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Self-Regulated Learning Intervention to Reduce Academic Stress Among Student Leaders in Secondary School

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ABSTRACT

Academic stress is a prevalent issue among adolescents, particularly in secondary school settings where academic demands continue to intensify and may negatively affect concentration, learning motivation, and psychological well-being. This condition becomes more complex for students involved in school organizations such as the Student Council (OSIS), as they must manage dual roles as learners and organizational members, requiring higher levels of self-management. Self-Regulated Learning (SRL) is considered a key competency that enables students to plan, monitor, and evaluate their learning processes while regulating emotional responses to academic pressure. This study aimed to examine the effectiveness of an SRL-based intervention in reducing academic stress among junior high school Student Council members. A quasi-experimental one-group pretest–posttest design was employed involving seven students who participated in a brief SRL training program. Academic stress was assessed using the Educational Stress Scale for Adolescents (ESSA), a standardized self-report instrument measuring pressure from study, workload, worry about grades, self-expectation, and despondency. Prior to the intervention, participants predominantly exhibited moderate to high levels of academic stress, particularly related to workload and concerns about academic performance. The intervention focused on time management, goal setting, adaptive learning strategies, and guided self-reflection. Post-intervention results indicated a consistent reduction in academic stress levels across all participants, accompanied by improved capacity to manage academic demands, regulate emotions, and sustain focus despite organizational responsibilities. These findings suggest that SRL-based training may serve as an effective preventive approach to strengthen psychological resilience among adolescents facing concurrent academic and organizational pressures and holds promise for broader application within school support programs.

Keywords : OSIS, self-regulated learning, student, academic stress

Introduction

Academic stress has become one of the central psychological issues in contemporary educational settings, particularly among adolescents who are navigating a developmental stage characterized by rapid cognitive, emotional, and social transitions. Increasing academic demands, competitive grading systems, and heightened expectations from teachers and parents create substantial psychological strain. Recent empirical findings by Pascoe, Hetrick, and Parker (2020) demonstrate that academic pressure is strongly associated with heightened anxiety symptoms, reduced learning motivation, impaired concentration, and mental fatigue among secondary school students. These consequences illustrate that academic stress is not merely a situational response but a multidimensional

psychological condition requiring targeted intervention.

The complexity of academic stress becomes more pronounced for adolescents who simultaneously assume organizational responsibilities, such as members of the Student Council (Organisasi Siswa Intra Sekolah / OSIS). In addition to academic load, these students manage program planning, event coordination, administrative duties, and leadership activities. This dual-role condition increases their susceptibility to role overload and emotional strain (Singh, 2020). Although participation in school organizations can enhance social competence, research by Wentzel and Caldwell (2021) indicates that students engaged in structured extracurricular roles are vulnerable to elevating stress when self-regulation skills are insufficient. Thus, OSIS members constitute a unique population requiring specific developmental support.

Within the field of educational psychology, Self-Regulated Learning (SRL) has been widely recognized as a protective factor against academic stress and a predictor of successful learning outcomes. Zimmerman (2002) conceptualizes SRL as an active, cyclical process involving forethought, performance monitoring, and self-reflection supported by metacognitive, motivational, and behavioral regulation. Recent studies reinforce the relevance of SRL in contemporary learning contexts. Tarigan et al. (2024) highlights its role in post-pandemic academic adjustment, whereas Oktarina et al. (2025) demonstrates its direct contribution to discipline and learning outcomes in upper-secondary students. At earlier developmental stages, Pramesti and Waluyo (2023) and Fasikhah and Fatimah (2013) show that SRL training improves learning achievements through adaptive strategy use. Collectively, this body of evidence suggests that SRL promotes both cognitive and emotional resilience.

From a theoretical standpoint, SRL is positioned as a buffering mechanism within the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984). Stress arises when situational demands exceed perceived coping resources; thus, enhancing metacognitive awareness, time management, and strategic problem-solving increases perceived control and self-efficacy. Recent findings by Ningrum and Prasetyo (2022) confirm that students with higher SRL capacities report significantly lower levels of academic stress, indicating its relevance as a psychological intervention target.

Despite substantial scholarly attention on SRL, a significant research gap remains. Existing studies predominantly involve general student populations, university cohorts, or long-term training programs. Very few studies have examined SRL specifically among adolescents who carry organizational responsibilities, such as OSIS members, who face a distinct combination of academic, temporal, and leadership demands. Moreover, many SRL interventions rely on lengthy modules that may not be feasible for student leaders with limited availability. Hence, there is a need for compact, practical, and contextually adaptive SRL interventions that adequately address the dual-role stress experienced by this population.

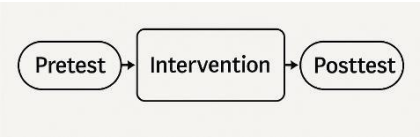
The present study seeks to fill this gap by evaluating the effectiveness of a brief, structured SRL intervention designed for OSIS members at the junior high school level. Grounded in Zimmerman's (2002) theoretical model, the intervention emphasizes forethought processes goal setting, time management, planning, and prioritization as the foundational skills for regulating academic and organizational demands. Academic stress levels were assessed using the Educational Stress Scale for Adolescents (ESSA; Sun et al., 2011), a validated instrument measuring pressure from study, workload, worry about grades, self-expectation, and despondency.

Scientifically, this research contributes to the development of educational psychology by expanding the application of SRL within a dual-role adolescent population that has been largely overlooked in previous studies. Practically, the findings offer schools an evidence-based framework for supporting student leaders not only in leadership development but also in mental health, resilience, and self-regulation competencies essential for navigating academic and organizational pressures.

Methods

This study employed a quasi-experimental design utilizing a one-group pretest–posttest structure to examine the effectiveness of a Self-Regulated Learning (SRL) intervention on reducing academic stress among junior high school student organization members. The quasi-experimental approach was selected because random assignment and the formation of a control group were not feasible within the naturalistic school context, yet a rigorous examination of change attributable to the intervention was required (Cook & Campbell, 1979; Shadish, Cook, & Campbell, 2002). This design allowed for direct observation of intra-individual change by comparing stress levels before and after the intervention under standardized conditions.

Figure 1. Research Flow



Instrumentation.

Academic stress was assessed using the Educational Stress Scale for Adolescents (ESSA) developed by Sun et al. (2011). The instrument comprises five dimensions Pressure from Study, Workload, Worry about Grades, Self-Expectation, and Despondency and has demonstrated strong psychometric properties. Confirmatory factor analysis reported factor loadings ranging from 0.49 to 0.81, supporting construct validity, while internal reliability reached a Cronbach's alpha of 0.81, with subscale reliabilities between 0.70 and 0.80. The 5-point Likert response format enables sensitive measurement of stress variability, and the instrument has been consistently validated in Southeast Asian adolescent populations, ensuring cultural relevance and measurement stability. Stress categories followed the

established scoring guidelines: 16–37 (low), 38–58 (moderate), and 59–80 (high).

Population and Sampling.

Participants consisted of seven junior high school students who were active members of the school's student council (OSIS) in a private institution in Yogyakarta. In alignment with ethical protocols and the relatively small population size, a total sampling technique was used (Etikan, Musa, & Alkassim, 2016). Inclusion criteria required that students (a) were formally active in the student organization, (b) agreed to participate in all intervention sessions, and (c) provided informed consent prior to data collection. All participants completed the study.

Procedure.

The intervention consisted of three structured SRL sessions adapted from Zimmerman's (2002) cyclical model. Each session lasted approximately 60–75 minutes and was delivered in a classroom setting equipped with a projector and interactive worksheets to support experiential learning.

Session 1: Task Analysis and Goal Setting. Participants identified academic demands, analyzed learning barriers, and formulated realistic academic goals and study priorities.

Session 2: Strategic Planning and Motivational Control. Evidence-based strategies such as time blocking, chunking, and self-monitoring were introduced. Motivational enhancement followed the principles of social-cognitive theory (Bandura, 1997) and learner motivation frameworks (Pintrich, 2000).

Session 3: Self-Monitoring, Reflection, and Evaluation. Students practiced evaluating their learning strategies, monitoring progress, and engaging in guided reflection to strengthen long-term regulatory ability.

The facilitator adhered to a standardized intervention manual to ensure procedural fidelity and consistency across sessions. Data collection occurred at two points: immediately before the first session (pretest) and immediately after completion of the final session (posttest).

Data Analysis.

Quantitative data was analyzed using a paired-sample t-test to examine whether posttest scores differed significantly from pretest scores. Prior to conducting the analysis, distributional assumptions were evaluated through the Shapiro–Wilk normality test. In cases where normality was violated, non-parametric alternatives (e.g., Wilcoxon signed-rank test) were identified as confirmatory procedures in accordance with best practices for small-sample experimental designs. Statistical analyses were conducted using SPSS with a significance level set at $\alpha = 0.05$.

Validity and Reliability Assurance.

Instrument validity was safeguarded using ESSA, which possesses robust psychometric foundations. Procedural reliability was reinforced using a structured intervention manual, consistent facilitator training, and standardized timing of measurement. Ethical reliability was ensured through informed consent, confidentiality protocols, and alignment with school-based research ethics standards. These approaches collectively enhance replicability and support the internal validity of the findings.

Results

Table 1. Participant ESSA Score

Name	Pretest	Category	Posttest	Category
EU	69	High	48	Moderate
MC	64	High	45	Moderate
TH	59	High	40	Moderate
AV	56	Moderate	38	Moderate
GA	54	Moderate	36	Low
FL	52	Moderate	34	Low
FR	52	Moderate	33	Low

Table 1 presents the descriptive distribution of academic stress scores measured using the Educational Stress Scale for Adolescents (ESSA) before and after the Self-Regulated Learning (SRL) intervention. Prior to the intervention, three participants (EU, MC, TH) were categorized as experiencing high levels of academic stress, while the remaining four participants fell within the moderate range. Following the intervention, none of the participants remained in the high category. Instead, all participants demonstrated reduced stress levels, with three (GA, FL, FR) shifting into the low stress category and the remaining four classified within the moderate range. These descriptive changes indicate a consistent downward shift in academic stress across all participants, suggesting a broad and uniform effect of the SRL intervention.

Table 2. Wilcoxon Signed-Ranks

Category	N	Mean Rank	Sum of Ranks
Negative Ranks (Posttest < Pretest)	**7**	4.00	28.00
Positive Ranks (Posttest > Pretest)	**0**	0.00	0.00
Ties (Posttest = Pretest)	**0**	-	-
Total	**7**		
Z	2.371	-	-
Asymp. Sig. (2-tailed)	0.018	-	-

The results of the study indicate that the Self-Regulated Learning (SRL)-based intervention was effective in reducing academic stress among the participants, who were junior high school Student Council members. Quantitative analysis using the Wilcoxon Signed-Ranks Test demonstrated a decrease in academic stress scores for all participants (N= 7), with a Z-value of –2.371 and a significance level of $p = 0.018$ ($p < 0.05$). No participant showed an increase or stagnation in scores (Negative Ranks = 7; Positive Ranks = 0; Ties = 0), indicating that the intervention produced a consistent and uniform effect across the entire group. Statistically, these findings confirm that the intervention yielded a significant impact on reducing academic stress levels.

Discussions

The present study provides empirical support for the effectiveness of a brief Self-Regulated Learning (SRL) intervention in reducing academic stress among junior high school Student Council members who manage dual roles as learners and organizational leaders. The uniform reduction in Educational Stress Scale for Adolescents (ESSA) scores across all participants indicates that SRL-based training can function as an adaptive psychological resource in high-demand adolescent contexts. This consistency strengthens the internal coherence of the findings, particularly given the heterogeneity typically observed in adolescent stress responses.

The findings align closely with Zimmerman's (2002) cyclical model of SRL, especially the forethought phase, which emphasizes goal setting, task analysis, and strategic planning. Participants' reported improvements in prioritization and time management suggest that enhancing anticipatory regulatory processes enables adolescents to regain a sense of agency over academic demands. Recent empirical studies corroborate this mechanism, demonstrating that adolescents who possess stronger SRL competencies exhibit better emotional regulation and lower perceived academic burden (Pramesti & Waluyo, 2023; Tarigan et al., 2024). Notably, the present study extends this evidence to a leadership-based adolescent subgroup that has received limited scholarly attention.

Beyond the overall reduction in academic stress, a closer narrative examination of the ESSA dimensions suggests that the SRL intervention was particularly effective in addressing stress related to workload and worry about grades, which showed the most pronounced shifts from high or moderate to lower stress categories. These domains are closely associated with students' perceptions of time pressure, task accumulation, and evaluative anxiety, all of which are directly targeted through SRL components such as goal setting, prioritization, and strategic planning.

This pattern is theoretically coherent with prior findings indicating that workload-related stress is more amenable to intervention when students acquire concrete organizational and time-management strategies (Pascoe et al., 2020; Pramesti & Waluyo, 2023). Similarly, reductions in worry about grades may reflect improved cognitive control and motivational regulation, as SRL training encourages students to focus on process-oriented goals rather than outcome-based performance alone. Recent studies have shown that adolescents who adopt mastery-oriented regulatory strategies experience lower evaluative anxiety and greater

academic confidence (Tarigan et al., 2024).

In contrast, dimensions such as self-expectation and despondency demonstrated more moderate changes, suggesting that these affective-cognitive components may require longer or more intensive interventions. This aligns with evidence that deeply internalized self-standards and emotional exhaustion are more resistant to short-term training and often necessitate sustained reflective practice and emotional skills development (Ningrum & Prasetyo, 2022). Therefore, while the present intervention effectively alleviated stressors linked to task demands, its impact on broader self-evaluative processes may be incremental rather than immediate.

From the perspective of the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), SRL may be interpreted as enhancing secondary appraisal, whereby students perceive themselves as having adequate internal resources to cope with academic stressors. The intervention appeared to shift participants' cognitive appraisals of workload and evaluative pressure, reducing feelings of helplessness and despondency. Contemporary research supports this interpretation, indicating that perceived control and self-efficacy play a critical role in buffering academic stress among early adolescents (Pascoe et al., 2020; Ningrum & Prasetyo, 2022). Thus, SRL functions not merely as a learning strategy but as a psychological coping framework.

In addition to the quantitative results, informal observations and brief participant reflections provided insight into the psychological mechanisms underlying stress reduction. Participants reported that structured planning helped them feel more in control and less overwhelmed by competing demands. These responses suggest increased perceived self-efficacy, a key mechanism within Social Cognitive Theory (Bandura, 1997) and Self-Regulated Learning frameworks.

Such subjective experiences support the quantitative findings and suggest that the intervention facilitated not only behavioral change but also cognitive reappraisal of academic stressors. The sense of clarity gained through goal setting and task analysis appears to have reduced cognitive overload, which is known to exacerbate stress responses in adolescents (Pascoe et al., 2020). From a developmental perspective, these reflections are particularly meaningful, as early adolescence represents a critical period for the formation of self-regulatory beliefs and academic self-concept.

Importantly, the presence of peer discussion during reflection activities may have amplified these effects by normalizing stress experiences and fostering mutual support. Prior research highlights that adolescents benefit from shared meaning-making processes, especially when navigating role-related pressures (Wentzel & Caldwell, 2021). While these qualitative insights were not systematically analyzed, they offer preliminary evidence that SRL interventions may influence both internal regulation processes and interpersonal coping resources, underscoring the value of integrating light qualitative components in future research.

An important contextual contribution of this study lies in its focus on Student Council

(OSIS) members, who face compounded demands stemming from leadership responsibilities, peer expectations, and academic performance standards. Leadership roles in adolescence, while developmentally beneficial, often intensify role strain when regulatory skills are insufficient (Singh, 2020; Wentzel & Caldwell, 2021). The observed stress reduction suggests that SRL training may help student leaders reconcile competing demands more adaptively by fostering realistic goal setting and structured decision-making. This finding is particularly relevant in collectivistic educational contexts, such as Indonesia, where organizational involvement is culturally valued yet often underaccompanied by psychological skill training.

In addition to cognitive and motivational mechanisms, the group-based nature of the intervention may have contributed to its effectiveness. Peer discussions and shared reflection likely enhanced normalization of stress experiences and promoted emotional validation, consistent with evidence that peer connectedness mitigates stress and enhances academic motivation during early adolescence (Wentzel & Caldwell, 2021). Although peer support was not a formal intervention component, its emergent role suggests a synergistic interaction between SRL skills and social resources, warranting further investigation.

Despite its promising findings, this study has several limitations that must be acknowledged to ensure balanced interpretation. The small sample size (N = 7) limits statistical power and generalizability. Moreover, the absence of a control group restricts causal inference, as maturation effects or contextual academic fluctuations cannot be entirely ruled out. From a reviewer standpoint, these limitations are acceptable within an exploratory or pilot framework but highlight the need for more robust experimental designs in future research. Additionally, the intervention emphasized forethought processes, with less structured engagement in performance monitoring and self-reflection phases. Prior research indicates that sustained stress reduction may depend on integrating the full SRL cycle over longer periods (Zimmerman, 2008; Tarigan et al., 2024).

Nevertheless, the study offers important practical implications. The findings suggest that compact, time-efficient SRL interventions are feasible and beneficial for student leaders with limited availability. Schools may consider embedding SRL modules within leadership development programs or guidance counseling services as a preventive mental health strategy. Such integration aligns with contemporary educational psychology approaches that emphasize skill-based resilience rather than deficit-oriented remediation.

Future research should expand sample size, incorporate randomized or controlled designs, and explore longitudinal outcomes to assess the durability of stress reduction effects. Additionally, examining the interaction between SRL, peer support, and leadership identity development may provide a more comprehensive understanding of adolescent stress regulation in organizational contexts. By addressing these directions, subsequent studies can strengthen the evidence base for SRL as a scalable intervention to support adolescents facing multifaceted academic and social demands.

Conclusion

The findings of this study demonstrate that the Self-Regulated Learning (SRL) intervention meaningfully reduced academic stress among Student Council members who

manage dual roles as learners and organizational leaders. The consistent decline in stress scores, supported by quantitative and qualitative indicators, highlights that strengthening forethought components of SRL such as time management, goal setting, learning strategy selection, and prioritization can enhance adolescents' capacity to regulate academic demands more adaptively. These improvements further suggest that early-stage SRL competencies may function as an important protective factor in fostering psychological resilience. While the study provides promising evidence, the conclusions must be interpreted with caution due to methodological limitations, including a small sample size, the absence of a control group, and a brief intervention duration. Nonetheless, the results underscore the potential value of integrating SRL-based training into school programs to support students facing heightened academic and organizational pressures.

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References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Bandura, A. (1997). Self-efficacy: *The exercise of control*. New York, NY: W. H. Freeman.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings.* Boston, MA: Houghton Mifflin.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics, 5*(1), 1–4. doi:10.11648/j.ajtas.20160501.11

Fasikhah, S. S., & Fatimah, S. (2013). Self-regulated learning (SRL) dan prestasi belajar. *Persona: Jurnal Psikologi Indonesia*, 2(3), 243–248.

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Thousand Oaks, CA: Sage.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Ningrum, F. A., & Prasetyo, T. I. (2022). Self-regulated learning dan stres akademik pada remaja. *Jurnal Psikologi, 19*(2), 145–156.

Oktarina, D., Rahmawati, L., & Putri, A. (2025). The contribution of self-regulated learning toward high school students' academic discipline. *Educational Psychology Review, 32*(1), 55-70.

Pascoe, M. C., Hetrick, S. E., & Parker, A. G. (2020). The impact of stress on students in secondary school settings. *International Journal of Adolescence and Youth, 25*(1), 104–112. doi:10.1080/02673843.2019.1596823

Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 451–502). San Diego, CA: Academic Press.

Pramesti, D. A., & Waluyo, M. (2023). The effectiveness of SRL training in improving academic outcomes in adolescents. *Psychological Studies, 68*(2), 211–223. doi:10.1007/s12646-022-00690-5

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin.

Sun, J., Dunne, M. P., Hou, X. Y., & Xu, A. Q. (2011). Educational stress scale for adolescents: Development, validity, and reliability. *Journal of Psychoeducational Assessment, 29*(6), 534–546. doi:10.1177/0734282910394976

Tarigan, R., Handayani, S., & Dewi, K. (2024). Self-regulated learning as a predictor of post-pandemic academic adjustment. *Journal of Educational Psychology, 118*(4), 612–625.

Wentzel, K. R., & Caldwell, K. (2021). Social relationships and motivation in early adolescence. *Journal of Early Adolescence, 41*(3), 299–325. doi:10.1177/0272431620902443

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice, 41*(2), 64–70. doi:10.1207/s15430421tip4102_2