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The Correlation between Students' Self-Regulated Learning Strategies and their Writing Ability in Argumentative Writing Class

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ABSTRACT

This study investigates the use of self-regulated learning strategies by students at a public university in Surabaya and examines the relationship between these strategies and their performance in argumentative writing classes. The sample comprised 57 students of both genders, selected through convenience sampling, and representing various academic years. All participants had previously completed an argumentation class. To achieve the study's objectives, the Self-Regulated Learning Questionnaire (WSSRLQ) was adapted to meet the specific needs of the study, and students' argumentative writing scores were analyzed correlationally. The reliability of the questionnaire was confirmed with a Cronbach's alpha of 0.830. Results indicate that metacognitive strategies were the most frequently employed, particularly in guiding planning and improving the quality of writing assignments. Students also utilized cognitive strategies focused on language elements, social-behavioral strategies, and motivational strategies to enhance their writing performance. The study revealed a strong correlation between cognitive strategies and writing performance, a moderate correlation for metacognitive and motivational strategies, and no correlation for social-behavioral strategies. Overall, a weak correlation was observed between self-regulated learning strategies and overall writing abilities.

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1. INTRODUCTION

In college, EFL (English as a Foreign Language) students are required to master various writing styles, including argumentative writing. Crafting an argumentative essay involves writing and discussing a debatable issue, where students must present facts or examples to support their claims and persuade readers of the argument's credibility (Kirszner & Mandell, 2009). Clear evidence is essential in an argumentative essay, as it strengthens the argument and makes it more convincing (Langan, 2008). For college students, particularly in argumentative writing, the strength of their arguments plays a crucial role in the effectiveness of their essays. To ensure that their arguments are convincing, students must clearly articulate their ideas and support them with evidence, making their points more credible and likely to be accepted.

EFL students often face significant challenges in the writing process, particularly in producing well-organized and coherent content (Wragg et al., 2020). These challenges are exacerbated by a lack of practice, limited time, and low motivation, which are often due to the differences between the students' native language and English, affecting their ability to construct written texts effectively (Finn, 2018; Keller et al., 2019). To address these issues, teachers can equip students with effective learning strategies (Lan, 2005).

Self-regulated learning (SRL) strategies are vital in the teaching-learning process, as they enable students to take control of their own education and achieve their learning goals (Zimmerman, 2008). These strategies offer a potential solution to improving students' academic performance by fostering active and effective self-regulation in their learning process. SRL is defined as a process in which students actively and effectively manage their own learning through various strategies, including cognitive, metacognitive, social-behavioral, and motivational approaches (Zimmerman & Schunk, 2011). These aspects are interrelated and function through cyclic feedback, requiring students to take responsibility and self-reflect to enhance their learning outcomes.

By engaging in self-regulated learning, students can improve the quality of their writing by effectively managing and organizing their writing process (Zimmerman & Risemberg, 1997). Students who practice SRL may

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employ a range of techniques to guide their writing, using cognitive, metacognitive, social-behavioral, and motivational strategies to produce higher-quality written work. These strategies help students navigate the complexities of argumentative writing, ultimately leading to better performance and more effective communication of their ideas.

Metacognition is a key component of self-regulated learning (SRL) strategies, enabling students to manage and control their cognitive resources effectively to achieve their learning goals (Oxford, 1990; Oxford, 2017). Rahimirad and Shams (2014) emphasize that metacognitive strategies encompass planning, monitoring, and evaluating learning activities. In the planning phase, metacognitive strategies involve selecting reliable resources before beginning a written task (Teng, 2020). Metacognitive processes also play a crucial role in monitoring and regulating the learning process, where learners become aware of their own errors and take steps to correct them (Oxford, 1990). During the writing process, metacognitive strategies are essential for setting goals, adhering to a plan, and tracking progress. In the evaluation phase, these strategies are applied through editing and revising one's own work, a process integral to self-assessment.

Cognitive strategies, on the other hand, are closely tied to a student's ability to comprehend and process information, which is critical for learning and completing tasks (Gilakjani & Sabouri, 2016; Oxford, 2013). These strategies can be directly applied to improve learning by organizing and integrating information (O'Malley & Chamot, 1990). In the context of writing, cognitive strategies focus on the conceptualization and analysis of specific details related to the text's structure (Oxford, 2017). Moreover, Teng and Zhang (2016) observed that cognitive strategies significantly influence students' writing abilities.

Social-behavioral strategies involve students' efforts to control and guide their behavior in response to external factors during the learning process (Sun & Wang, 2020). According to Yulianti (2018), these strategies include seeking corrections or feedback from peers and teachers, collaborating with classmates, and discussing written tasks with others. Social-behavioral strategies are closely linked to self-regulated learning strategies. By receiving reciprocal feedback, such as comments from teachers and peers, students can enhance their engagement, effort, and understanding of their writing tasks (Teng & Zhang, 2018).

Motivational strategies are another crucial component of self-regulated learning, reflecting students' ability to control their thoughts and emotions while engaging in tasks (Zimmerman, 2008). These strategies focus on managing emotions during the creation of written assignments (Teng, 2020). In the context of self-regulated learning, motivational strategies involve students' awareness of their feelings and emotions to enhance their motivation to achieve their goals. Teng and Zhang (2016) observed that motivational strategies significantly influence students' self-encouragement, their approach to writing tasks, and their ability to manage emotions throughout the writing process.

Several previous studies have reported positive outcomes from the integration of self-regulated learning strategies with writing performance. For instance, Teng and Zhang (2020) conducted a study to examine the relationship between EFL students' writing performance and the implementation of SRL-based writing interventions. Their findings demonstrated that students who received a five-month SRL-based writing instruction intervention showed greater improvement in their post- and delayed post-writing tests compared to the control group. The study also revealed that students who applied SRL strategies were more aware of their learning processes and produced higher-quality writing.

Similarly, Sun and Wang (2020) explored the relationship between writing performance, self-efficacy, and SRL strategies in an EFL context. They found that students who frequently employed SRL strategies during their writing revision and review processes tended to achieve higher writing scores. Additionally, Bai et al. (2022) investigated the impact of a writing strategies-based intervention supported by e-learning tools on the use of SRL in English writing classes. Their results indicated that the intervention significantly improved students' use of all four categories of SRL strategies and increased their interest in English writing, leading to enhanced writing performance.

However, despite these findings, previous research has not extensively explored motivational strategies within the framework of self-regulated learning in academic writing classrooms (Bai et al., 2022; Sun & Wang, 2020; Teng & Zhang, 2020). All aspects of SRL—cognitive, metacognitive, social-behavioral, and motivational—are interrelated through a cyclic feedback loop, where students must self-monitor and self-regulate to achieve effective learning outcomes (Zimmerman & Risemberg, 1997). Therefore, it is essential to explore the complete range of SRL strategies within the context of writing. To address this gap, the present study aims to examine how students utilize self-regulated learning strategies, including motivational, metacognitive, cognitive, and social-

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behavioral approaches, in their writing tasks, and how these strategies correlate with their academic writing performance. It is anticipated that the findings will provide valuable insights into how college students can effectively apply SRL techniques to enhance their writing processes and produce superior written work.

In light of the study's background, the following research questions have been developed:

a. To what extent do college students employ self-regulated learning strategies when writing argumentative essays?
b. Is there a significant correlation between students' success in argumentative writing essays and their use of self-regulated learning strategies?

2. MATERIAL AND METHOD

Research Design

This study employed a quantitative research methodology aimed at describing and evaluating correlations, presenting data in numerical form, and analyzing them using statistical methods. Quantitative research involves gathering information about the world by utilizing and interpreting numerical data (Ary et al., 2014). Specifically, a correlational study design was used to measure the relationship between two variables: self-regulated learning strategies and writing performance.

Research Participants

Participants in this study were selected through convenience sampling, meaning they were chosen based on their availability and willingness to participate (Cohen et al., 2007). The researcher selected participants from classes that were accessible on campus, with specific classes chosen according to the teachers' preferences. The participants consisted of students from the English department at a state university, ranging from the 2016 to 2020 cohorts, all of whom had completed an argumentative writing class. To ensure consistency, the researcher enrolled participants from one class per session, all taught by the same instructor. A total of 57 students responded to the questionnaire. However, due to the use of convenience sampling, the results of this study may not fully represent the entire population.

Research Instruments

This study investigated the Writing Strategies for Self-Regulated Learning Questionnaire (WSSRLQ) utilized by college students during writing and how these strategies relate to their academic writing abilities. To effectively gather data from all participants, the researcher employed an online questionnaire. The WSSRLQ, developed by Teng and Zhang (2016), was specifically designed to assess and measure the strategies students use during the writing process, with a focus on self-regulated learning. This instrument was employed to gauge the frequency with which students applied self-regulated learning (SRL) strategies in their writing tasks. The questionnaire consisted of 40 items, each aligned with one of the four components of SRL: motivational strategies, metacognitive strategies, cognitive strategies, and social-behavioral strategies. Participants responded to each item on a 5-point Likert scale, ranging from 1 (Never) to 5 (Always).

In addition to the questionnaire, the researcher used a writing rubric to assess the students' argumentative writing scores from their argumentative writing class. The rubric, adapted from Brown (2004), evaluated five key areas of the students' written work. The first area, the thesis statement, assessed the clarity and strength of the thesis, emphasizing that a strong thesis should be clear, specific, and debatable. The second area, argument development, focused on how well the students built their arguments, including the use of evidence and reasoning. The organization of the essay was also assessed, determining whether the writing was well-structured and coherent. Additionally, language and style were evaluated to ensure that the language used was appropriate and the style suitable for the essay's purpose. Finally, mechanics were assessed, including grammar, spelling, and punctuation.

The students' writing performance was measured using the following formula:

$$Writing\ score = \frac{\text{Student's score}}{\text{Maximum Score}}\ x\ 100$$

Based on Brown's (2004) classification system, the quality of the students' writing was categorized into five levels: inadequate (21–40), acceptable (21–60), fair to adequate (41–60), sufficient to good (61–80), and outstanding to superb (81–100). These categories provided a structured framework for assessing the overall caliber of the students' writing.

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Data Collection Procedure

data collection process began with the dissemination of the questionnaire, which was shared online via WhatsApp using a Google Form. The researcher requested the teacher to distribute the online questionnaire link within her WhatsApp groups for each class. The students were then given three days to complete the questionnaire. For collecting the students' writing scores, the researcher obtained the argumentative writing scores directly from the teacher. These scores had already been assessed and recorded by the teacher as part of her grading for each class level.

Data Analysis

To ensure the consistency of the questionnaire, the researcher conducted a reliability test using Cronbach's alpha formula. Cronbach's alpha was applied to measure the internal consistency or reliability of the questionnaire, with IBM SPSS 29 used to calculate the reliability coefficient. The Cronbach's alpha value obtained was 0.830, indicating that the questionnaire was reliable, as this value exceeds the commonly accepted threshold of 0.70. Next, the normality of the data was tested using the One-Sample Kolmogorov-Smirnov Test. This test was utilized to determine whether the sample data came from a specific distribution, typically a normal distribution. The results, analyzed using IBM SPSS 29, yielded a p-value of 0.59, indicating that the data followed a normal distribution, as the p-value was higher than the significance level of 0.05. Subsequently, a descriptive analysis was conducted to provide a clear understanding of the data and to set the stage for further inferential analysis. The descriptive analysis focused on determining the central tendencies, such as the mean, median, and standard deviation for each dimension of self-regulated learning (SRL). To explore the relationship between students' writing abilities and their application of self-regulated learning strategies, the researcher employed Pearson correlation analysis. Pearson correlation was used to quantify and test the linear relationship between self-regulated learning strategies and writing ability, offering insights into how these variables are related and whether improvements in one might correspond with changes in the other. The correlation analysis was conducted using IBM SPSS 29.

3. FINDING

Descriptive Statistics of SRL Strategies

Students employed four different types of self-regulated learning strategies in their argumentative writing: metacognitive, cognitive, social-behavioral, and motivational strategies.

Metacognitive Strategies

The study examined students' use of metacognitive strategies to enhance their writing skills, focusing on three key areas: planning and organization, self-assessment, and goal setting. The mean scores for each indicator are summarized in Figure 1.

Among the strategies, students highly valued using the internet to find relevant information before writing, which received the highest mean score of 4.48. Adhering to a schedule had a mean score of 4.32, while researching relevant articles scored 4.29. Considering composition fundamentals also scored highly, with a mean of 4.21. These results underscore the importance of effective planning and organization in the writing process.
In terms of self-assessment, the strategy of assessing proficiency with acquired information and abilities had a mean score of 4.20, indicating that students actively evaluate their skills. Monitoring progress to ensure objectives are met scored 4.19, reflecting the significance of self-assessment in their writing process. Additionally, setting learning objectives to improve writing skills had a mean score of 4.16, and making personal goals to focus learning efforts scored 4.11. Keeping track of progress in writing classes was also a common strategy, with a mean score of 4.10. These strategies highlight students' commitment to continuous improvement through clear goal setting and progress tracking.

The overall mean score for all metacognitive strategies was 4.23, suggesting that students frequently employ a variety of cognitive strategies to enhance their writing skills. Emphasizing planning and organization, self-assessment, and goal setting can further support students in developing strong writing abilities. These strategies reflect a comprehensive approach to improving writing proficiency, ensuring that students remain focused, organized, and committed to their writing development.

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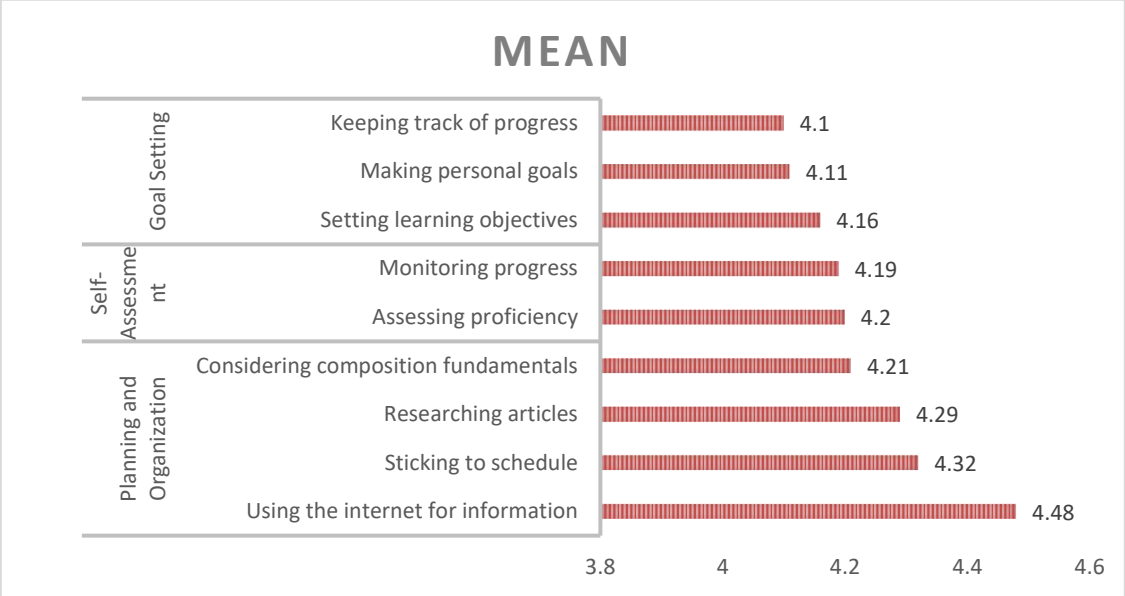

Figure 1. Student's Metacognitive Strategies

The results revealed that the strategy with the highest mean was item number 11, with a mean score of 4.56. Additionally, another frequently used strategy was following their plans while constructing written text, as indicated by item number 17, which had a mean score of 4.35. These strategies are part of the metacognitive monitoring phase, highlighting students' active engagement in overseeing and guiding their writing process.

Cognitive Strategies

The study explored students' use of cognitive strategies to enhance their writing skills, focusing on four key areas: proofreading, clarity and structure, retention and recall, and creativity. The mean scores for each indicator are summarized in Figure 2.

Students demonstrated a strong emphasis on accuracy in their writing, particularly in the area of proofreading. The highest mean scores were observed in this category, with proofreading for grammar achieving a mean score of 4.45, indicating that students place a high priority on grammatical correctness. Proofreading for spelling and punctuation also scored highly, with a mean of 4.42, reflecting students' focus on ensuring their writing is free from errors in spelling and punctuation. Clarity and structure were also significant concerns for students. Ensuring that the subject and information are clearly presented received a mean score of 4.38. Maintaining a logical framework within their writing scored 4.37, and ensuring that sentences flow well together followed with a mean score of 4.34. These scores suggest that students are attentive to the coherence and organization of their writing, striving to make their ideas clear and logically structured.

Retention and recall strategies showed a consistent emphasis among students. Jotting down practical terms and phrases had a mean score of 4.30, indicating that students actively note important terms to aid memory retention. Reviewing course content and notes scored 4.25, highlighting their efforts to revisit and consolidate what they have learned. Pronouncing important terms and idioms aloud, which scored 4.20, reflects an additional strategy used by students to reinforce their understanding and recall of key concepts. Creativity in writing was also highly valued by students, as indicated by the mean score of 4.24 for employing literary methods to add interest and intrigue to their work. Adding creative elements to their writing also received a mean score of 4.24, showing that students recognize and appreciate the role of creativity in enhancing the appeal and effectiveness of their writing.

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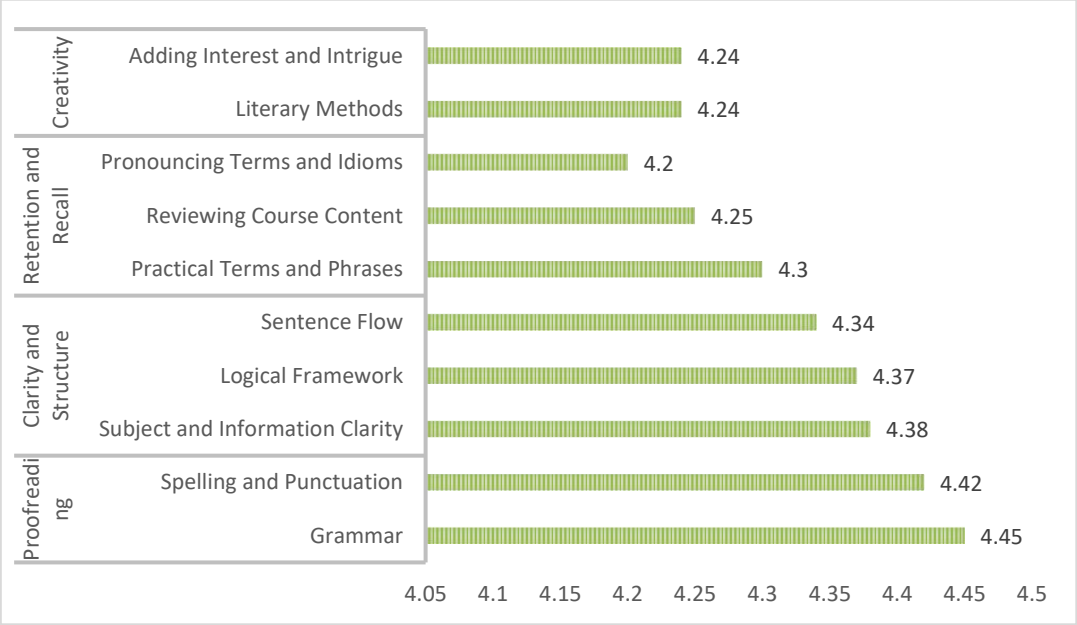

Figure 2: Students' Cognitive Strategies

Social-Behavioral Strategies

Students demonstrated a strong preference for receiving feedback from their teachers, with listening to teachers earning the highest mean score of 4.66, underscoring its significant value among students. Closely following this was the use of teachers' feedback, which had a mean score of 4.63, highlighting the importance students place on incorporating their teachers' input to improve their writing. These high scores reflect the crucial role that teacher guidance and feedback play in the students' writing development process (Figure 3).

Tto valuing teacher feedback, students also exhibited a positive attitude toward peer feedback. Accepting peer criticism received a mean score of 4.08, indicating their openness to constructive feedback from classmates. The use of peer feedback to improve their writing scored 4.07, suggesting that students actively incorporate peer comments to enhance their writing skills. These results indicate that peer interactions are valued and effectively utilized to improve writing quality.

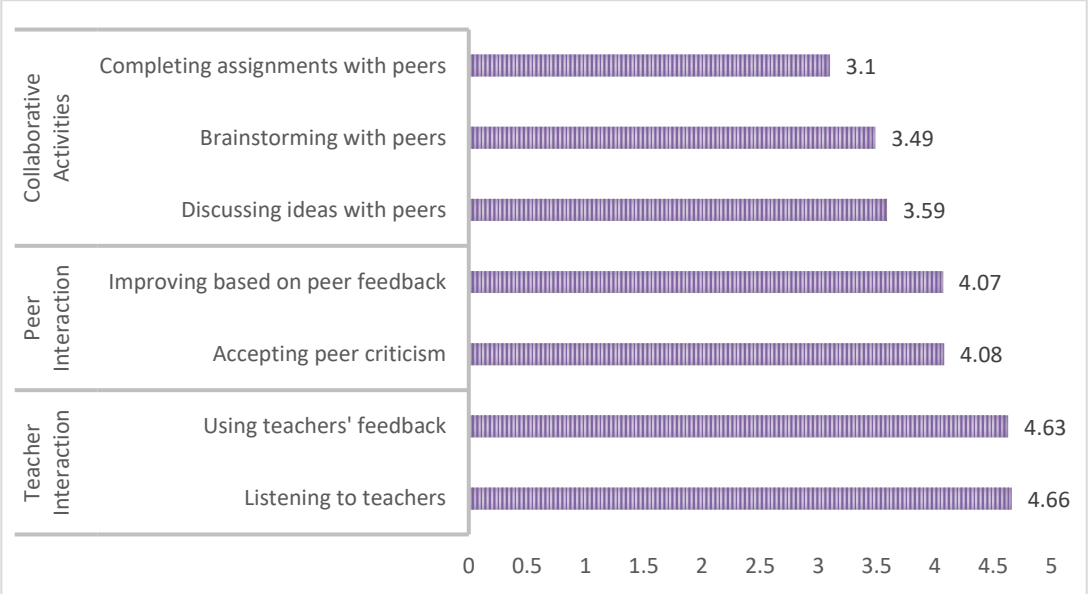

Figure 3. Students' Social-Behavioral Strategies

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However, indicators related to collaborative activities showed moderate to lower engagement. Discussing ideas with peers had a mean score of 3.59, suggesting occasional interaction for writing inspiration. Brainstorming with peers scored 3.49, indicating that while collaborative brainstorming does occur, it is not a dominant strategy. Completing assignments with peers received the lowest mean score of 3.10, suggesting that collaborative completion of writing tasks is relatively uncommon among students.

The overall results indicate that students highly value teacher feedback and are open to peer feedback, actively using it for constructive criticism and improvement. However, collaborative peer activities, such as brainstorming and completing assignments together, are less frequently utilized. This suggests a potential area for further development, where encouraging more collaborative peer activities could further enhance students' social-behavioral strategies and contribute to their overall writing proficiency. Emphasizing both teacher feedback and peer interactions can create a more balanced and comprehensive approach to developing students' writing skills.

The overall mean score for all indicators was 3.88, reflecting a generally positive engagement in social-behavioral strategies to improve writing skills. The data suggest that while students highly value and rely on teacher feedback, they also engage positively, though somewhat less intensely, with peer interactions for writing improvement. The lower scores in peer collaboration activities, such as brainstorming and completing assignments, indicate potential areas for further development to enhance collaborative learning environments. These findings underscore the importance of fostering both teacher-student and peer-to-peer interactions to support comprehensive writing development. Encouraging more collaborative peer activities could further enhance students' social-behavioral strategies and contribute to their overall writing proficiency.

Motivational Strategies

The study investigated students' use of motivational strategies to improve their writing skills, focusing on four key areas: personal motivation, engagement and enjoyment, effort and improvement, and application and practice. The mean scores for each indicator are summarized in Figure 4.

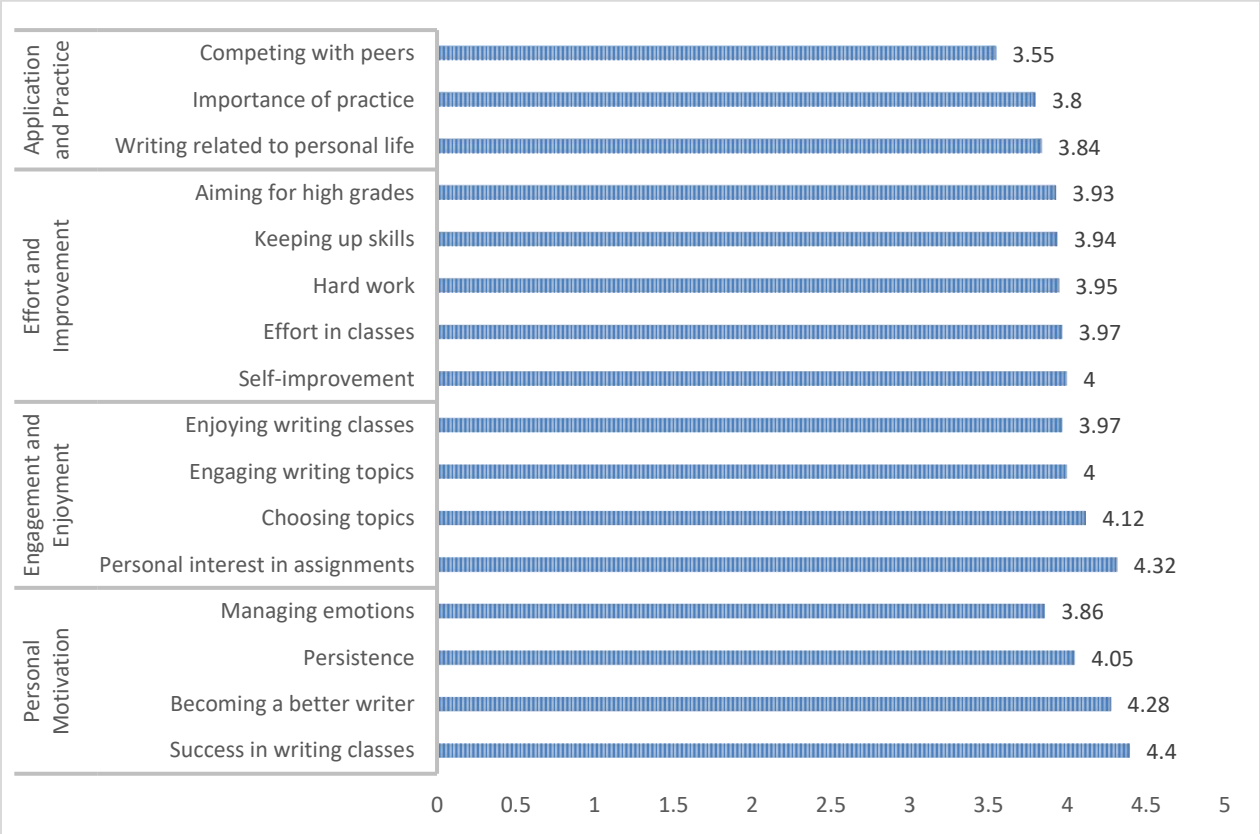

Figure 4. Students' Motivational Strategies

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Students exhibited a strong focus on success in their writing classes, with the highest mean score of 4.40. This reflects their dedication to excelling in their writing tasks. A commitment to becoming better writers also scored highly, with a mean of 4.28. Persistence in writing was evident, with a mean score of 4.05, while managing emotions, a critical aspect of maintaining a positive attitude toward writing, scored 3.86. In the area of engagement and enjoyment, students related their assignments to personal interests, which received a high mean score of 4.32. Selecting interesting topics had a mean score of 4.12, and finding engaging writing topics scored 4.00. Enjoying writing classes was also notable, with a mean score of 3.97, indicating that students generally find pleasure in their writing activities. Effort and improvement were also key aspects of students' motivational strategies. Self-improvement through writing scored 4.00, while effort in writing classes had a mean score of 3.97. Hard work in these classes was slightly lower, with a mean score of 3.95, and keeping up with writing skills had a mean of 3.94. Aiming for high grades, which reflects students' dedication to achieving good results, scored 3.93.

In terms of application and practice, relating writing to personal life had a mean score of 3.84, and recognizing the importance of practice scored 3.80. Competing with peers had the lowest mean score of 3.55, suggesting that competitive motivation is less influential among students. The overall mean score for all motivational strategies was 3.96, indicating that students generally possess a positive and proactive attitude towards improving their writing skills. Emphasizing personal interest, continuous improvement, and the relevance of writing tasks to real-life experiences could further enhance students' motivation and engagement in writing activities.

The Correlation between Students' Writing Performance and Self-Regulated Learning Strategies

In order to analyze the relation between students' writing abilities and their SRL, the Pearson correlation is used in this study, as the result:

Table 1. Person Correlation of Students writing performance and SRL strategies

Strategies	Pearson Correlation	Sig. (2-tailed)	N
Metacognitive	.238	.075	57
Cognitive	.345	.009	57
Social-behavioral	.060	.658	57
Motivation	.274	.039	57
Total Mean	.262	.049	57

The correlation above indicates that the significants of overall score means or p-value of students' writing Performance and self-regulated learning strategies was 0.049 which it indicated that there was a correlation between SRL and the students' writing performance. Moreover, based on the Pearson Correlation Coefficient showed 0.262 mean where it indicated there is a weak correlation between students' self' regulated learning strategies and their writing performance.

Table 2. Interpretation of Product Moment Score

Coefisient of Correlation"r"	Interpretation
0.00 - 0.20	The Correlation is Neglected
0.20 - 0.40	The Correlation is Weak
0.40 - 0.70	The Correlation is Strong Enough
0.70 - 0.90	The Correlation is Strong
0.90 - 1.00	The Correlation Is Very Strong
Burns (1984)	

For each dimension, only social-behavioral has no correlation with the students writing performance because it has p-value.658 which bigger than 0.05 and the Pearson Correlation Coefficient showed 0.060 which means neglected. Metacognitive strategies also has no correlation with students writing performance because the p-value was .075 which higher than 0.05 and the Pearson Correlation Coefficient showed 0.238 which means neglected. The other dimension such as cognitive strategies has correlation because the p-value was 0.009 which is lower than 0.05 and Pearson Correlation Coefficient showed 0.345 which means weak correlation and

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motivation has also correlate with the students writing performance where the p-value was .049 lower than 0.05 and Pearson Correlation Coefficient showed 0.262 which means weak correlation.

The Writing Performance Distribution

Students' writing performance was assessed based on their scores in an argumentative writing task. The distribution of these scores is illustrated in Chart 5.

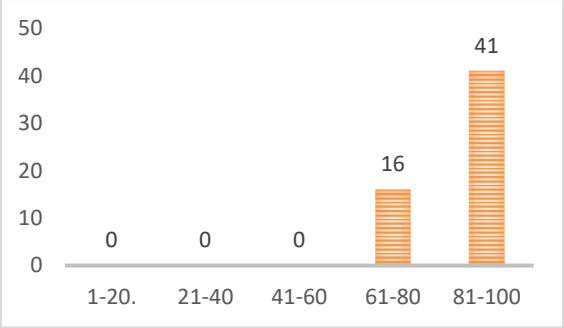

Chart 5. Writing Scores

The chart reveals the following distribution of scores: No students received a score between 1 and 20, a range classified as "not college level." Similarly, no students obtained a score in the range of 21 to 40, which is considered "unacceptable." Additionally, no students fell within the 41 to 60 range, categorized as "fair to adequate." A total of 16 students received scores between 61 and 80, which places them in the "adequate to good" category. The majority of students, 41 in total, received scores between 81 and 100, indicating a performance level categorized as "good to excellent."

4. DISCUSSION

Extent of Self-Regulated Learning Mechanisms Employed by College Students

Metacognitive Strategies

The ability of students to apply self-control and manage their cognitive resources to meet learning objectives is central to the process of employing metacognitive strategies (Oxford, 1990; Oxford, 2017). This study categorized metacognitive strategies into three main aspects: planning and organization, self-assessment, and goal setting. These aspects align with the work of Rahimirad and Shams (2014), who emphasize that metacognitive strategies include organizing, monitoring, and assessing learning activities. Metacognitive strategies involve students' awareness and control over their own learning processes. Coined by John Flavell in the 1970s, metacognition refers to "thinking about thinking," encompassing the self-regulation of cognition through planning, monitoring, and evaluating. The importance of metacognitive awareness in enhancing academic performance has been highlighted by Teng (2018) and Zimmerman (2002), who stress the need for self-monitoring and reflection in the learning process. These strategies are crucial for students to minimize errors and improve their overall learning outcomes.

In the planning and organization phase, this study found that the highest mean score was for the item "using the internet to find pertinent information" (M = 4.56). This indicates that students frequently utilize the internet to prepare before writing. Additionally, students tend to adhere to schedules and research relevant articles. These strategies underscore the significance of effective planning and organization in the writing process, serving as a guide to help students produce better-written work. This finding is consistent with Teng (2020), who noted that in the planning stage, metacognitive strategies involve selecting reliable resources before creating a written assignment. The internet serves as a valuable resource for students to deepen their understanding and enhance their performance.

In the self-assessment phase of metacognitive strategies, the highest mean score indicated that students often assess their proficiency with the information and skills they have acquired. This suggests that students actively evaluate their abilities. Monitoring progress to achieve their goals was the second most used strategy in this phase. These strategies highlight the importance of self-assessment in the writing process. Teng (2020) demonstrated that students typically follow their strategies and monitor their writing progress as they develop their written content. This phase involves learners' awareness of their mistakes and efforts to correct them (Oxford, 1990). Some students also described their experience with metacognitive strategies in the additional

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comments section, mentioning that they use a checklist to monitor their writing progress. For instance, they created a detailed checklist of key elements, such as thesis statement clarity and argument coherence, and reviewed their work against this checklist after each drafting session, making necessary revisions.

The final phase is goal setting. In this phase, students preferred to set clear learning objectives to improve their writing, followed by setting personal goals and tracking their progress. These strategies reflect students' commitment to continuous improvement through goal setting and progress tracking. Gotcu (2017) suggested that this phase involves reconsidering the written text in terms of general and specific writing features after the writing process is complete. Additionally, students are encouraged to engage in self-editing during this phase to identify and correct their mistakes, further refining their writing tasks.

Cognitive Strategies

Cognitive strategies encompass nine items that are strongly related to a student's ability to understand, gather, and use knowledge to aid in their learning process and task completion (Gilakjani & Sabouri, 2016; Oxford, 2013). These strategies involve mental processes that help learners encode, store, and retrieve information effectively, ultimately enhancing understanding and memory. Cognitive strategies also play a crucial role in helping students manage information, improve retention, and facilitate a deeper understanding of content.

This study categorized cognitive strategies into four main areas: proofreading, clarity and structure, retention and recall, and creativity. In the area of proofreading, students demonstrated a strong focus on accuracy in their writing. They prioritized proofreading for grammar, which indicates that they place a high value on grammatical correctness. Proofreading for spelling and punctuation followed closely, reflecting their emphasis on ensuring their writing is free from errors. Clarity and structure were also important to students. They focused on ensuring that the subject matter and information in their writing were clear, maintaining a logical framework, and making sure that sentences flowed well together. These practices suggest that students are attentive to the coherence and organization of their writing, striving to make their ideas clear and logically structured.

Retention and recall strategies were consistently emphasized. Students frequently recorded practical terms and phrases, indicating that they actively note important terms to aid memory. Reviewing course content and notes was another common strategy, highlighting their commitment to revisiting and consolidating their learning. Additionally, pronouncing important terms and idioms aloud was used as a strategy to reinforce their understanding and recall of key concepts. Creativity in writing was also valued by students. They employed literary methods to add interest and intrigue to their work, as well as incorporating creative elements into their writing. This phase of cognitive strategies helped students appreciate the role of creativity in enhancing the quality and appeal of their writing.

Summarizing the phases within these strategies, it can be concluded that students focus primarily on checking grammar, spelling, and maintaining a logical framework to ensure consistency in their written work. This finding aligns with Oxford (2017), who indicated that cognitive strategies in writing involve conceptualizing and analyzing detailed information related to the text's structure. This study also supports the information processing theory, which suggests that cognitive strategies are mechanisms for processing and organizing information. According to schema theory, developed by Bartlett, cognitive structures help individuals organize and interpret information based on prior knowledge and experience. Therefore, many students focus on checking grammar and punctuation because they are concerned with the quality of their writing product, relying on their prior knowledge of grammar to do so. This study is in tune with Teng and Zhang's (2016) claim that students' writing abilities are influenced by cognitive strategies. This influence stems from the students' development of foundational knowledge in writing and language proficiency. Schunk (2003) and Pintrich (2000) both emphasize the effectiveness of cognitive strategies, such as elaboration and organization, in improving learning outcomes, agreeing that these strategies significantly enhance students' writing performance.

Social-Behavioral Strategies

Social-behavioral strategies, comprising seven items in this study, refer to students' efforts to control and guide their behavior while learning in response to external factors (Sun & Wang, 2020). These strategies involve interactions with others and self-regulation of behaviors that support learning, drawing on principles from social learning and behaviorist theories.

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In this study, social-behavioral strategies were divided into three phases. The first phase, **Teacher Interaction**, revealed that students showed a strong preference for feedback from teachers and actively listened to their suggestions or critiques. The findings suggest that students are highly receptive to teacher feedback on their writing, often incorporating it into their revisions. This phase underscores the critical role that teacher guidance and feedback play in the development of students' writing skills. The second phase, **Peer Interaction**, highlighted students' positive attitudes toward peer feedback. They demonstrated a willingness to accept peer criticism and showed openness to constructive feedback from classmates. This phase emphasizes that students' writing improved through peer feedback, with students actively using peer comments to enhance their writing skills. These interactions indicate that peer feedback is valued and effectively utilized to improve the quality of their writing. This finding aligns with Bandura's Social Learning Theory, which emphasizes learning through observation, imitation, and modeling. Students acquire behaviors by observing others and receiving feedback, which enhances their learning outcomes. The third phase, **Collaborative Activities**, explored how social-behavioral strategies help students gain knowledge and skills through collaboration, thereby improving both learning outcomes and interpersonal skills. In this phase, students occasionally discussed ideas with peers, indicating some interaction for writing inspiration. They also engaged in brainstorming sessions, though the collaborative completion of writing tasks was less common. These findings suggest that while students value collaboration, it is not always a predominant part of their writing process.

Overall, the results indicate that students highly value teacher feedback and actively engage with peers for constructive criticism and improvement. This reflects the idea that students can enhance their written assignments through both instructor criticism and peer interaction. The study demonstrates that the majority of students typically receive feedback on their written work from teachers and peers, leading to better final products. This finding is supported by cooperative learning theory, which advocates for techniques like group work and peer tutoring that leverage social interaction to enhance learning. Vygotsky's Social Development Theory (1978) further emphasizes the role of social interaction and cultural context in cognitive development, highlighting the importance of social support in learning.

In their responses, some students elaborated on their experiences with social-behavioral strategies. For example, one student mentioned, "I worked on a group writing project where we had regular meetings to discuss our writing. My group members were great at giving feedback and suggesting new angles for our writing product. This collaboration really improved the quality of our work." This response illustrates the positive impact of collaborative efforts on the writing process.

These findings are consistent with Yulianti (2018), who stated that requesting corrections or feedback from teachers, collaborating with peers, and discussing written tasks are integral aspects of social strategies. Social-behavioral methods are closely related to self-regulated learning strategies. The reciprocity demonstrated by teachers and peers can enhance students' engagement, efforts, and understanding of their writing tasks (Teng & Zhang, 2018). This is further supported by another student's comment in the questionnaire, where they mentioned sharing drafts with friends and asking for their input. The feedback they received helped them identify gaps and strengthen their arguments. Both Bandura (1986) and Teng (2018) highlighted the significant role of social interactions and peer feedback in enhancing learning, with Bandura's Social Learning Theory supporting the idea that observational learning and peer feedback contribute substantially to learning.

Motivational Strategies

Motivational strategies, comprising fifteen aspects, play a crucial role in how students manage their thoughts and emotions to engage effectively in their writing tasks (Zimmerman, 2008). These strategies are designed to enhance both intrinsic and extrinsic motivation, helping students to stay engaged, overcome challenges, and achieve their learning goals by addressing both the emotional and cognitive aspects of motivation. This study categorized motivational strategies into four main areas. The first area, **Personal Motivation**, focuses on students' commitment to success in writing classes, their determination to become better writers, their persistence in writing, and their ability to manage emotions. This area highlights the efforts students make to maintain a positive attitude, reminding themselves of the importance of achieving good grades in their writing classes.

The second area, **Engagement and Enjoyment**, emphasizes students' interest in their assignments. Students who relate their personal interests to their writing tasks tend to perform better. They choose topics

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that engage them and find pleasure in the writing process. This enjoyment of writing activities suggests that students are able to connect their personal interests with their academic tasks, which enhances their motivation. Motivational strategies in writing also focus on managing emotions during the creation of written assignments (Teng, 2020). Students motivate themselves by recognizing the importance of achieving good scores and by connecting their personal interests to their writing tasks. Motivation increases when students feel they have control over their learning, believe in their capabilities, and feel connected to others. The third area, **Effort and Improvement**, reflects students' dedication to self-improvement as they work on their assignments. They demonstrate hard work in their writing tasks and consistently strive to improve their writing skills, aiming to achieve high grades. This dedication to improvement indicates a strong commitment to achieving good results. The fourth area, **Application and Practice**, shows that students recognize the importance of practice in honing their writing skills, though they are less motivated by competition with peers. This suggests that competitive motivation is less prevalent among students, who instead focus on personal growth and mastery of writing skills. The overall mean score for all indicators suggests that students generally possess a positive and proactive attitude towards enhancing their writing skills. By emphasizing personal interest, continuous improvement, and the relevance of writing tasks to real-life experiences, students can further bolster their motivation and engagement in writing activities.

The findings also reveal that students often persuade themselves that putting in substantial effort during the writing process will enhance their writing expertise. This outcome aligns with the conclusions of Teng & Zhang (2016), who found that students' self-encouragement was influenced by motivational strategies, particularly in terms of their approach to writing tasks and their capacity for self-control during the composition process. It is widely recognized that employing motivational strategies helps students foster self-encouragement towards their assigned work, making them more driven and confident in completing the assignment.

This is further supported by students' responses in the additional comments section. One student stated, "I commonly set specific goals for my writing assignments by creating clear deadlines. Having these clear goals kept me on track and made the whole process less overwhelming." Another student mentioned, "To maintain my motivation in writing, I usually set a goal-setting app to break my writing task into smaller, manageable goals. I set goals for drafting, editing, and reviewing, which helped me stay focused and motivated throughout the writing task." These reflections highlight the importance of goal-setting and intrinsic motivation in sustaining engagement and improving performance, as also noted by Deci & Ryan (2000) and Pintrich (2000).

Correlation between SRL Strategies and Writing Performance

The findings from this study indicate a weak correlation between students' self-regulated learning (SRL) strategies and their writing performance. Within the context of writing, SRL strategies assist students in managing and controlling their learning processes. SRL can be seen as a support system that enhances the quality of writing outcomes by encouraging students to take charge of their writing process through the use of various strategies—cognitive, metacognitive, social-behavioral, and motivational. These strategies collectively help students produce superior written work and develop a deeper understanding of the content (Zimmerman & Risemberg, 1997). Furthermore, Novriyani et al. (2018) found that SRL not only improved students' writing abilities but also promoted their capacity to select appropriate strategies for specific tasks. This is consistent with Rochmah (2017), who reported a moderate effect of SRL on students' writing performance, although this study found no correlation between motivational strategies and writing performance, which differs from previous findings. Additionally, Sartika (2017) demonstrated that students taught using SRL strategies produced better writing outcomes than those who were not.

In this study, cognitive strategies showed a weak correlation with students' writing performance. Cognitive strategies may influence students' writing abilities by helping them analyze and structure their texts in detail (Oxford, 2017; Teng & Zhang, 2016). These mental techniques can impact students' writing scores by enhancing their background knowledge and linguistic mastery, which in turn improves their engagement and writing performance (Teng & Zhang, 2016). Novriyani et al. (2018) also found that students who applied SRL strategies in their writing activities particularly improved their grammar.

Motivational strategies also revealed a weak correlation with writing performance. These strategies involve managing students' emotions while they create written assignments (Teng, 2020). By applying motivational strategies, students become more aware of their emotions, which can enhance their motivation to

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complete writing tasks. Teng & Zhang (2016) further reported that motivational strategies influenced students' self-encouragement and emotional control throughout the writing process.

However, this study found no correlation between students' writing performance and metacognitive strategies. Metacognitive strategies are related to students' ability to regulate and control their cognitive resources during the writing process (Oxford, 1990; Oxford, 2017). These strategies encompass planning, monitoring, and evaluating learning activities (Rahimirad & Shams, 2014), allowing students to organize, oversee, and assess their writing assignments. Despite this, the lack of correlation in this study suggests that the effectiveness of metacognitive strategies may vary depending on factors such as task complexity, measurement methodologies, individual differences, and the educational context. Recognizing these nuances helps explain why metacognitive strategies may not always show a straightforward correlation with writing abilities in empirical research and educational practice.

Additionally, the findings revealed no correlation between social-behavioral strategies and students' writing performance. This suggests that social-behavioral strategies did not significantly impact the students' writing process. The limited impact of social-behavioral strategies may be attributed to their influence on environmental aspects rather than directly on writing performance. Pintrich et al. (1993) found that social strategies, such as peer and self-learning, were not significantly related to students' course grades. Similarly, Teng & Zhang (2018) reported that social-behavioral interventions did not play a discernible role in improving students' writing abilities. A plausible explanation for this finding could be that the role of social-behavioral strategies is to help students utilize their social environment to sustain and enhance learning efforts, which may not directly translate to improved performance on writing tasks (Zimmerman & Risemberg, 1997).

5. CONCLUSION

This study aimed to deepen the understanding of how students in argumentative writing classes self-regulate their learning and how these methods relate to their writing performance. The findings revealed that students predominantly employed metacognitive strategies (M=4.09), focusing on following their plans and checking their writing process, using these plans as guidance to produce better outcomes. Motivational strategies (M=4.07) were also significant, with students convincing themselves that investing considerable effort in the writing process would enhance their expertise and skills. Cognitive strategies (M=4.02) followed, where students concentrated on the specifics of their assignments, such as structure, language, and spelling, to improve their performance. Social-behavioral strategies (M=3.88) were the least utilized, yet they played a role in enhancing engagement and understanding through reciprocal feedback from teachers and peers. Despite the weak correlations found between writing performance and self-regulated learning (SRL) strategies, particularly cognitive (r=.345) and motivational (r=.274) strategies, the study suggests that SRL strategies can still benefit the writing process by helping students produce better outcomes. Teachers are encouraged to incorporate SRL strategies into their instructional practices, including metacognitive, cognitive, social-behavioral, and motivational strategies, to foster student autonomy, self-regulation, and success in writing. For example, teachers can guide students in setting goals, monitoring progress, and reflecting on their learning, teach effective cognitive strategies like summarization and organization, create collaborative learning environments for social-behavioral engagement, and support intrinsic motivation by offering choices and providing meaningful feedback. By integrating SRL strategies, educators can empower students to take ownership of their learning, improve their writing performance, and develop lifelong skills, thereby enhancing motivation, engagement, and achievement, while also preparing them to navigate future academic challenges effectively.

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