The Correlation Between Self-Regulated Learning Strategies in Writing and Senior High School Students' Writing Performance

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Abstract

The objectives of the research were to identify the components of self-regulated learning (SRL) strategies used by high school students in writing performance and to investigate the correlation between self-regulated learning strategies in writing and students' writing performance among senior high school students. The study employed a quantitative correlational design, with data collected from 126 tenthgrade students who were selected using convenience sampling. To examine students' writing strategies, the researchers utilized the Writing Strategies for Self-Regulated Learning Questionnaire (WSSRLQ). The instrument demonstrated a high level of internal consistency, as indicated by Cronbach's alpha coefficient of 0.895. Descriptive statistical analysis revealed that students primarily employed metacognitive and cognitive strategies at a high level, while social-behavioral and motivational strategies were used to a moderate extent. A very strong positive correlation was found (Spearman's ρ = .849, p < .01) with motivational strategies showing the strongest correlation among the other components. In conclusion, the findings confirm a very strong and significant correlation between SRL strategies and students' writing performance, with motivational strategies showing the strongest correlation. These findings highlight the importance of integrating SRL focused instruction into EFL writing pedagogy to improve student engagement, autonomy, and writing proficiency. This result contributes to future academic inquiry by offering a basis for further exploration of SRL strategies in diverse EFL writing contexts.

Keywords: EFL Writing, Self-Regulated Learning Strategies; Writing Performance

INTRODUCTION

Writing is a complex and essential skill in second language acquisition, integral to academic success and lifelong learning (Kirszner, 2018). Students are required to synthesize concepts, draft and revise compositions, and achieve coherence and clarity through critical thinking at each stage of the writing process. Writing is a fundamental academic skill that requires students to convey ideas in a logical, coherent, and grammatically accurate manner (Oshima & Hogue, 2007). It involves the integration of several key components, including a clear central idea, organized structure, relevant supporting details, precise word choice, and mechanical accuracy (Wilbers, 2007). Together, these elements underscore writing as a complex cognitive process that reflects both linguistic competence and critical reasoning. Mastery of these elements supports senior high school students in crafting impactful and cohesive written communication.

Because of variations in language and culture, as well as how complicated English writing rules are, EFL students typically have trouble writing. Many EFL learners struggle with generating ideas, organizing content, sustaining motivation, and applying appropriate syntactic and lexical forms (Qin & Zhang, 2019). To overcome these challenges,

learners should use effective learning strategies, such as Self-Regulated Learning (SRL), which enhances writing performance and autonomy (Zimmerman, 2002). Guo et al. (2018) demonstrated that SRL is a significant predictor of students' academic performance, particularly in writing. Improving cognitive, metacognitive, social, and motivational strategies can help students learn on their own, which can lead to better writing skills and quality (Oxford, 2013; Schunk, 2011; Teng & Zhang, 2016).

Cognitive strategies help them process texts and remember what they've learned, which is useful when organizing grammar, vocabulary, and other writing elements (Teng & Zhang, 2016). Metacognitive strategies allow students to plan and monitor their thinking, helping them express ideas more clearly and produce grammatically accurate writing (Oxford, 2013). Social-behavioral strategies involve connecting with others, like asking for feedback or discussing assignments, which can improve their writing through interaction (Sun & Wang, 2020). Meanwhile, motivational strategies help students stay emotionally steady and focused, encouraging them to keep going even when writing becomes challenging (Schunk, 2011; Teng & Zhang, 2016)

Recent studies have consistently highlighted the crucial role of self-regulated learning (SRL) in enhancing students' writing performance across various educational contexts. While previous studies have predominantly focused on tertiary learners (Amalia et al., 2023; Booth Olson et al., 2023; Umamah & Cahyono, 2020) using various research designs such as quasi-experimental, mixed-methods, and correlational approaches, their emphasis has largely been on addressing difficulties in argumentative and expository writing. Booth Olson et al. (2023) further demonstrated that explicit instruction in cognitive strategies substantially enhanced students' argumentative writing, underscoring the effectiveness of structured SRL-based interventions. In contrast, recent studies involving younger learners have primarily examined SRL from a motivational perspective (Bai et al., 2022; Shen & Bai, 2024). Nevertheless, limited research has explored how SRL strategies relate to writing performance among senior high school students, leaving an important gap that the present study aims to fill.

Bai et al. (2022) and Shen & Bai (2024), looked into how motivation and self-regulated learning (SRL) worked for primary school students in Hong Kong. These studies employed mixed-method designs combining quantitative surveys with qualitative interviews. However, Despite the growing body of SRL research, empirical evidence on how secondary EFL students regulate their writing processes remains scarce, particularly in Asian contexts where writing instruction often emphasizes product over process. High school students, who are still developing foundational academic writing skills, face distinct challenges such as limited exposure to advanced writing strategies and low writing motivation (Guo et al., 2018). There is limited evidence exploring the correlation between SRL strategies and writing performance among this population.

Accordingly, this study aims to identify the SRL strategy components, specifically cognitive, metacognitive, social-behavioral, and motivational which employed by senior high school students in their writing and to examine their correlation with writing performance. By focusing on an underrepresented population, this research extends existing SRL literature that has predominantly centered on university students. Particularly, the study addresses two questions: (1) What SRL strategy components do senior high school students employ in writing? and (2) Is there any correlation between EFL students' self-regulated learning strategies in writing and their writing performance? The novelty of this study lies in its focus on senior high school students, a population that

has received limited attention in previous SRL and writing research, which has largely centered on university students. By filling this gap, the study contributes new insights into how SRL strategies contribute to more effective pedagogical practices and promote independent, skillful writers at the secondary level.

METHOD

This study employed a quantitative correlational research design to examine the relationship between self-regulated learning (SRL) strategies and writing performance among senior high school students. According to Creswell (2012), correlational designs use statistical tests to assess the link between two or more variables, allowing for a better understanding of students' SRL strategies in relation to writing performance. The participants comprised 126 tenth-grade students (aged 15–16 years) from a public high school in Central Surabaya, including 64 females and 62 males, selected through convenience sampling due to accessibility, which is acknowledged as a limitation. Data were collected using the Writing Strategies for Self-Regulated Learning Questionnaire adapt by Teng & Zhang (2016), which measures cognitive, metacognitive, social-behavioral, and motivational strategies. The 40-item questionnaire employed a 5-point Likert scale ranging from 1 ("Never") to 5 ("Always"), where 5 indicates consistent use of the strategy and lower scores indicate less frequent use. The instrument was translated into Indonesian and pilot-tested for linguistic and cultural appropriateness. Students' writing performance was assessed through analytical exposition texts using a rubric evaluating content, organization, language use, and mechanics, with scores assigned by the English teacher to ensure consistency.

To ensure the quality and appropriateness of the research instruments, content validity was assessed by an expert in language education, and necessary revisions were made based on the expert's recommendations. The reliability of the instrument was further established through a pilot test involving 20 non-participant students, yielding a Cronbach's alpha coefficient of 0.895, which demonstrates high internal consistency. Data were analyzed using SPSS version 27. Descriptive statistics including the mean and standard deviation) were employed to present the frequency and overall patterns of SRL strategy use. Normality and homogeneity tests were conducted to determine the appropriate correlation analysis. As the data violated the assumption of normality, the non-parametric Spearman's rho correlation test was used to examine the relationship between SRL strategies and writing performance." The level of significance was set at p < .05, and the strength of the correlation was interpreted according to Cohen's (2007) guidelines.

RESULTS AND DISCUSSION

This section discusses two main sections based on the research question that have been obtained: first, the components of the self-regulated learning (SRL) strategy that are most widely used by students, and second, the relationship between the use of SRL strategies and their writing performances.

Components of SRL Strategies Used by Senior High School Students in Writing

The descriptive analysis showed that senior high school students employed various SRL strategies encompassing four key dimensions, namely cognitive, metacognitive, social-behavioral, and motivational which measured through the Writing Strategies for Self-Regulated Learning Questionnaire (WSSRLQ). Based on Oxford's (1990) classification, the mean scores revealed that metacognitive (M = 3.50) and cognitive (M = 3.50)

3.49) strategies were used at a high level, while social-behavioral (M = 3.30) and motivational (M = 3.25) strategies were applied at a moderate level. The results of this analysis are encapsulted in the subsequent table.

| | N | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------|-----|---------|---------|-----------|-------------------|
| Metacognitive | 126 | - 1 | .5 | 3.50 | .579 |
| Cognitive | 126 | -1 | 5 | 3.49 | .450 |
| Social- Behavioral | 126 | 1 | 5 | 3.30 | .629 |
| Motivational | 126 | 1 | 5 | 3.25 | .645 |
| Valid N (listwise) | 126 | | | 5-77.55.7 | |

Table 1. Descriptive Statistics of Students' SRL Strategies

Based on the descriptive results, the most widely used self-regulated learning (SRL) strategy by students is a metacognitive strategy (M=3.50), which is included in the high category, indicating that students tend to follow their plans and consider the core elements of writing before starting. Planning, monitoring, and evaluating are all parts of these strategies that are very important for doing well in school. Mohammadi et al. (2020) state that competent students who are able to self-regulate their learning use these strategies to their advantage in the classroom. This is further supported by Zimmerman (2002) and Ramadhanti & Yanda (2021) who claim that metacognitive techniques not only enhance writing abilities but also promote a deeper comprehension of the course content. The high application of metacognitive techniques highlights the value of these techniques in fostering academic success and shows encouraging advancements in self-regulation in writing assignments.

In addition to metacognitive strategies, students also utilized a significant number of cognitive strategies (M=3.49), which falls into the high category. These strategies, including using literary features to make the composition, organizing information, and connecting prior knowledge with new information, are crucial for effective writing. This result is in line with Teng & Zhang (2016), who found that cognitive strategies improve students' writing scores by helping them learn more about the subject and improve their language skills. Booth Olson et al. (2023) also support this by pointing out that cognitive strategies help people engage more deeply with content, which leads to better writing. The high use of cognitive strategies in this study may be because the teachers used good teaching methods that made these strategies clear, the students were more aware of how important they were, and the classroom was a supportive place that encouraged practice. So, these strategies help students write in a way that makes sense and is well-organized, which improves the quality of their writing and their chances of doing well in school (Schunk, 2011; Umamah & Cahyono, 2020)

Meanwhile, social-behavioral (M=3.30) is used at a moderate level. Social-behavioral strategies include activities such as asking for help from teachers or peers, discussing, and collaborating in working on writing assignments. The use of this strategy, which is still classified as moderate, indicates that some students have begun to utilize the social environment as a learning resource, but are not yet fully active in collaboration. This

finding aligns with the work of Teng & Zhang (2020), who emphasizes the importance of social interaction in enhancing students' writing skills through peer support and collaboration. Furthermore, the moderate use of socio-behavioral strategies suggests a need for educators to create more opportunities for students to engage in collaborative writing processes.

In addition, motivational strategies (M=3.25) are used at a moderate level. The moderate average score in this area suggests that while some students have begun to build awareness of self-motivation, factors such as varying levels of intrinsic motivation and the influence of classroom environment may hinder their full engagement. Teng & Zhang (2020) notes that students' ability to motivate themselves is closely linked to their willingness to accept and manage feedback, which can enhance engagement and learning outcomes. Furthermore, Umamah & Cahyono (2020) highlight that many students struggle with self-regulation in writing tasks, particularly when lacking clear guidance. This indicates a need for educators to provide structured opportunities for practicing goal-setting and self-reinforcement techniques, fostering a supportive environment that encourages higher levels of motivation and ultimately improves writing performance (Amalia et al., 2023; Shen & Bai, 2024)

After analyzing the descriptive mean scores of each SRL component, this section aims to provide a clearer overview of how students generally apply self-regulated learning strategies in their writing process by categorizing the overall mean scores. These scores are based on students' responses to the Writing Strategies for Self-Regulated Learning Questionnaire (WSSRLQ), which covers four key components: cognitive, metacognitive, social-behavioral, and motivational strategies. To make the data easier to interpret, the total mean scores are grouped into three categories according to Oxford (1990) classification: high, moderate, and low. The following table shows the frequency distribution of the students' mean score category:

 Low
 6
 4.8

 Moderate
 61
 48.4

 High
 59
 46.8

 Total
 126
 100.0

Table 2. Category of Mean Score

The table above showed that 61 students (48.4%) are in the medium category in terms of Self-Regulated Learning (SRL) ability. Meanwhile, 59 students (46.8%) showed a high level of SRL. These results showed that many students have begun to build awareness of how to regulate their own learning processes, which includes making plans, monitoring their progress, and evaluating their writing. This observation aligns with the findings of Teng & Zhang (2016), who explain that students operating at a moderate SRL level typically demonstrate development in their writing skills. Only a small number of students, namely 6 students (4.8%), were in the low category. This shows that in general,

students already have a fairly good level of SRL, although there are still some students who need special attention in order to improve their self-regulation skills in learning. However, despite this progress, the implementation of SRL strategies among these students has not been fully optimal or consistent, preventing them from achieving a high level of learning independence. To address this gap, Harris et al. (2015) emphasizes the importance of effective teaching strategies, suggesting that instruction should not only focus on writing techniques but also on the development of self-management skills.

Correlation between Self-regulated Learning Strategies in Writing and Writing Performance in Senior High School

To examine the relationship between students' use of self-regulated learning (SRL) strategies and their writing performance, the researcher paired two variables: the students' writing scores and their SRL questionnaire results. The writing scores were taken from their writing task on analytical exposition texts, which had been taught as part of the English curriculum and assessed by their English teacher.

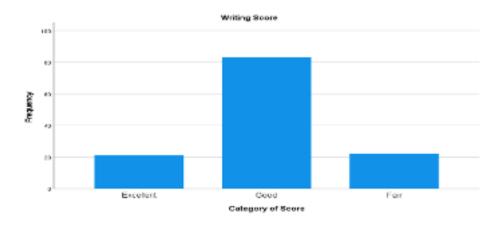


Chart 1. Category of Writing Score

The bar chart depicting the distribution of students' writing score categories shows that the majority of students are in the "Good" category, namely 83 students (65.9%). This category includes students with a score range between 70 to 84, which indicates that most students have good writing skills but still have room for improvement to a higher level. In addition, there are 22 students (17.5%) who are in the "Fair" category (scores between 55 to 69), indicating that although they have achieved basic writing skills, they still need training to reach a higher level. Meanwhile, 21 students (16.7%) managed to enter the "Excellent" category, with scores ranging from 85 to 100. This shows that some students have demonstrated very good mastery of writing skills. Interestingly, based on the scoring classification used in this study, no students fell into the "Poor" category (>54), suggesting that all participants demonstrated at least a minimum acceptable level of writing proficiency.

In addition to the distribution of students' writing scores, the researcher analyzed the relationship between self-regulated learning (SRL) dimensions and students' writing performance. Since the data were not normally distributed, the researcher used

Spearman's rho, a non-parametric correlation test, for the analysis. The result of Spearman's rho correlation analysis was described as follows:

| Table 2. Spearman's rho Correlation between SRL Strategies in Writing |
|---|
| and Writing Performances |

| | Total SRL | Cognitive | Metacognitiv e | Social- Behavioral | Motivation al |
|---------------------|--------------|-----------|-------------------|-----------------------|---------------|
| WRITING SCORE | 0.849 | 0.848 | 0.845 | 0.848 | 0.849 |
| Sig. (2- tailed) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| N | 126 | 126 | 126 | 126 | 126 |

The correlation analysis using Spearman's rho revealed a very strong and statistically significant relationship between overall SRL strategy use and students' writing performance (r = .849, p < .001). All four SRL dimensions, namely motivational, cognitive, behavioral, and metacognitive, showed strong positive correlations with writing scores, with the motivational component emerging as the strongest predictor. While these coefficients are relatively high for behavioral data, they may reflect the high internal consistency of the instrument (Cronbach's α = .895) and the conceptual overlap between SRL components and writing performance. Moreover, the limited variance in writing scores, with most students performing within a similar range, could have contributed to the strength of the correlations.

This strong relationship underscores the interdependence between self-regulatory behavior and writing outcomes, consistent with Schunk (2017) assertion that motivation is a key driver of goal setting and persistence in academic performance. Students who exhibit higher levels of self-motivation likely approach writing tasks with greater effort and resilience, echoing Zimmerma's (2000) view of motivation as both an outcome and a facilitator of self-regulation. Similarly, the positive correlations observed for cognitive and metacognitive dimensions align with findings by Teng & Zhang (2018) and Ramadhanti & Yanda (2021), who noted that learners capable of planning, monitoring, and revising their writing tend to produce more coherent and well-structured texts. The social-behavioral dimension, though slightly lower, still showed a meaningful relationship, reinforcing the importance of peer feedback and social engagement in refining writing performance (Shen & Bai, 2024)

Taken together, the findings suggest that students who consistently apply self-regulated learning (SRL) strategies tend to perform better in writing tasks. The very strong correlation between total SRL use and writing performance highlights the importance of engaging not only with cognitive and metacognitive processes, but also with emotional and social dimensions of learning. This supports the view that writing is not just a linguistic skill but a complex process that requires motivation, reflection, planning, and interaction (Schunk, 2011; Zimmerman, 2002). Pedagogically, this implies that EFL teachers should integrate explicit SRL training, such as guided reflection

journals, self-assessment checklists, and collaborative goal setting, into writing instruction to foster students' autonomy and sustained engagement.

CONCLUSION

This study examined the correlation between self-regulated learning (SRL) strategies and writing performance among senior high school students. The results showed that most students demonstrated a moderate level of SRL, with metacognitive and cognitive strategies being the most frequently applied, while motivational and social-behavioral strategies were used to a lesser extent. All four dimensions of SRL, which include motivational, cognitive, behavioral, and metacognitive, exhibit strong positive correlations with writing scores, with the motivational aspect showing the strongest relationship. These findings highlight the critical role of self-regulated learning strategies in enhancing writing skills, suggesting that more motivated students are able to engage in learning strategies. Therefore, the development and implementation of SRL strategies should be a focus in efforts to improve students' writing capabilities, enabling them to reach their full potential.

Thus, the findings of this study hold important implications for EFL teachers, students, and future researchers. For teachers, the strong correlation between SRL strategies and writing performance suggests the importance of integrating cognitive, metacognitive, social-behavioral, and motivational elements into writing instruction to promote learner autonomy. For students, the results emphasize the value of applying SRL strategies to develop greater motivation, confidence, and effective learning habits in writing. For future researchers, this study provides a foundation for further investigation into SRL implementation across different writing contexts, student populations, and methodological approaches. Overall, the study offers practical and theoretical insights that contribute to enhancing EFL writing instruction and research.

This study acknowledges several limitations. The use of a convenience sample of tenth-grade students may not fully represent the diversity of learners' self-regulated writing behaviors. Future research could adopt longitudinal or cross-institutional designs to examine how SRL strategies evolve across contexts. Additionally, combining quantitative measures with qualitative approaches such as think-aloud protocols could yield richer insights. Finally, as writing performance was assessed only through analytical exposition tasks, exploring various genres or cross-cultural contexts would offer a more comprehensive understanding of the link between SRL and writing performance.

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