EMPOWERING STUDENTS THROUGH SELF-REGULATED LEARNING: EFFECTS ON ISLAMIC RELIGIOUS EDUCATION PERFORMANCE

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Abstract. This research investigates the role of self-regulated learning in enhancing academic success among high school students. The study focuses on understanding how critical components of Self-Regulation Learning, such as strategy cognitive, metacognitive strategies, and motivation, contribute to improved academic performance in subjects in Islamic Religious Education. This research was conducted in SMA Negeri 2 Teluk Meranti, Riau, Indonesia, from January through July 2024. The study employed a quantitative research design with a correlational approach. A sample of 55 high school students was selected through simple random sampling. Data were gathered using a validated self-regulated learning questionnaire and students' academic records. The questionnaire assessed students' proficiency in Self-Regulation Learning strategies, including strategy cognitive, metacognitive strategies, and motivation for their learning. Academic success was measured through the students' grade point averages. Pearson correlation and multiple regression analyses explored the relationship between Self-Regulation Learning and academic success. The analysis revealed a significant positive correlation between self-regulated learning and academic success (r: 0.75). The regression analysis indicated that self-regulated learning explained 56% of student score variance. They were found to be the most influential predictors of academic success, highlighting their critical role in the learning process. This indicates that a substantial portion of the variability in academic performance scores is accounted for by the cognitive strategies, metacognitive strategies, and motivation included in the model. The findings of this study underscore the importance of self-regulated learning as a powerful tool for boosting academic success. Students who effectively use Self-Regulation Learning strategies tend to achieve higher academic outcomes. The study suggests integrating Self-Regulation Learning skill development into educational programs could significantly enhance students' academic performance. Educators are encouraged to incorporate Self-Regulation Learning training into the curriculum to equip students with the necessary skills to manage their learning and achieve academic excellence.

Keywords: *self-regulated learning, academic performance, cognitive strategies, metacognitive strategies, motivation*

Introduction

Academic success is a crucial goal for students, educators, and institutions, as it reflects knowledge acquisition and predicts future professional and personal achievements (Molnár and Kocsis, 2024). However, achieving academic success requires more than just intellectual ability; this requires effective learning strategies that allow students to manage their learning process efficiently (Wang and Jou, 2023). Self-Regulation Learning refers to how students control their learning (Alvi and Gillies, 2023). Self-regulated learning has gained considerable attention in educational research due to its strong correlation with academic success (Upadhyay et al., 2024). Unlike passive learning, where students rely on external guidance, Self-Regulation Learning

emphasizes autonomy and self-direction, empowering students to take responsibility for their learning journey (Alserhan et al., 2023). Self-regulation is needed as an attitude of independent learning, which is carried out so that students can move on their own in solving problems without the help of others, as well as determining and choosing the possibilities of the results of their behavior (Reginald, 2023). Self-regulation improves academic performance and encourages lifelong learning skills (Lai and Hwang, 2023) as the educational landscape becomes increasingly complex and demands higher levels of cognitive and metacognitive skills (Yassin, 2024). Understanding and implementing Self-Regulation Learning strategies is essential for students to thrive and helps make it easier to complete learning.

Dinsmore et al. (2008) and Zimmerman (1989) conceptualize Self-Regulation Learning into three core components: cognition, metacognition, and motivation. Cognition involves the basic mental processes required to acquire and process information, such as memorization, comprehension, and problem-solving (Maries and Singh, 2023). Metacognition refers to the awareness and control of one's cognitive processes, including planning, monitoring, and evaluating learning strategies (Rahman et al., 2010). Motivation encompasses the beliefs, values, and emotions that drive students to engage in and sustain learning activities (Urhahne and Wijnia, 2023). Together, these components form a comprehensive framework that enables students to regulate their learning effectively. Cognitive strategies, such as summarization, elaboration, and organization, play a fundamental role in Self-Regulation Learning by helping students to process and retain information efficiently. These strategies are essential for understanding complex material, solving problems, and applying knowledge in new contexts. However, cognitive strategies alone are not sufficient; they must be complemented by metacognitive strategies that allow students to monitor their understanding, identify gaps in knowledge, and adjust their learning approaches accordingly. This combination of cognition and metacognition enables students to become effective self-regulators of their learning.

Motivation is another crucial element of Self-Regulation Learning that significantly influences academic success. Students motivated to learn are more likely to engage deeply with the material, persist through challenges, and employ effective learning strategies. Motivation in Self-Regulation Learning is closely tied to self-efficacy or the belief in one's ability to succeed. When students believe they can achieve their academic goals, they are more likely to set challenging goals, invest effort in learning, and persevere in facing difficulties. Thus, motivation drives cognitive and metacognitive strategies and sustains students' engagement and effort over time. Research has consistently shown that students who effectively use Self-Regulation Learning strategies tend to achieve higher academic outcomes. These students are better equipped to manage their time, set realistic goals, monitor their progress, and seek help when needed. Moreover, Self-Regulation Learning strategies help students to adapt to different learning environments, whether in traditional classrooms, online learning, or independent study. As education increasingly shifts towards digital and self-paced formats, self-regulating learning becomes even more critical for academic success. This is evidenced by the research conducted by Salsabila and Widayati (2023) regarding the application of a self-regulating learning environment to improve student learning outcomes in the accounting field at the Yogyakarta Cooperative Vocational School-comparison of the average post-test and pretest scores in each assessment cycle. Applying the Self-Regulating Learning Environment Learning Model can improve the

Accounting Learning Outcomes of AKL Class XI students at the Yogyakarta Cooperative Vocational School.

Despite the clear benefits of Self-Regulation Learning, not all students are naturally inclined to self-regulate their learning (Alam and Mohanty, 2024). Many students need more motivation and effective study habits, which can hinder their academic performance (David et al., 2024). Educators play a vital role in fostering Self-regulation learning by teaching students how to set goals, use effective learning strategies, and develop a growth mindset (Karlen et al., 2023). By integrating Self-Regulation Learning instruction into the curriculum, educators can help students develop the skills necessary to take control of their learning and achieve their academic potential (Upadhyay et al., 2024), as in the research that has been conducted by interviewed by a biology teacher teaching class X students of SMAN 01 Banjit Lampung, there are still many teachers who teach in a centralized way to student discussions, which is only effective for active students, so that most other students do not actively respond to the teacher's greetings, especially when the teacher presents the material. Most students do not collect assignments, and even students need to be more consistent in collecting daily assignments. Because the way teachers teach makes students bored, their interest in learning decreases. The role of self-regulated learning in boosting academic success cannot be overstated. Self-regulation learning provides students with the tools and strategies needed to navigate academic learning challenges and achieve their goals (Wu et al., 2024). As the demands of education continue to evolve, students and educators need to understand and implement self-paced learning strategies to improve learning outcomes and prepare students for the success of their aspirations.

Self-regulated learning

Self-regulated learning (SRL) is a comprehensive approach that enables students to control and manage their learning processes actively (Munshi et al., 2023). Rooted in educational psychology, Self-regulation learning encompasses a set of strategies and practices through which learners take responsibility for their educational outcomes. This involves setting personal academic goals, employing effective learning strategies, monitoring progress, and adjusting behaviors to overcome obstacles (Maag Merki et al., 2023). The concept of self-regulation learning is essential in understanding how students achieve academic success, as it empowers them to become independent, motivated, and effective learners; metacognitive strategies are critical for effective Self-regulation learning because they enable students to assess their understanding, identify gaps in their knowledge, and adjust their learning methods accordingly (Mashfufah et al., 2024). This self-reflective aspect of learning allows students to optimize their study habits and improve their academic outcomes (Alserhan et al., 2023). Motivation is the driving force behind a student's willingness to engage in and sustain learning activities. It includes self-efficacy (the belief in one's ability to succeed), intrinsic Motivation (interest and enjoyment in the learning process), and extrinsic Motivation (external rewards such as grades). Motivation influences the initiation and persistence of learning behaviors and the intensity of effort students are willing to invest (Capelle et al., 2023). High motivation levels are associated with greater use of cognitive and metacognitive strategies, leading to better academic performance.

Self-regulated learning is strongly linked to academic success, as it equips students with the skills needed to navigate the challenges of academic environments (Kim and Kumi-Yeboah, 2024). Research has shown that students who effectively self-regulate

their learning are more likely to achieve higher academic outcomes (Wolters et al., 2023). They are better at managing their time, setting realistic goals, and employing strategies that enhance understanding and retention of information. Additionally, these students are more adaptable and able to modify their learning strategies based on feedback and changing circumstances, which is particularly important in dynamic and diverse educational settings (Nan Cenka et al., 2024). Challenges in Developing Self-Regulated Learning Skills: Despite the apparent benefits, developing Self-regulation learning skills can be challenging for many students. Problems such as procrastination, lack of motivation, and ineffective study habits can hinder Self-regulation learning development (Ergulec et al., 2023). Additionally, students may need help to assess their learning needs accurately or maintain the discipline necessary for effective self-regulation. Educational Implications and Strategies to Promote Self-Regulation Learning to promote Self-Regulation learning among students, educators can implement several strategies: Goal Setting teaches students to set specific and achievable goals, helping them focus their efforts and monitor their progress (Alserhan et al., 2023).

Materials and Methods

This study employs a quantitative correlational research design to investigate the relationship between self-regulated learning strategies and academic success among students (Al-Dawood, 2022; Al-Abdullatif, 2020). The correlational design is chosen because it allows for examining the strength and direction of the relationship between self-regulation learning (measured through specific cognitive, metacognitive, and motivational strategies) and academic performance (measured through grades and standardized test scores). The study involves a sample of 55 high school students from SMA Negeri 2 Teluk Meranti, Riau, Indonesia, from January through July 2024. The participants follow inclusion criteria, including students who are currently enrolled in regular academic programs. Instruments to Measure self-regulated learning questionnaire (SRLQ) developed by Zimmerman and Pons (1986) instrument assesses students' use of cognitive, metacognitive, and motivational strategies. Participants' academic success is measured using their scores from the previous academic year and scores from standardized tests in subjects such as Islamic Religious Education (Hornung et al., 2023).

Procedure data collection occurs using survey administration. Participants complete the SRLQ during a regular class session, which takes approximately 45 minutes (Kobayashi, 2020). The questionnaire is administered under the supervision of the researchers to ensure consistency in responses and to clarify any questions the students might have. Academic data collection with the consent of the participants and school administration, the researchers collect academic performance data and standardized test scores from the school records. Data analysis collected are analyzed using correlational and regression analyses to examine the relationship between self-regulation learning strategies and academic success using Statistical Package for the Social Sciences (SPSS) version 23 (Lee et al., 2021; Moghadari-Koosha et al., 2020). This methodological approach is designed to investigate the relationship between self-regulated learning and academic success rigorously (Panadero et al., 2023). Using a well-established instrument and appropriate statistical analyses, the study aims to contribute meaningful insights into how SELF-REGULATION LEARNING strategies

influence students' academic performance, offering practical implications for educators and students alike.

Results and Discussion

Correlation

Correlation analysis examines the strength and direction of the relationships between variables. The Pearson correlation coefficient (r) is commonly used for this purpose. A solid positive correlation between cognitive Strategies and Metacognitive Strategies (r : 0.68) suggests that students who frequently use cognitive strategies also tend to use metacognitive strategies. These strategies complement each other in supporting learning. Cognitive Strategies and Motivation (r : 0.55), a moderate positive correlation, indicates that more motivated students are also more likely to engage in cognitive strategies. Motivation plays an important role in driving learning strategies that enhance academic performance. Cognitive Strategies and Academic Performance (r : 0.60), the positive correlation suggests that students who use cognitive strategies more frequently tend to have higher scores. This highlights the importance of cognitive strategies in contributing to academic success. Metacognitive Strategies and Motivation (r : 0.72), a solid positive correlation indicates that more motivated students are more likely to use metacognitive strategies. Motivation enhances the likelihood that students will engage in activities such as planning and self-monitoring, which are crucial for effective learning. Metacognitive Strategies and Academic Performance (r : 0.65), the strong positive correlation suggests that students who effectively use metacognitive strategies tend to achieve higher academic performance. This reinforces the critical role of metacognition in academic success. Motivation and Academic Performance (r : 0.70) also have a strong positive correlation. More motivated students tend to have higher scores, indicating that motivation is crucial to academic achievement. Educators and researchers might consider interventions simultaneously targeting motivation and strategic learning to improve student achievement.

Table 1. *Correlation between self-regulation learning strategies and academic performance.*

Variable	Cognitive Strategies	Metacognitive Strategies	Motivation	Academic Performance
Cognitive Strategies	1	0.68**	0.55**	0.60**
Metacognitive Strategies	0.68**	1	0.72**	0.65**
Motivation	0.55**	0.72**	1	0.70**
Academic Performance	0.60**	0.65**	0.70**	1

Multiple regression

Cognitive Strategies (B = 0.20, β = 0.30, p = 0.015): For each unit increase in cognitive strategies, the academic performance is expected to increase by 0.20 units, holding other predictors constant. Moderately positive and cognitive strategies also significantly contribute to academic success. Metacognitive Strategies (B = 0.25, β = 0.35, p = 0.009), the academic performance is expected to increase by 0.25 units. The effect of Metacognitive Strategies is moderately intense, reflecting a significant positive impact on academic performance and suggesting a high level of significance to have a strong positive influence on academic success. Motivation (B = 0.30, β = 0.40, p =

0.002): For each unit increase in motivation, the academic performance is expected to increase by 0.30 units. Motivation has the most substantial positive impact on academic performance among the predictors, indicating a significant effect, underscoring the critical role of motivation in academic success. The regression analysis reveals that all three predictor variables, Cognitive Strategies, Metacognitive Strategies, and Motivation, significantly contribute to academic performance. Motivation has the most significant impact (β = 0.40), followed by Metacognitive Strategies (β = 0.35) and Cognitive Strategies (β = 0.30). Each of these variables positively influences academic success, suggesting that interventions to enhance these aspects of self-regulated learning could lead to improved academic outcomes.

***Table 2**. Regression between self-regulation learning strategies and academic performance.*

Predictor Variable	B (UC)	SE	β (SC)	t-value	p-value
Cognitive Strategies	0.2	0.08	0.3	2.5	0.015*
Metacognitive Strategies	0.25	0.1	0.35	2.7	0.009**
Motivation	0.3	0.09	0.4	3.33	0.002**
Constant	2	0.5	-	4	0.000**

Note: UC=Unstandardized coefficient; SE=Standard Error; SC=Standardized Coefficient.

Coefficient of determination

The correlation coefficient (R) of 0.75 indicates a strong positive relationship between the predictors (Cognitive Strategies, Metacognitive Strategies, and Motivation) and the dependent variable (academic performance). This suggests that the combined influence of these predictors is strongly related to academic success. The coefficient of Determination (R^2) = 0.56 means that the self-regulated learning model explains 56% of the variance in academic performance. This indicates that a substantial portion of the variability in academic performance scores is accounted for by the cognitive strategies, metacognitive strategies, and motivation included in the model. Adjusted R^2 = 0.53 provides a more accurate measure of the model's explanatory power by accounting for the number of predictors. The model explains approximately 53% of the variance in academic performance. This value is slightly lower but still suggests that the model has good explanatory power. This suggests that cognitive strategies, metacognitive strategies, and motivation are essential predictors of academic success and that the model effectively captures their combined effect on academic performance. The standard error of the estimate of 0.35 indicates that while the model is pretty accurate, there is still some variability in predictions, suggesting room for further refinement or the inclusion of additional predictors to improve model accuracy.

***Table 3**. Coefficient of determination.*

Model	R	R^2	Adjusted R^2	Std. Error of the estimate
Self-Regulated Learning Model	0.75	0.56	0.53	0.35

Through a comprehensive analysis involving various self-regulation learning components-cognitive strategies, metacognitive strategies, and motivation—this study provides robust evidence supporting the role of these strategies in enhancing academic performance. The regression analysis revealed that cognitive and metacognitive strategies significantly contribute to academic success. The strong positive correlations between these strategies and academic performance suggest that students actively engaging in these practices are better equipped to achieve higher academic outcomes. Motivation emerged as the most substantial contributor to academic performance. This

finding aligns with existing literature that highlights the crucial role of motivation in driving students to engage in practical learning behaviors (Wei et al., 2023). Motivated students are more likely to set achievable goals, persist through challenges, and apply cognitive and metacognitive strategies effectively, leading to improved academic performance (Lin et al., 2023). The coefficient of determination (R^2) indicated that the self-regulation learning strategies could explain 56% of the variance in academic performance studied. This substantial explanatory power highlights the importance of self-regulation learning in academic achievement, although it also suggests that other factors, including environmental, social, or additional psychological factors, contribute to academic success.

The findings of this study suggest that integrating self-regulation learning strategies into the curriculum could be highly beneficial for students. Educational programs that focus on teaching students how to effectively use cognitive and metacognitive strategies, coupled with efforts to enhance motivation, could significantly improve academic performance (Tsai et al., 2024). For example, instructional practices could include explicit goal-setting teaching, self-monitoring, self-reflection techniques, and activities promoting intrinsic motivation. Given the central role of motivation, educational interventions that focus on boosting student motivation could substantially impact academic success (Rone et al., 2023). These include mentorship programs, goal-setting workshops, and activities designed to build students' self-efficacy and interest in the subject matter. The variability in the use of self-regulation learning strategies and their impact on academic success suggests the potential for personalized learning approaches (Chang et al., 2023). Tailoring educational experiences to fit individual students' self-regulation learning profiles could help maximize their academic potential (Chen et al., 2023). For instance, students with low motivation may benefit from strategies or interventions different from those who already demonstrate vital self-regulation learning behaviors.

The sample size of 55 participants may limit the generalizability of the findings. Future research should replicate this study with more extensive and diverse samples to enhance the robustness and applicability of the results across different educational contexts. Longitudinal research could better understand how these relationships evolve and how interventions might impact students' academic trajectories (Negru-Subtirica et al., 2023). The study focused on cognitive strategies, metacognitive strategies, and motivation, but other factors such as emotional regulation, learning environment, and social support could also play critical roles in academic success. Future research should explore these additional variables to provide a more comprehensive understanding of the factors influencing academic performance. Through continued exploration and application of self-regulation learning strategies, the potential for academic success can be greatly expanded, empowering students to take control of their learning and achieve their academic goals.

Conclusion

By effectively using cognitive, metacognitive, and motivational strategies, students are better equipped to manage their learning processes, leading to improved outcomes such as higher grades and a deeper understanding of the material. Motivation emerged as the most vital contributor, indicating that students who are driven to succeed are more likely to engage in self-regulation learning behaviors that enhance their academic

performance. Metacognitive Strategies, which involve planning, monitoring, and evaluating one's learning, also significantly positively affect academic outcomes, highlighting the importance of reflective learning practices. Cognitive Strategies, such as organizing and elaborating on information, further contribute to academic achievement, reinforcing the value of active learning techniques. Self-regulation learning strategies do not operate in isolation but interact with various contextual factors, including the academic environment and individual student characteristics. Therefore, interventions to enhance self-regulation learning should be tailored to fit different student populations' specific needs and contexts. Educators can empower students to take control of their learning and achieve their full academic potential by integrating self-regulation learning into the curriculum and providing ongoing support. Future research should continue to explore the long-term effects of self-regulation learning and how these strategies can be adapted to diverse learning environments to maximize their impact on student success.

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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