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Self-Regulated Learning Module To Reduce Bedtime Procrastination in Young Adults

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Abstract

Bedtime procrastination significantly impairs sleep quality among young adults, yet self-regulated learning interventions remain underexplored in this population. This research and development study involved three teachers at River Kids Special Needs School. Data were collected using the Sleep Procrastination Scale, semi-structured interviews, and module evaluation questionnaires. A five-module SRL-based intervention was developed focusing on goal-setting, distraction management, and self-reflection. All participants showed high bedtime procrastination levels initially. Post-intervention, journaling and breathing techniques effectively increased sleep awareness, while distraction avoidance strategies reduced late-night social media use. The SRL module effectively reduces bedtime procrastination through personalized self-regulation strategies, offering practical applications for young professionals balancing work and personal life demands.

Keywords: bedtime procrastination, self-regulated learning, sleep quality, young adults, intervention module, self-regulation strategies, time management

1. Introduction

Early adulthood (18-40 years) represents a critical developmental period characterized by emerging independence, career establishment, and relationship formation (Xu et al., 2025). Sleep quality significantly influences performance, health, and well-being during this stage, with adequate sleep essential for maintaining physical-psychological balance and optimal cognitive functioning (Xu et al., 2025). However, many young adults struggle with bedtime procrastination voluntarily delaying sleep without external constraints despite awareness of negative consequences (Salihu & Abdulkareem, 2025). This phenomenon, often linked to technology addiction and inadequate self-regulation, contributes to sleep disorders and diminished well-being (Salihu & Abdulkareem, 2025).

Bedtime procrastination prevalence is alarming: approximately 75% of college students experience sleep disturbances, with delayed sleep onset as a primary insomnia factor (Asri et al., 2025). Over 50% of young adults report delaying sleep ≥2 nights weekly, resulting in shorter sleep duration and poorer quality (Hill et al., 2025). Indonesian data reveals particularly concerning patterns, with average sleep duration of only 6 hours 36 minutes daily below the global average and significantly under the recommended 7-9 hours for ages 19-25. Insufficient sleep due to procrastination correlates with depression, anxiety, and insomnia (Hyndych & El-abassi, 2025).

Bedtime procrastination reflects self-regulatory failure rather than strategic delay individuals postpone sleep despite recognizing next-day consequences like fatigue and impaired concentration (Kroese et al., 2014). Low self-regulation capacity, encompassing behavior, emotion, and thought management abilities, strongly predicts bedtime procrastination severity (Geng et al., 2021). Self-regulated learning (SRL) approaches have demonstrated effectiveness in reducing academic procrastination and enhancing productivity through systematic planning, implementation, and self-reflection phases (Zimmerman, 2002).

Despite extensive research on SRL interventions for academic procrastination, a significant gap exists in applying this approach to bedtime procrastination among working young adults, particularly those in emotionally demanding professions (Rogowska, 2023). While studies have documented bedtime procrastination in university students, early-career professionals face distinct challenges including work-life balance pressures, occupational stress, and limited autonomy over daily schedules (Jeoung et al., 2023). Special education teachers, specifically, experience heightened emotional labor and irregular work patterns that may exacerbate sleep regulation difficulties (Tao et al., 2025). Furthermore, existing SRL interventions predominantly utilize group-based or classroom formats, whereas self-directed modular approaches tailored to individual sleep patterns remain

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underexplored. This gap is particularly critical given that poor sleep quality among teachers correlates with reduced job performance and student outcomes (Kroese et al., 2014).

This study addresses these gaps by introducing three novel contributions. First, it develops a contextualized SRL-based intervention specifically designed for young adult professionals in special education settings, moving beyond student-focused frameworks. Second, it employs a personalized, self-paced modular format accommodating irregular schedules and autonomy needs. Third, it integrates culturally relevant self-regulation strategies considering Indonesian contexts where social and environmental factors distinctly influence sleep behaviors.

The module uniquely combines forethought planning, performance monitoring, and self-reflection phases tailored to address occupation-specific sleep barriers. Specifically, this research aims to: (1) identify internal and external factors contributing to bedtime procrastination in this population; (2) design a five-module SRL intervention incorporating goal-setting, distraction management, stress reduction, and self-reflection techniques; (3) assess module content validity through expert evaluation; (4) examine user acceptance and perceived effectiveness; and (5) document preliminary behavioral changes following one-week implementation.

2. Research Methods and Results

2.1 Research Design

This study employed a Research and Development (R&D) design following Sugiyono's (2016) framework, comprising six stages: (1) problem identification; (2) data collection; (3) product design; (4) expert validation; (5) design revision; and (6) user dissemination. The final product was a self-paced SRL-based module for bedtime procrastination reduction.

2.2 Participants

Three participants were recruited from River Kids Special Needs School: one teacher and two interns, all young adults. Purposive sampling was employed with specific inclusion criteria: (1) age 18-40 years; (2) employed/interning at the school; (3) self-reported sleep time later than intended ≥3 nights weekly; (4) no medical leave or diagnosed clinical sleep disorders; and (5) willingness to implement module strategies for one week.

This non-probability sampling approach was justified given the R&D design prioritizing in-depth module development and validation over statistical generalization. The small sample size (n=3) enabled intensive data collection through repeated interviews and detailed module customization, consistent with R&D methodology focusing on product refinement through user feedback. Participants were anonymized as Aley, Adia, and Itan.

2.3 Instruments

Sleep Procrastination Scale: The original Kroese et al. (2015) scale employs a 5-point Likert format (1=never to 5=always). Following pilot testing with Indonesian samples (n=10), the scale was adapted to 4-point Likert format (removing neutral midpoint) to reduce acquiescence bias and encourage definitive responses, a practice supported in cross-cultural instrument adaptation. This modification has been validated in Indonesian contexts (Klingsieck, 2013) and demonstrated acceptable psychometric properties: content validity (Aiken's V=0.89) and internal consistency (Susi et al., 2024).

Semi-Structured Interviews: Interview protocols explored bedtime habits, self-regulation practices, internal/external procrastination factors, and strategy effectiveness post-implementation. Module Evaluation Questionnaire: Developed by researchers to assess content substance, learning design, psychological relevance, activities/evaluation, and visual appearance using 5-point Likert scales (1=very poor to 5=very good).

2.4 Procedures

School database examination identified young adult teachers not on leave. Initial interviews explored bedtime habits and SRL practices. Based on collected data, researchers designed a five-module SRL intervention addressing identified patterns. The module underwent expert validation by the school principal (also a psychologist) using the evaluation questionnaire. Post-revision, the module was distributed to three participants for user evaluation using identical questionnaires. Follow-up interviews occurred one week post-implementation to assess strategy application and preliminary behavioral changes.

2.5 Data Analysis

Descriptive analysis techniques were employed to present quantitative (questionnaire scores, scale results) and qualitative data (interview transcripts, open-ended responses) in interpretable formats. Quantitative data were summarized using frequency distributions and mean scores. Qualitative data underwent thematic analysis to identify patterns in bedtime procrastination causes, SRL practices, and strategy effectiveness.

Data analysis was performed using descriptive analysis techniques. This approach aims to present the collected data in its original form (Creswell & N, 2018).

The data collected in this study included quantitative and qualitative data, which were used to provide an overview of the participants' sleep delay behavior and self-regulated learning behavior (Wang et al., 2025).

3. Results and Discussion

3.1 Bedtime Procrastination Severity

Assessment results revealed critically high bedtime procrastination levels across all participants (Table 1). Scores ranged from 37 to 45 out of maximum 45 points, with Aley exhibiting highest severity (score=45), Adia moderate-high (score=37), and Itan very high (score=42). All participants scored above the 75th percentile of normative young adult samples (M=28.5, SD=6.2) reported in validation studies (Kroese et al., 2015), suggesting special education teaching contexts present unique sleep regulation challenges.

Table 1. Bedtime Procrastination Questionnaire Results

Participant	Total Score	Category
Aley	45	Very High
Adia	37	High
Itan	42	Very High

Note. Scoring categories: 9-18=Very Low; 19-25=Low; 26-32=Moderate; 33-39=High; 40-45=Very High (Foong et al., 2021)

These findings align with (Bozkurt et al., 2024) conceptualization of bedtime procrastination as intentional behavior driven by inadequate self-regulation rather than external constraints. The uniformly elevated scores provided strong justification for targeted intervention development, as all participants demonstrated clear need for enhanced self-regulation strategies (Bursali, 2022). Notably, this special education teaching sample exhibited higher procrastination severity than general young adult populations, supporting recent evidence that emotionally demanding occupations deplete self-regulatory resources needed for evening behavioral control (Astuti, 2024).

3.2 Procrastination Patterns and Contributing Factors

Checklist and interview analyses (Tables 2-3) revealed consistent patterns: voluntary sleep delay despite awareness of consequences, difficulty adhering to intended bedtimes, and frequent pre-sleep distractions. Internal factors included affective components (anxiety about work tasks, overthinking) and competence deficits (poor time management, lack of sleep discipline). External factors encompassed environmental influences (social media accessibility, peer social activities) and occupational demands (internship supervision stress, classroom responsibilities).

Table 2. Bedtime Procrastination Checklist Results

Statement	Aley	Adia	Itan
I go to bed later than I intend to	Always	Often	Often
I go to bed earlier if I need to wake up early	Rarely	Often	Never
When it's time to turn off lights and sleep, I do it right away	Sometimes	Rarely	Never
Often, I still do other things when it's time to go to bed	Often	Often	Often
My attention is easily distracted when I want to sleep	Often	Often	Often
I don't go to bed on time	Always	Rarely	Often
I have a regular bedtime that I always maintain	Rarely	Rarely	Rarely
I want to sleep on time but never do	Rarely	Often	Often
I can easily stop my activities when it's time to sleep	Sometimes	Sometimes	Never

Table 3. Internal and External Procrastination Factors

Participant	Internal Factors	External Factors	Procrastination Forms	Impact
Aley	Anxiety from work habits; poor time management; social media scrolling	Personal habits (social media, overthinking)	Instagram/Twitter scrolling, overthinking, occasional reading	Tiredness, unfocused, sleep deprivation
Adia	Anxiety about internship tasks; poor time management despite task awareness	Internship demands, peer influence	TikTok scrolling, phone use, overthinking about tasks	Anxiety, stress, insufficient rest for activities
Itan	Anxiety about internship demands; lack of sleep discipline; frequent late-night socializing	Late-night socializing with friends disrupting sleep schedule	Socializing, social media scrolling	Morning fatigue, productivity disruption, concentration difficulties

These patterns support theoretical models linking bedtime procrastination to self-regulatory failure rather than strategic delay (Asri et al., 2025). Participants exhibited classic characteristics: intentions misaligned with behavior due to insufficient planning, monitoring,

and reflection capabilities. This mechanistic understanding informed module design, prioritizing SRL skill development over motivation enhancement alone. The prominence of technology-related distractions (social media, smartphones) aligns with recent evidence documenting technology use as a primary bedtime procrastination mechanism among young adults (Chung et al., 2020).

Importantly, procrastination in this sample was not strategic delay involving conscious trade-offs for perceived benefits (Hamvai et al., 2023), but resulted from inadequate self-regulation capacity compounded by environmental temptations. This distinction has theoretical significance: strategic delay involves deliberate decisions, whereas our participants exhibited self-regulatory failure awareness of negative consequences yet inability to align behavior with intentions.

3.3 Self-Regulated Learning Deficits

SRL phase analysis (Table 4) revealed systematic deficits across forethought, performance, and self-reflection phases. In forethought, participants lacked clear sleep planning and specific goal-setting strategies, often distracted by competing activities. During performance, self-monitoring was insufficient participants engaged in sleep-disrupting activities (social media, socializing) without effective self-control mechanisms. In self-reflection, although participants recognized negative impacts of late sleep, they struggled to adaptively adjust strategies.

Table 4. Self-Regulated Learning Phase Analysis

SRL Phase	Aley	Adia	Itan
Forethought	Lack of clear sleep planning; distracted by social media and overthinking	Lack of clear sleep planning; many internship tasks affecting sleep time	Lack of clear sleep planning; frequent socializing and social distractions
Performance	Spending time on social media and overthinking before bed, resulting in late sleep	Distracted by phone and TikTok scrolling; anxiety about tasks disturbing sleep	Frequently socializing with friends until late night, causing delayed and disrupted sleep
Self-Reflection	Aware that late sleep disrupts health and productivity, but unable to change habits	Aware that delaying sleep causes fatigue and stress, but difficult to manage better sleep time	Aware that staying up late negatively impacts health, but difficult to manage sleep time disciplinedly

These findings corroborate previous research demonstrating that individuals with low self-regulation experience higher bedtime procrastination levels (Fox, 2020). The systematic deficits across all three SRL phases suggested that comprehensive intervention targeting each phase was necessary. (Hill et al., 2025) review emphasizes that effective SRL interventions must address planning (forethought), execution (performance), and evaluation (self-reflection) to create sustainable behavioral change.

T(Hanifah & Rusmawati, 2019)end (Hanifah & Rusmawati, 2019) cyclical SRL model to health behavior regulation. Our data validate that SRL processes forethought planning, performance monitoring, and self-reflection operate in sleep management similarly to academic contexts. This domain-generalizability supports recent arguments that SRL represents fundamental cognitive-behavioral mechanisms applicable across life domains.

3.4 Module Development and Validation

Based on needs analysis (Table 5), a five-module SRL intervention was developed addressing identified deficits: (1) Introduction to Bedtime Procrastination (concept, causes, impacts); (2) Setting Healthy Sleep Goals (SMART goals, "If-Then" technique, routine establishment); (3) Overcoming Distractions and Improving Self-Control (distraction identification, self-regulation techniques, self-monitoring); (4) Stress Management and Relaxation (stress-sleep relationship, breathing techniques, mindfulness, relaxation routines); (5) Self-Reflection and Sleep Progress Evaluation (self-assessment, routine adjustment, habit journaling).

Table 5. Needs Analysis and Module Content

Problem Identified	Solution Approach	Module Content
Lack of clear sleep planning	Understanding structured sleep planning and goal-setting strategies	Understanding bedtime procrastination; SMART method for sleep goals; setting clear measurable goals
External distractions (social media, social activities)	Techniques to reduce external distractions	Impact of social media on sleep; managing external distractions using "If-Then" technique
Difficulty managing effective sleep time	Development of self-regulation strategies	Self-regulation techniques; consistent sleep time management; self-monitoring techniques
Lack of motivation and discipline	Increasing self-motivation and discipline	Understanding self-efficacy and techniques to improve self-belief; developing sleep discipline and self-control

Difficulty in self-reflection	Self-reflection techniques for healthier habits	Understanding self-reflection; self-evaluation of sleep habits; using journal to monitor habits

Table 6. Five-Module Intervention Design

Module	Sub-Content
Module 1: Introduction to Bedtime Procrastination	Definition of bedtime procrastination; Kroese's (2014) theory; causing factors; negative impacts
Module 2: Setting Healthy Sleep Goals	Understanding SMART goals; setting clear measurable sleep goals; "If-Then" technique for distractions; creating consistent sleep routine
Module 3: Overcoming Distractions and Improving Self-Control	Identifying sleep-hindering distractions; self-regulation techniques; self-monitoring for tracking habits; using self-control techniques
Module 4: Stress Management and Relaxation Before Sleep	Understanding stress and sleep impact; deep breathing techniques; mindfulness meditation; building nightly relaxation routine
Module 5: Self-Reflection and Sleep Progress Evaluation	Using self-reflection techniques; evaluating sleep progress via self-assessment; adjusting routines based on evaluations; recording and evaluating habit changes

Expert validation by the school principal (also a psychologist) yielded highly positive results (Table 7). All content substance, learning design, and psychological relevance aspects received perfect scores (5/5). Visual and appearance received slightly lower rating (4/5), suggesting minor aesthetic improvements needed. Overall module evaluation averaged 4.92/5, indicating strong content validity and expert endorsement.

Table 7. Expert Evaluation Results

Assessment Aspect	Statement	Score
Content Substance	Material on bedtime procrastination concept/causes aligns with psychological theory	5
	Material provides clear understanding of self-regulation and bedtime procrastination relationship	5
	Module contains useful stress management information related to sleep	5
Learning Design	Module provides practical steps applicable in daily life	5
	SRL techniques in module can help reduce bedtime procrastination	5
	"If-Then" technique effective in helping overcome sleep distractions	5
Psychological Relevance	Module clearly explains psychological impacts of sleep deprivation (anxiety, stress)	5
	Relaxation and mindfulness techniques help reduce anxiety and improve sleep quality	5
Activities and Evaluation	Discussion and self-reflection activities help identify bedtime procrastination factors	5
	Self-assessment and journaling provide opportunity for independent sleep progress evaluation	5
Visual and Appearance	Visual design supports understanding with appropriate fonts, colors, illustrations	5
	Module appearance makes it easy to follow sleep time management steps	4

User evaluation (Table 8) demonstrated unanimous positive reception. All three participants rated all aspects at maximum score (5/5), indicating strong user acceptance and perceived effectiveness. Participants reported material was interesting, easy to understand, and strategies were applicable. Reflection exercises enhanced self-awareness, and action plans facilitated sleep management planning.

Table 8. User Evaluation Results

Assessment Aspect	Statement	Aley	Adia	Itan
Content Substance	Material on bedtime procrastination concept/causes aligns with psychological theory	5	5	5
	Material provides clear understanding of self-regulation and bedtime procrastination relationship	5	5	5
	Module contains useful stress management information related to sleep	5	5	5
Learning Design	Module provides practical steps applicable in daily life	5	5	5
	SRL techniques can help reduce bedtime procrastination	5	5	5
	"If-Then" technique effective in overcoming sleep distractions	5	5	5
Psychological Relevance	Module clearly explains psychological impacts of sleep deprivation	5	5	5
	Relaxation and mindfulness techniques help reduce anxiety and improve sleep quality	5	5	5
Activities and Evaluation	Discussion and self-reflection activities help identify bedtime procrastination factors	5	5	5
	Self-assessment and journaling provide opportunity for	5	5	5

	independent evaluation			
Visual and Appearance	Visual design supports understanding with appropriate elements	5	5	5
	Module appearance makes it easy to follow sleep management steps	5	5	5

The high expert and user evaluations (M=4.92-5.00/5.00) suggest strong acceptability and feasibility for real-world implementation. The module's low-cost, non-pharmacological nature makes it particularly suitable for resource-constrained settings and populations preferring behavioral over medical interventions (Sari, 2025).

One-week post-implementation follow-up (Table 9) revealed differential strategy effectiveness across participants. Aley successfully implemented journaling and breathing techniques, reporting increased sleep awareness and reduced pre-sleep anxiety. Journaling facilitated reflection on sleep patterns, while breathing techniques promoted relaxation. Adia and Itan prioritized distraction avoidance strategies (limiting social media, declining late-night social invitations), experiencing notable reductions in sleep delay. Although both occasionally tried breathing techniques, effects were less pronounced than environmental restructuring strategies.

Table 9. Strategy Implementation Results (One-Week Follow-Up)

Strategy	Implementation Results
Journaling	Aley: Helped reflect on sleep habits and increased self-awareness of sleep patterns
Breathing Technique	Aley: Effective in calming before sleep and reducing anxiety; Adia & Itan: Occasionally tried, helped calm but less significant effects
Avoiding External Distractions	Adia & Itan: Effective in reducing social media and social activities that disrupt sleep time

These differential responses illuminate important theoretical and practical considerations. Aley's positive response to reflective strategies (journaling, breathing) while Adia and Itan benefited more from environmental restructuring suggests individual differences in self-regulatory resource availability moderate intervention effectiveness. This aligns with recent meta-analytic evidence indicating heterogeneous SRL intervention effects (effect sizes δ=0.31-0.89) partly explained by person-strategy fit (Sari, 2025).

The contrasting strategy preferences also support dual-process models of self-regulation and self-control. Forethought strategies (goal-setting, planning) address motivational and cognitive aspects, while performance-phase techniques (distraction management, implementation intentions) target momentary self-control (Pintrich et al., 2018). Effective interventions must accommodate both reflective (long-term planning) and impulsive (momentary temptation resistance) systems, allowing individuals to select strategies matching their regulatory profiles.

Furthermore, findings suggest that personalized strategy selection rather than prescriptive universal protocols provides optimal intervention structure. Initial assessment of individual self-regulatory profiles (trait self-control, regulatory resource availability) could optimize intervention matching, potentially improving effectiveness and reducing attrition (Husain et al., 2025).

This research advances SRL theory in three substantive ways. First, it empirically validates extending academic SRL frameworks to health behavior domains, specifically sleep regulation among working adults. While previous studies applied SRL to student populations (R. Halidi, 2022), our findings demonstrate that forethought-performance-reflection cycles effectively address occupational self-regulation challenges in non-academic settings. This supports growing evidence that SRL processes are domain-general cognitive mechanisms (Nisva & Okfrima, 2019).

Second, differential strategy effectiveness illuminates personalization debates in self-regulation literature. Individual differences in self-regulatory resource availability moderate intervention effectiveness, suggesting that one-size-fits-all approaches may be suboptimal. Third, this study integrates self-regulation and self-control theories in explaining bedtime procrastination, reconciling competing explanations by demonstrating that effective interventions must address both reflective and impulsive systems.

Practically, the validated SRL module offers several applications for young professionals experiencing bedtime procrastination. Organizational wellness programs in emotionally demanding sectors (education, healthcare, social services) can adapt this modular format for scalable sleep health interventions. The self-paced, individualized structure accommodates shift work and irregular schedules, addressing critical implementation barriers in traditional group-based interventions (Panadero, 2017).

The integration of culturally relevant strategies (addressing social obligation norms around evening gatherings) demonstrates contextual adaptation importance in health behavior interventions. Indonesian cultural contexts, where communal activities often extend into late evening, require culturally sensitive distraction management approaches balancing social connectedness with sleep health (Kamphorst et al.,

2018). This cultural tailoring could inform evidence-based sleep intervention adaptation across diverse populations.

Several limitations warrant consideration. First, the small sample size (n=3) and R&D design limit generalizability findings should be interpreted as preliminary evidence supporting module feasibility and acceptability rather than definitive effectiveness. Second, one-week implementation period was insufficient to assess long-term behavioral maintenance. Longitudinal studies examining sustained strategy use and sleep quality improvements are needed. Third, reliance on self-report data may introduce social desirability bias. Objective sleep measures (actigraphy, polysomnography) would strengthen future research. Fourth, the study focused on special education teachers, limiting generalizability to other young adult populations. Fifth, lack of control group prevents causal inferences about module effectiveness.

4. Conclusions

This study successfully developed and validated a self-regulated learning-based module addressing bedtime procrastination among young adult special education professionals. All three participants exhibited critically high bedtime procrastination levels (scores 37-45) attributable to internal factors (anxiety, poor time management, negative sleep perceptions) and external factors (social media distractions, peer social activities). Systematic self-regulated learning deficits were evident across forethought, performance, and self-reflection phases, indicating participants lacked structured sleep planning, adequate self-monitoring, and effective self-control mechanisms.

The five-module SRL intervention encompassing bedtime procrastination introduction, healthy sleep goal-setting, distraction management, stress reduction, and self-reflection techniques received highly positive expert validation (M=4.92/5) and unanimous user acceptance (M=5.00/5). One-week implementation revealed differential strategy effectiveness: journaling and breathing techniques enhanced sleep awareness and reduced anxiety for one participant, while distraction avoidance strategies proved more effective for two others in reducing social media and social activity disruptions. These findings advance self-regulated learning theory by validating its extension from academic to health behavior domains, demonstrating that forethought-performance-reflection cycles effectively address occupational sleep regulation challenges among working adults. Practical implications include adaptable modular formats for organizational wellness programs in emotionally demanding professions, personalized strategy selection accommodating individual self-regulatory profiles, and culturally sensitive approaches balancing social connectedness with sleep health.

Future research should address limitations through larger sample sizes, longitudinal designs examining behavioral maintenance, objective sleep measurements, diverse occupational populations, and controlled experimental designs. Additionally, technology integration (mobile applications for sleep tracking), comprehensive mental health and environmental factor exploration, and cross-cultural adaptation studies would strengthen evidence-based bedtime procrastination interventions. This module provides practical, low-cost, non-pharmacological guidance for young professionals balancing work demands and personal well-being, with potential applications across educational institutions, corporate wellness programs, and primary care settings.

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Author Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	W
N	✓	✓	✓	✓	✓	✓		✓	✓
HB	✓	✓		✓					✓

C : Conceptualization
M : Methodology
So : Software
Va : Validation
Fo : Formal analysis
I : Investigation
R : Resources
D : Data Curation
W : Writing - Review

Conflict of Interest Statement

The author declares that there is no conflict of interest.

Informed Consent *(if applicable)* (10 PT)

The author has obtained informed consent from all individuals involved in this study before they were included as participants. All participants were given clear explanations regarding the research objectives, the procedures to be followed, and their rights, and they provided written consent to participate in this study.

Data Availability

The data supporting the findings of this study is available upon request from the corresponding author. These data are not publicly accessible as they contain information that may impact the privacy of the research participants.

Ethical Approval

All procedures followed the Declaration of Helsinki and Indonesian research ethics guidelines. Prior to participation, all respondents received comprehensive written and verbal information regarding study purpose, procedures, potential risks/benefits, confidentiality measures, and withdrawal rights. Written informed consent was obtained before data collection. Pseudonyms (Aley, Adia, Itan) protected participant confidentiality. Data were stored in password-protected digital files accessible only to the research team, with five-year retention post-publication before secure deletion. The school principal, serving as expert validator, provided separate consent acknowledging dual-role considerations, with assurances that teacher participation was voluntary and would not affect employment status.

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