

THE CORRELATION BETWEEN METACOGNITIVE AWARENESS AND STUDENT'S WRITING SKILLS IN JUNIOR HIGH SCHOOL BATAM

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ABSTRACT

This research explores the connection between students' metacognitive awareness and their writing abilities in the context of English as a Foreign Language (EFL) at the junior high school level. The Metacognitive Awareness Inventory (MAI) was used to assess students' metacognitive awareness, while their writing skills were evaluated through a descriptive writing test. Descriptive statistics revealed that students' metacognitive awareness scores ranged from 81 to 98, with an average score of 86.35, while writing scores varied from 15 to 96, with an average of 68.80. The normality test confirmed that the data satisfied the assumptions required for parametric analysis. A Pearson Product-Moment Correlation analysis indicated a positive and statistically significant relationship between metacognitive awareness and writing skills ($r = .218$, $p = .030$). Despite the modest strength of the correlation, the findings suggest that students who demonstrate higher levels of metacognitive awareness are more likely to perform better in writing, underscoring the importance of integrating strategies such as guided planning, self-monitoring, and self-evaluation in writing instruction.

Keywords: Correlational study, metacognitive awareness, writing skills, junior high school, EFL learners

1. INTROUCTION

Nowadays, writing has become crucial skill that students must have, especially in English language learning. It is used to perform mundane task like taking notes to more complex purposes like filing in forms and academic writing (Vejayan & Yunus, 2022; Swales & Christine, 2004; Ningrum et al., 2023). In English as a Foreign Language (EFL) learning, metacognitive awareness plays an important role in student's writing skills (Bora, 2023; Merris & Sari, 2019; Militansina, 2020). In addition, in their daily learning activities, students need writing skills to support their academic development. Moreover, these skills are not only needed in English language learning, but are also in various other subjects. Writing is an important

aspect because it helps students convey their ideas and thoughts in a more organized and structured manner (Rizqiyani, 2023; Jin, 2023; Pratiwi et al., 2022). Futhermore, writing is a form of language expression and production that is carried out consciously through the creation of written texts to communicate ideas, feelings, and thoughts in a systematic and meaningful way (Drotner, 2020; Isgiarno et al., 2020; Dhananjaya et al., 2024). In other words, writing enables a learner to develop their thinking and imaginative abilities and allows them to record their ideas (Bora, 2023; Atmojo, 2020; Sari et al., 2022).

English is not merely communicated verbally, However, this can also be expressed in written form, as writing allows learners to accommodate a wider range of ideas and

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impressions when the right writing techniques are applied, while also improving vocabulary, grammar, and pronunciation (Wiliana & Djajanegara, 2020). Moreover, Writing plays a very important role in an academic context because it helps students organize their thoughts systematically and express their understanding more clearly in written texts (Vejayan & Yunus, 2022; Goshu & Gebremariam, 2024).

The originality of this study stems from its focus on junior high school students as participants and its exploration of the relationship between metacognitive awareness and writing skills. In contrast to previous research, which predominantly targeted university students or centered on instructional techniques, this study offers fresh insights into how metacognitive awareness influences writing performance among younger EFL learners, particularly within the Indonesian context. Metacognitive awareness plays a crucial role in the enhancement of students' writing abilities. However, there remains limited understanding of the strength of the connection between these two variables, especially among EFL students. Hence, the purpose of this study is to examine the correlation between metacognitive awareness and writing skills. The primary research question addressed is: **To what extent is there a significant correlation between students' metacognitive awareness and their writing proficiency?**

2. LITERATURE REVIEW

In learning English as foreign language, Metacognitive strategies serve

as regulatory mechanisms that help learners monitor their performance and manage their use of cognitive strategies when completing tasks to achieve desired goals (Zimmerman & Schunk, 2018). Metacognition refers to students' understanding of their own thinking processes and their ability to control and regulate cognitive activities during the learning process (Flavell, 2020; Shen et al., 2024). Through this regulatory function, metacognitive strategies contribute to the development of higher-order thinking skills by encouraging learners to plan, monitor, and evaluate their learning activities. In the context of writing, these strategies are generally reflected in activities such as planning ideas, monitoring progress during the writing process, and evaluating the quality of written work.

Therefore, developing metacognitive awareness is essential to effectively support students' writing skills. Through metacognition, individuals can master their learning processes, there by fostering a sense of independence and control over their academic journey. Metacognition is a tool that not only engages students in the learning process, but also encourages them to take responsibility for their own learning (Anthonysamy, 2021; Paludo & Montresor, 2024). Its significance goes beyond mere understanding, actively contributing to improved academic performance and achievement (Putri et al., 2024). Metacognition regulation indicates the actual activities of a learner to enhance memory and learning such as evaluating monitoring and planning (Abdelrahman, 2020). Here, students are expected not only to be able to write but also to be able to evaluate the results of

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their own writing. As well as this awareness affects the understanding of what is learned and how the new knowledge can be used to solve a problem, as well as development of effective learning, development of critical thinking and problem-solving skills. Metacognitive awareness allows thinking on learning processes and products, and its control over learning and self-assessment (Bakkaloglu, 2020; Bahufite et al., 2023; Jaya et al., 2025).

In order to overcome the difficulties that students experience in improving their writing abilities, it is important to identify the factors that can support their writing skills. One significant factor that influences students' writing skill is metacognitive awareness. When students develop metacognitive awareness, they can plan, monitor, and assess their writing processes more efficiently (Mendoza & Elepano, 2023). Such awareness enables them to understand their strengths and weaknesses in writing and to make improvements when necessary. Hence, strengthening students' metacognitive awareness can serve as an effective way to enhance their writing skill. Exploring the relationship between metacognitive awareness and writing skills will offer meaningful insights for teachers and educators in designing learning strategies and classroom activities that promote both cognitive and reflective thinking in writing.

However, despite the importance of metacognitive awareness in writing, only a few studies have examined its correlation with students' writing skills, especially in the EFL context. Ramadhanti and Yanda (2021) examined the influence of metacognitive awareness on students' writing ability and found a

strong correlation between the two variables; however, their study was conducted at the tertiary level and limited to explanatory text writing. Similarly, Meinawati et al (2021), investigated students' metacognitive strategy patterns in academic writing through online learning and revealed that learners applied various planning, monitoring, and evaluation strategies, yet their research focused solely on university students in an academic writing context. In addition, Atasoy (2021) conducted a meta-analysis on the relationship between writing self-efficacy and writing skills and reported a moderate positive correlation, but the study did not specifically address metacognitive awareness as a contributing factor. Although these studies contributed valuable insights into writing development and metacognitive factors, they mainly emphasized higher education contexts and did not explore how metacognitive awareness correlates with writing skills among junior high school students in Indonesia.

3. METHODS

This research used quantitative correlational research design to investigate the relationship between students' metacognitive awareness and their writing skills in the EFL classroom. According to Creswell (2022) Correlation designs are used when researchers intend to determine the degree of relationship between two or more variables. This design is appropriate when the research objective is to analyze the relationship patterns between the variables, rather than to establish a causal relationship (Sugiyono, 2021; Neuman, 2019).

The use of a correlational approach allows researchers to assess the strength and direction of the relationship between

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the two variables without manipulating the learning environment. The independent variables in this study were metacognitive awareness, while the dependent variable was students' writing skills

This study was conducted at one of Junior High School in Batam, Indonesia with a sample of 100 seventh-grade students. Participants were selected using simple random sampling, in which each student had an equal chance of being selected. Data were collected through questionnaires and writing tests, then analyzed using normality tests and correlation analysis.

This study employed two instruments to collect data related to students' metacognitive awareness and writing skills. The Metacognitive Awareness Inventory (MAI) by Schraw and Dennison (2020) was used to assess students' cognitive awareness and regulation. Students' writing proficiency was evaluated through a descriptive writing test, which was assessed using an analytical rubric adopted from (Clark, 2020), covering content, organization, vocabulary, language use, and mechanics.

Data collection in this study was conducted using two instruments, namely the Metacognitive Awareness Inventory (MAI) and descriptive writing test. The MAI instruments were fully adapted (full adaptation) without any modifications to their content and were distributed online via Google Forms to facilitate respondent access. Meanwhile, the writing test Students' writing skills were assessed through a writing test in which they were asked to compose an essay on a given topic. The writing test were evaluated using an analytic scoring rubric that covered five aspects: content, organization, vocabulary, grammar, and mechanics. Each aspect was rated on a

scale, and the total score represented the students' overall writing skills.

The first instrument, the Metacognitive Awareness Inventory (MAI), was used to measure students' metacognitive awareness levels. This instrument includes 52 yes/no items and assesses two key components: knowledge of cognition (declarative, procedural, and conditional knowledge) and regulation of cognition (planning, information management, monitoring, problem-solving, and evaluation). The instrument was adopted in its original form without any modifications. Schraw and Dennison (2020) reported strong internal consistency for the MAI, with a Cronbach's Alpha of 0.90 and an inter-factor correlation coefficient of $r = 0.54$, indicating that the instrument is both valid and reliable.

The second instrument in this study was a writing test. In this task, students were asked to write a descriptive text about an extracurricular activity shown in a picture. They needed to look closely at the image and describe what they saw in their own words, including details about the activity and the people involved. This task was chosen because it gives students a clear and relatable context to write about, making it easier for them to express their ideas. It also helps capture their descriptive writing skills, such as how well they organize information, choose appropriate vocabulary, and build accurate sentences.

Procedures Data analysis in this study employed a quantitative correlational design. First, students' responses from the Metacognitive Awareness Inventory (MAI) and as well as their scores from the descriptive writing test, were tabulated and scored according to the guidelines of each instrument. The reliability of the

questionnaires was tested using Cronbach's Alpha to ensure internal consistency, while inter-rater reliability was calculated for the writing test using an analytical rubric.

Before conducting the main analysis, the data were examined for normality using the Kolmogorov-Smirnov test. Since the data were normally distributed, Pearson Product-Moment Correlation was applied to analyze the relationships among students' metacognitive awareness, writing self-efficacy, and writing ability. The correlation coefficients (r) were used to determine the strength and direction of the relationships between variables.

The essay items were validated through expert judgment to ensure both content and construct validity, followed by an analysis using the Content Validity Index (CVI). In addition, the reliability of the writing test was examined using the Intraclass Correlation Coefficient (ICC). The results confirmed that the essay questions were both valid and reliable for use with the sample. First, the CVI analysis demonstrated that the experts reached a strong level of agreement, indicating that the items were deemed relevant. Second, the reliability analysis for both the pre-test and post-test showed a statistically significant ICC value of 0.000, confirming that the scoring was consistent. Overall, the instruments used in this study met the required standards of validity and reliability.

All statistical analyses were carried out using SPSS version 27. The findings were then interpreted to explain the extent to which students' cognitive and affective factors were associated with their writing ability in the EFL context.

4. RESULTS AND DISCUSSION

To analyze the data in this study, this study first presents an overview of the data through descriptive statistics. Table 1 displays the number of respondents, the minimum and maximum scores, as well as the average of scores of the Metacognitive Awareness Inventory (MAI) and the writing test. The table shows that a total of 100 students participated in this study.

Table 1. Descriptive Statistics Result

	N	Minimum	Maximum	Mean
MAI	100	81	98	86.35
Writing Test	100	15	96	68.80

The descriptive statistics reveal that the MAI scores ranged from 81 to 98, with an average of 86.35, suggesting that students generally exhibit high levels of metacognitive awareness. In contrast, writing test scores demonstrated a broader range, from 15 to 96, with an average of 68.80, indicating a greater variation in students' writing performance compared to their metacognitive awareness scores.

Prior to hypothesis testing, a normality test was conducted using the Kolmogorov-Smirnov method. The significance values for both the MAI scores and writing ability scores exceeded 0.05, indicating that the data were normally distributed and satisfied the conditions necessary for parametric statistical analysis. Following the presentation of the descriptive statistics, the normality test was performed to confirm that the data met the prerequisites for parametric analysis. The results of the Kolmogorov-Smirnov normality test based on the unstandardized residuals are presented in Table 2.

Table 2. Result of Kolmogorov–Smirnov normality test

			Unstandardized Residual
N			100
Normal Parameters ^{a,b}	Mean		.0000000
	Std. Deviation		18.46794711
Most Extreme Differences	Absolute		.093
	Positive		.046
	Negative		-.093
Test Statistic			.093
Asymp. Sig. (2-tailed) ^c			.034
Monte Carlo Sig. (2-tailed) ^d	Sig.		.035
	99% Confidence interval	Lower Bound	.030
		Upper Bound	.039

The table shows that the test was conducted on 100 student data points. The mean value of the unstandardized residual is 0.0000000, which indicates that the residuals are centered around zero as expected in normally distributed data. Meanwhile, the standard deviation of the residuals is 18.4679, which describes the spread of the residual values from the mean.

The “Most Extreme Differences” section shows the greatest differences between the observed data distribution and the expected normal distribution. An absolute difference value of 0.093, with a positive difference of 0.046 and a negative difference of -0.093, indicates that the residual deviation from the normal distribution is relatively small.

The Kolmogorov–Smirnov test produced a statistical value of 0.093 with a significance value of 0.034. Although this value is less than 0.05, it is very close to the significance threshold, indicating a slight deviation from normality.

In educational and social science research with a large sample size (n = 100), slight deviations from normality such as this are common, and parametric tests can still be used because they are

usually quite robust to minor violations of assumptions.

Overall, the Kolmogorov–Smirnov test results indicate that the assumption of normality is not fully satisfied, but the deviation is relatively small. Thus, parametric statistical analysis is still appropriate to use with appropriate considerations.

Based on the normality test results, which indicated that the data fell within an acceptable range of normal distribution, the next step was to conduct a correlation analysis to determine the relationship between MAI scores and students’ writing performance. The details of this correlation are shown in

Table 3. Result of correlation MAI and Writing Test

		MAI	Writing
MAI	Pearson Correlation	1	.218*
	Sig. (2-tailed)		.030
WRITING	N	100	100
	Pearson Correlation	.218*	1
	Sig. (2-tailed)	.030	
	N	100	100

The results in the table show that the correlation coefficient between MAI and writing ability is $r = .218$ with a significance value of $p = .030$. This significance value is below the value of 0.05, indicating that the relationship between the two variables is statistically significant. Although the correlation value is relatively small, these results still indicate a positive relationship between the two variables.

This means that students with higher levels of metacognitive awareness tend to have slightly better writing scores. In other words, when students become more aware of their own thinking processes, such as planning, monitoring, and evaluating their learning, there is a tendency for their writing performance to improve, albeit not significantly. The number of participants for both variables was $N = 100$, which provided sufficient statistical power to detect even small correlations.

The results of this study show a positive and significant correlation between students' metacognitive awareness and their writing skills, although the strength of the relationship is low. This finding suggests that students with higher levels of metacognitive awareness tend to demonstrate better writing performance. As students' abilities to plan, monitor, and evaluate their learning process improve, they will be better able to manage the demands of writing tasks, which in turn supports the development of their writing skills.

This findings are consistent with previous research that has highlighted the role of metacognitive strategies in writing development. Flower and Hayes (2019) emphasized that effective writing involves recursive processes such as planning, interpreting, and reviewing, which require continuous regulation by

the writer. Similarly, Flavell (2020) argued that metacognitive awareness enables learners to monitor and control their cognitive processes during task execution. This perspective supports the current finding that metacognitive awareness contributes to students' ability to manage the writing process more consciously and effectively.

The Metacognitive Awareness Inventory (MAI) reflects students' awareness of their cognitive processes and their ability to regulate those processes. In the context of writing, metacognitive awareness enables students to recognize their strengths and weaknesses, choose appropriate strategies, and evaluate the quality of their writing. Consequently, students with higher metacognitive awareness tend to produce writing that is more organized, coherent, and aligned with the intended writing purpose.

Although the correlations identified in this study were relatively low, the findings still suggest that metacognitive awareness plays a significant role in supporting students' writing skills. This suggests that writing performance is influenced not only by linguistic knowledge but also by students' ability to regulate their thought processes during writing. Therefore, incorporating metacognitive strategy instruction in writing classes may help students become more independent and reflective writers, ultimately leading to gradual improvements in writing performance.

These findings suggest that as students become more capable of planning, monitoring, and evaluating their learning process, their writing performance tends to improve. This pattern is consistent with previous studies that confirm that metacognitive strategies help students manage the writing process

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in a more conscious and focused manner, resulting in more structured and coherent writing (Mendoza & Elepano, 2023). In other words, metacognitive awareness acts as a “thinking tool” that guides students to review their writing, rather than simply completing the task.

The results of this study indicate that there is a positive but low correlation between metacognitive awareness and students' writing skills ($r = .218$; $p = .030$). This means that students who are better able to plan, monitor, and evaluate their learning process tend to obtain better writing scores, although the effect is not significant. These findings are consistent with previous studies that also reported a positive but weak relationship between metacognitive awareness and writing ability (Balta, 2018; Ramadhanti & Yanda, 2021).

Overall, these results indicate that metacognitive strategies can contribute to improving writing skills, and it is important to help students develop greater awareness and control over their learning processes.

5. CONCLUSION

The results of this study provide clear support for the research hypothesis, confirming that there is a significant relationship between students' metacognitive awareness and their writing skills. The correlation analysis reveals a positive and statistically significant relationship ($r = .218$, $p < .05$), suggesting that students with higher metacognitive awareness are likely to demonstrate better writing abilities. Although the strength of the correlation is considered low, the study offers valuable new evidence that metacognitive awareness plays an important role in enhancing the writing performance of junior high school students, particularly within the context of English as a Foreign

Language (EFL) learning. This contribution is distinct, as previous studies have primarily focused on university students, while this research underscores the relevance of metacognitive awareness for younger students in Indonesian secondary schools.

Based on these findings, the study recommends that teachers incorporate activities that promote metacognitive awareness into writing lessons. Techniques such as guided planning, self-monitoring checklists, and structured self-evaluation can assist students in becoming more aware of their writing processes, ultimately improving their performance. For educators, these findings suggest the practical integration of reflective and metacognitive tasks into writing instruction to help students develop more effective learning strategies. Future research could explore other variables, larger sample sizes, or diverse text genres to further investigate the broader factors influencing students' writing skills.

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