.4. Data analysis

Descriptive statistical analysis was used to discover the meaning of master students' motivation and metacognitive strategies in academic writing (Mbato, 2013; Mbato & Cendra, 2019). The mean was used to analyze master students' motivation toward the metacognitive strategy level in academic writing. The quantitative data were collected from the online questionnaire using Google Forms. The data collection results were presented in a table showing each item's mean and standard deviation. Forty participants with low, middle, and high levels of motivation and metacognitive strategies based on the questionnaire results were chosen using purposive sampling, as explained above. Data reduction, data display, and conclusions drawn to analyze interview results (Miles & Huberman, 1994). After the interview, the quantitative and qualitative results were combined to gain the general findings of the study and its implications. The researchers used the Vivo Coding technique to code the interview data, as proposed by Saldana (2013). Saldana emphasizes active participation in coding for qualitative research to enhance understanding and uncover meaningful interpretations. In this study, the researchers carried out five stages of Vivo Coding intending to increase awareness of individual circumstances. The five stages of Vivo coding that researchers applied in analyzing data involved the following steps (Saldana, Year): First, an initial understanding of the data. The researchers read and absorbed the qualitative data to gain an initial understanding of the content. Second, researchers provided labels or codes to refer to the relevant units of information in the data. Third, the researchers looked for patterns and themes that emerged from data that had been labeled. Fourth, the researchers reflected on and interpreted the data by contemplating the meaning of the patterns and themes that had been identified. This stage involved a deep understanding of the message or significance contained in the data. Finally, the researchers developed a rich and descriptive narrative form that allowed them to describe the findings in depth.

4. Findings and discussion

This research aimed to discover master students' motivation and how they applied metacognitive strategies in academic writing. This section discusses and expands on the interview results and student responses to the Academic Writing Motivation and Metacognitive Strategy Questionnaire. It was found that motivation and metacognitive strategies contributed to successful academic writing performance. An interpretation of the open-ended questionnaire results was formulated to support the data. The researchers divided the findings into three sections representing the answers to each question. The first section discusses the level of master students' motivation in academic writing. The second part examines the metacognitive strategies used by master students during the

academic writing process. Furthermore, the third section discussed the relationship between students' motivation and metacognitive strategies regarding academic writing.

4.1. Master students' motivation in academic writing

Students' motivation in academic writing was influenced by intrinsic and extrinsic factors. The Academic Writing Motivation questionnaire was used to examine master students' motivation levels, and variables such as the mean, total score, and standard deviation were generated. Table 3 presents the mean and standard deviations for each item in academic writing motivation. The original questionnaire can be seen in the appendix.

Table 3

Academic writing motivation.

No.	Statement	Mean	SD
1.	Enjoyable writing	3.65	.893
2.	Writing down thoughts	3.90	.955
3.	Writing with correct grammar	3.80	.648
4.	Completing difficult writing assignments	4.35	.736
5.	Improving academic performance by writing well	4.43	.712
6.	The importance of putting efforts into writing	4.13	.911
7.	The excitement of getting feedback from the advisor	4.55	.783
8.	Expressing the ideas clearly	3.68	.829
9.	Easily focusing on writing	3.10	.871
10.	Planning out the writing	4.05	.714
11.	The importance of becoming a good writer	3.75	.899
12.	Revising writing before submitting	4.08	.859
13.	Enjoyable writing research papers	3.30	1.067
14.	Improving writing skills through practice	3.48	1.154
15.	High motivation for academic writing	3.38	1.213
	Average	**3.842**	**0.88293**

Adapted from Payne (2012).

The data in Table 3 showed that the highest mean in academic writing motivation was statement 7 (4.55), which was related to the excitement of getting feedback from an instructor. Item number 7 was derived from extrinsic motivation. It means that students were motivated when they received external support and feedback from their lecturers or

instructor. This finding aligns with Gustiani (2020) that students feel excited to learn when they get external support from lecturers, parents, teachers, and friends.

Additionally, item number 5 (4.43) was about students' intention in writing academically. It stated that writing well would be a benefit for academic performance. Meanwhile, item number 9 was the lowest mean (3.10), which was about students' focus on academic writing. The students were not easily focused on what they were writing. Therefore, they were sometimes unmotivated in writing. It corresponded to the interview in which S05 mentioned, "*I feel unmotivated to continue my paper due to multiple deadlines"* (S05).

S05 also stated that her biggest challenge in writing was maintaining her concentration and motivation. According to the interview result, external factors such as many projects and upcoming deadlines made the students lose focus on what needed to be done. In sum, the unmotivated feeling can be caused by external factors, including having many assignments simultaneously, which makes the students unable to focus on their writing easily. From item number 13 (3.30), it can be seen that students did not enjoy writing research papers. It was in line with item no 15 (3.38) that students felt unmotivated to write in their class. The students' responses to numbers 13 and 15 corresponded to the interview result: *"I feel unmotivated to complete my tasks due to insecurity and lack of experience"* (S03).

S03 also tended to be more motivated to complete the writing assignments as the requirement to graduate. It was in line with item number 4 (mean 4.35) and item number 6 (mean 4.13), which was about students' effort in writing. They kept on their track and did the assignments, although it was difficult. This response is related to the strategy the students use in writing. Based on item number 10 (mean 4.05) and 12 (mean 4.08), most students planned how they would write their academic papers. Besides planning, most students also monitored their progress by revising their writing before submitting it. These activities reflected the use of metacognitive strategies.

The findings demonstrated that master students were extrinsically motivated to write academic papers. Data from the questionnaire showed that students tended to be more motivated to complete the writing assignments as the requirement to graduate. They kept on their track and did the assignments even though it was difficult. This finding corresponds to previous studies (Rochmah, 2021) that students tended to maintain their motivation and stay focused while writing. Qualitative data analysis on students' motivation also indicated that students were motivated when they received external support and feedback from their lecturers or instructor. In addition, positive teachers' or instructors' feedback could motivate students to develop their competence (Johnson, 2017). However, external factors such as many projects and upcoming deadlines simultaneously made the students lose focus on what needed to be done (Barker et al., 2002). In sum, the unmotivated feeling can be caused by external factors, including having many assignments simultaneously, which makes the students unable to focus on their writing easily.

4.2. Metacognitive strategy in academic writing

Based on the findings of the Metacognitive Strategy Questionnaire, there were three phases of the metacognitive strategies. These three phases are planning, monitoring, and revising or evaluating. Metacognitive strategies had 17 items in total, and the result of the questionnaire can be seen in Table 4.

4.2.1. Planning

Students were asked seven questions about whether their planning strategy helped them in academic writing. The following Table 4 shows their responses.

Table 4

Planning strategy in academic writing.

No.	*Statement*	*Mean*	*SD*
1.	Looking for topics with extensive research	3.50	.987
2.	Creating a schedule to complete the goals	3.78	.947
3.	Looking at the assignment and start writing	3.45	1.011
4.	Using brainstorming as a writing tool	3.85	.662
5.	Formulating the topic as broadly as possible	3.88	.791
6.	Collecting the information and asking for feedback before writing a paper	3.83	.781
7.	Creating a mind map to complement existing knowledge with literature	3.20	.911
	Average	**3.641**	**0.87**

Adapting from Karlen (2017).

As shown in Table 4, in the planning section, item number 5 was the highest mean among others (mean 3.88). It stated that students formulated the topic as broadly as possible. It implied that students thought about some interesting topic before they started writing. Furthermore, statement number 6 (mean 3.83) showed that students also asked their advisors for feedback on their planned papers. Those were the planning steps that students mostly did in their writing process. This response aligns with the interview results: "*I usually make some possible plans and outline the topic I am going to write about. I try to find supporting resources and I just start to write when I already find an interesting topic for me"* (S02). *"I researched the expected topics, consulted to the lecturer, and gathered data to support them"* (S01).

From the interview result, it seems that students usually made plans for their writing. They tried to find some possible topics and gather preliminary data from the field. Moreover, S04 and S06 expressed the same opinion. They believed it would be easier for them to figure out the next step, such as finding the supporting journals and theoretical reviews to support her topic. However, from the interview result, Student 3 reported not

applying the planning stage in her writing process. She stated, *"Somehow, I know the method, but I didn't outline or think about the strategies. I just started writing"* (S03).

4.2.2. Monitoring

Students were asked four questions regarding whether or not they monitor their writing process, such as keeping track of what they wrote and ensuring the consistency of their writing. The following Table 5 shows their responses.

Table 5
Monitoring strategy in academic writing**.**

No.	***Statement***	***Mean***	***SD***
8.	Using literature review and notes to guide the writing	4.20	.648
9.	Considering the defined argumentation in advance	4.10	.496
10.	Ensuring the paper consistent with the introduction	3.93	.797
11.	Reading aloud to ensure comprehension	3.63	.952
	Average	**3.965**	**0.72325**

Adapting from Karlen (2017). The complete version can be seen in the appendix

In the monitoring phase, the results showed that most students used the literature review they found and their notes as their guides in writing. It can be seen in item number 8, which reached the highest mean among others (mean 4.20). Students monitored their writing process by considering their argumentation and ensuring their paper was consistent with the introduction. Moreover, this statement was supported by S02 and S01, who stated: *"Every time I finish a paragraph, I will reread and re-check my writing whether it makes sense or if there is a grammatical error"* (S02). *"I know how to apply the monitoring part in metacognitive strategy. First, I make sure that the organization of my idea is clear. Second, I ensure that the theoretical framework and previous studies support my writing. Third, I am writing clearly to follow the procedures of academic papers"* (S01)

The interview results show that S01 and S02 tried to double-check their paragraphs while writing academic papers. In sum, students primarily checked and verified their progress in content, idea organization, grammar, and mechanics. However, S06 expressed, *"Before, I didn't realize the strategy I use is metacognitive strategy. But I think I already apply metacognitive strategy from a long time such as planning, monitoring, and evaluating" (S06).*

4.2.3. Evaluating

Students were asked six questions about evaluating strategies related to how well they completed, checked, and revised their writing. Their responses are shown in Table 6.

Table 6

Evaluating strategy in academic writing.

No.	*Statement*	*Mean*	*SD*
12.	Checking and revising sentences to improve content, style, and grammar	3.50	.987
13.	Revising parts of the paper to improve the quality	3.78	.947
14.	Keeping the argumentation consistent with the introduction	3.45	1.011
15.	The alignment of the introduction and the main body of the paper	3.85	.662
16.	Asking for feedback from proofreaders at the end of the writing process	3.88	.791
17.	Waiting for feedback from the supervisor	3.83	.781
	Average	**3.715**	**0.86317**

Adapting from Karlen (2017).

Evaluating phase has six items in total. The result showed that the highest mean was 4.28. It indicated that students waited for feedback from their supervisor. They also checked the content and grammar after receiving the feedback. Moreover, item numbers 13 and 15 also had high mean scores (4.13). The statements indicated that students revised the parts that were not yet satisfied. Students also ensured that the main body of their paper followed the introduction. In the result of the interviews, S04 shared her opinion about the evaluation process "*I re-check the format/technical/ideas to ensure the clarity"* (S04).

Furthermore, S04 responded that she evaluated her writing characteristics and was concerned about strategies. S01 also shared the same idea about the evaluation process in writing. She believed that evaluating her writing would give her a sense of achievement because she had achieved something. Another response from S05 about her strategy in evaluation *"I tried to figure out another article to help me comprehend the text or compare it and discussed it with my friends"* (S05).

In the interview results, other students also tended to work together with peers or in group work. They stated that peers could help them to be proofreaders or give ideas on their writing. In short, the students emphasized the importance of self-evaluation by indicating the use of different techniques in the writing evaluation. For example, students reread their papers several times, checked the grammar errors and content, and discussed with their friends to help them evaluate.

Most students used and were aware of metacognitive strategies in academic writing from the evidence of quantitative and qualitative data. Master students used metacognitive writing strategies at a high level of frequency. They utilized the three metacognitive writing strategies: planning, monitoring, and evaluation. According to the questionnaire, students tended to make plans before writing an academic paper by making an outline for the planned paper, asking their advisor for feedback on their planned paper,

and finding supporting resources to support their writing. This finding aligns with previous studies (Rochmah, 2021; Teng & Zhang, 2018). However, from the interview result, one student did not engage in the planning stage of the writing process. It was also found in the study of first-year students at International Black Sea University in their academic writing, where some students applied an incomplete stage of metacognitive strategy (Goctu, 2017). Data from the interview revealed that master students primarily checked and verified their progress in content, idea organization, grammar, and mechanics as the monitoring phase suggested in these studies (Goctu, 2017; Riwayatiningsih, 2014).

Furthermore, students systematically observed their progress while still involved in the writing process. In the evaluation process, the students emphasized the importance of self-evaluation by indicating the use of different techniques in the writing evaluation. Students tended to work with peers or in group work by comparing and discussing their writing. Students also waited for feedback from their supervisor and checked the content and grammar after having the feedback. These findings correspond to the previous related studies (Al-Jarrah et al., 2019; Goctu, 2017; Riwayatiningsih, 2014; Rochmah, 2021). This result also strengthened the arguments about evaluation activities accomplished through three phases: self-evaluation, peer evaluation, and teacher evaluation (Lv & Chen, 2010).

4.3. Metacognitive strategy and students' motivation

Pearson bivariate correlation was used to evaluate the relationship between students' motivation and metacognitive strategy in academic writing. The result is presented in Table 7.

Table 7
Pearson correlation of motivation and metacognitive strategy.

Correlations

		Motivation	Metacognitive Strategy
Motivation	Pearson Correlation	1	.766**
	Sig. (2-tailed)		.000
	N	26	26

Metacognitive Strategy	Pearson Correlation	.766**	1
	Sig. (2-tailed)	.000	
	N	26	26

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

From the data in Table 7, the correlation between motivation and metacognitive strategy in academic writing was statistically significant at a 0.00 level. The correlation coefficient (r=.766) indicated a strong positive correlation between motivation and metacognitive strategy. As a result, since .000 is less than .05, the correlation was significant and not coincidental (Creswell, 2012). It could be concluded that there was a positive and significant correlation between students' motivation and metacognitive strategy regarding academic writing. The evidence from interview results supported this finding. S02 stated that *"I was motivated to write when I had already planned, set my goals, and get feedback for my papers. So, I knew exactly what to do."* Similarly, S01 concluded that "*motivation-regulation and metacognitive strategies are parts of self-regulation."* From this evidence, master students demonstrated that motivation and metacognitive strategy had a strong connection.

This result was consistent with previous studies in a similar context, which discovered that metacognitive strategy and motivation were connected in academic writing to achieve goals. This research revealed the same finding as Irgatoğlu and Kırmızı (2022), which found that undergraduate L2 writers had high levels of cognitive and metacognitive strategies for motivational writing regulation. Another recent research by Celik (2022) discovered that metacognitive strategy could improve self-efficacy, motivation, and academic achievement. Therefore, these studies on motivation and metacognitive strategies enlighten the ideas of Wolters (2003) and Zimmerman (2011), which stated that motivational regulation strategies affect learning when combined with cognitive, metacognitive, and social strategies.

5. Conclusion

This current study reported the findings on master students' motivation and their metacognitive strategies in academic writing. In conclusion, master students of English Education at Sanata Dharma University, Yogyakarta, were extrinsically motivated to write academic papers by applying metacognitive strategies in academic writing. Most students were motivated when they received external support and feedback from their peers, lecturers, and instructors. They kept on track and stayed motivated in doing

academic writing, although it was difficult. Therefore, students must be motivated to activate and maintain cognitive and metacognitive resources during text comprehension. Moreover, master students were aware of and applied the stages of metacognitive strategies, i.e., planning, monitoring, and evaluating in academic writing.

This study provides three pedagogical implications and two recommendations for future research. First, students should regulate and maintain motivation in writing academic papers to accomplish their specific goals. Second, positive feedback from the teachers or instructors can motivate students to develop their competence. Third, students need to apply metacognitive strategies to improve their writing performance and increase their effectiveness in writing academic papers.

Future researchers are encouraged to investigate similar studies on university or high school students and discuss the relationship between metacognitive strategy and motivation in academic writing in different contexts. Further research may focus on determining whether metacognitive strategies and students' motivation influence writing performances.

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