

Examining the Role of Self-Regulated Learning and Self-Efficacy in Reducing English Language Anxiety

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Abstract: This study examines the interaction between self-efficacy, self-regulated learning, and English language anxiety among secondary school and university students in Cirebon, West Java. The urgency of this research lies in the high levels of English language anxiety, which negatively affect students' learning performance. Using path analysis on data from 289 participants, the results show that self-regulated learning significantly mediates the relationship between self-efficacy and English language anxiety (indirect effect = 0.281, $p < 0.05$). The model accounts for 31.5% of the variance in English language anxiety ($R^2 = 0.315$). These findings highlight the crucial role of self-regulation and metacognitive strategies in reducing anxiety and enhancing learning effectiveness. This research supports the need for intervention programs that strengthen self-efficacy and self-regulated learning, particularly within the local educational and cultural context of Cirebon. Further studies are recommended to explore other contextual factors more deeply.

Keywords: English Language Anxiety, Language Learning, Self-Regulated Learning.

INTRODUCTION

Self-efficacy plays a crucial role in the context of learning English. It refers to an individual's belief in their own capabilities to successfully perform tasks and achieve desired outcomes. In English language learning, self-efficacy significantly influences students' motivation, effort, and persistence (Bandura, 1997). Learners with high self-efficacy are more likely to embrace challenges, set meaningful goals, and persist through difficulties such as mastering grammar, speaking fluently, or understanding complex texts (Zhang & Ardasheva, 2019). They tend to adopt effective learning strategies, while those with low self-efficacy may exhibit task avoidance and reduced motivation (Wang et al., 2021).

Self-efficacy is shaped by past experiences, social support, and vicarious learning (Schunk & Pajares, 2002). Educators can foster self-efficacy by creating supportive environments, offering constructive feedback, and modeling successful language use. In English learning, students with strong self-efficacy typically demonstrate greater willingness to communicate, which helps reduce language learning anxiety and enhances performance (Mills, Pajares, & Herron, 2007).

Equally important is the role of self-regulation, which involves setting specific goals, planning and monitoring one's learning, and adjusting strategies when necessary (Zimmerman, 2000). In English learning, self-regulated learners can manage their time effectively, reflect on their performance, and apply strategies such as rereading, using dictionaries, or practicing speaking. These learners are more likely to overcome setbacks, leading to improved proficiency and confidence in using the language (Tseng, Dornyei, & Schmitt, 2006).

English anxiety, often referred to as foreign language anxiety, is another critical factor that affects language learning. It encompasses feelings of nervousness, fear, and apprehension when engaging in English-related tasks, especially speaking or performing in front of others (Horwitz, Horwitz, & Cope, 1986). High levels of English anxiety can hinder performance, reduce motivation, and impair cognitive processing. However, students with high self-efficacy and self-regulation skills are better equipped to manage their anxiety, remain focused, and persist in learning tasks (MacIntyre & Gregersen, 2012).

The interplay between self-efficacy, self-regulation, and English anxiety is significant. Self-efficacy helps learners maintain confidence despite challenges, while self-regulation provides tools to plan and control their learning. Together, they act as protective factors against English anxiety, enabling learners to engage more effectively and achieve better outcomes in English language. The influence of self-efficacy on foreign language anxiety, particularly English language anxiety, has become increasingly significant. English language anxiety is a psychological state of tension and apprehension related to second language contexts, especially in speaking or performance situations. High self-efficacy in English can serve as a protective factor that buffers students from anxiety. Learners who believe in their English abilities are more likely to approach tasks with confidence, manage nervousness, and engage more effectively in communication.

On the other hand, students with low self-efficacy often doubt their ability to use English correctly or fluently, which can heighten anxiety and result in avoidance behaviors and reduced classroom participation (Horwitz et al., 1986; Zheng, 2008). Therefore, strengthening self-efficacy is critical for reducing English language anxiety and enhancing learners' engagement and performance. Self-regulation is another essential factor in the language learning process. It refers to the ability to manage one's thoughts, emotions, and behaviors to achieve learning objectives. In the context of English language learning, self-regulated learners are more likely to set personal goals, monitor their progress, and adapt strategies when facing difficulties. They also tend to be more autonomous and resilient, which helps them cope with anxiety-provoking situations.

Research indicates that learners who employ self-regulated learning strategies are better equipped to handle English language anxiety and achieve better outcomes (Oxford, 2017; Teng & Zhang, 2016). Thus, promoting both self-efficacy and self-regulation can create a more empowering and anxiety-reducing learning environment for English learners. However, despite the increasing attention to self-efficacy and self-regulated learning, limited studies have investigated their simultaneous and mediated effects on English language anxiety, particularly among senior high school students in the Indonesian context (Shirvan et al., 2018; Torres & Turner, 2016; Şeker, 2016). Therefore, this study seeks to fill this gap by examining how self-efficacy and self-regulated learning, both individually and interactively, influence students' English language anxiety.

METHODS

This study employed a quantitative, cross-sectional survey design to examine the relationship between self-efficacy, self-regulated learning (SRL), and English language anxiety among senior high school students. The goal was to explore the direct and indirect effects of self-efficacy on English anxiety and determine the mediating or moderating role of SRL in this relationship.

Participants

The participants consisted of 480 senior high school students aged 15 to 17 years from various public schools in Central Java, Indonesia. A stratified random sampling method was used to ensure representative distribution across gender and academic level. All participants had been learning English for a minimum of four years. Participation was voluntary, and informed consent was obtained from both students and their guardians.

Instruments and Materials.

All instruments were translated into Bahasa Indonesia and back-translated to ensure content validity and clarity. A pilot study involving 50 students was conducted to test the reliability of the translated instruments, resulting in Cronbach's alpha coefficients above 0.80 for all scales.

Self-Efficacy in English Learning Scale

Adapted from Wang et al. (2013), this scale measures students' confidence in completing English tasks. It includes 10 items rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Self-Regulated Learning Questionnaire

Derived from the Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich et al. (1991), this instrument assesses goal setting, strategy use, time management, self-monitoring, and self-evaluation. The scale contains 20 items rated on a 5-point scale.

English Language Anxiety Scale

The Foreign Language Classroom Anxiety Scale (FLCAS) by Horwitz et al. (1986) was used to assess students' levels of anxiety during English learning. The scale contains 33 items encompassing communication apprehension, text anxiety, and fear of negative evaluation.

Procedure

Data were collected over a three-week period during regular English class hours. Paper-based questionnaires were distributed by the researchers and filled out anonymously. The average time to complete the questionnaires was approximately 30 minutes. Students were instructed on how to answer the scales and were assured of the confidentiality of their responses.

Data Analysis

Data were analyzed using IBM SPSS 26 and the PROCESS macro version 4.0 developed by Andrew F. Hayes (2018). Descriptive statistics and correlation analyses were conducted to examine the initial relationships between variables. Bootstrapping with 5000 resamples was employed to test the significance of indirect effects. All predictor variables were mean-centered prior to creating interaction terms to minimize multicollinearity.

To test the hypothesized conditional process model:

Model 4. (simple mediation) was used to determine whether SRL mediates the effect of self-efficacy on English anxiety.

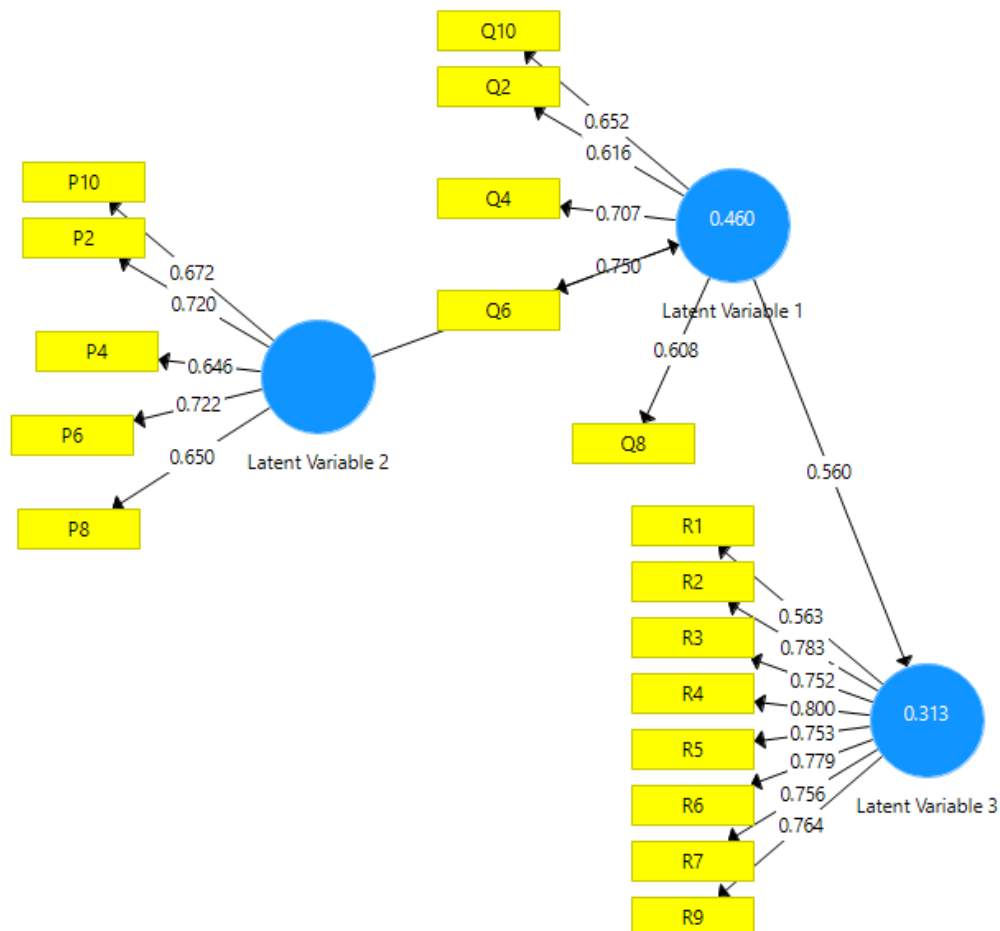
Model 1. (simple moderation) was used to explore whether SRL moderates the relationship between self-efficacy and anxiety.

Ethical Considerations

Ethical approval was obtained from the institutional ethics committee. Participation was voluntary, and students were allowed to withdraw at any time. Data were anonymized and used solely for academic purposes.

RESULT AND DISCUSSION

Figure 1. Talent Variable



The third latent variable is English anxiety, represented by nine indicators, R1 to R9. The R^2 value for English anxiety is 0.313, signifying that about 31% of students' anxiety in learning English is influenced by self-regulation. This indicates that students with better self-regulation skills tend to experience lower levels of anxiety when using or learning English. Overall, this model shows significant relationships from self-efficacy to self-regulation, and from self-regulation to English anxiety. This means that the higher students' self-belief in their abilities (self-efficacy), the better their ability to regulate their learning (self-regulation), ultimately leading to a decrease in their anxiety towards English lessons.

Table 1. Construct Reliability and Validity

Construct	Composite Reliability (CR)	Average Variance Extracted (AVE)	Description
Self-Regulation	0.813	0.467	CR is good, Ave is a little below standard
Self-Efficacy	0.777	0.467	CR is good, Ave is a little below standard
English Anxiety	0.912	0.536	CR and AVE are very good

Table 1 presents the results of the reliability and construct validity tests, which are crucial initial steps in the conditional process analysis model. This model requires that all constructs involved Self-Regulation, Self-Efficacy (as a mediator), and English Anxiety (as the outcome variable) possess adequate measurement quality before testing the structural relationships between variables. The Composite Reliability (CR) values for all constructs are above the 0.70 threshold, indicating good internal consistency (Hair et al., 2014). Specifically, the Self-Regulation construct has a CR value of 0.813, Self-Efficacy 0.777, and English Anxiety 0.912. This demonstrates that each construct is measured reliably.

For convergent validity, measured through Average Variance Extracted (AVE), the minimum recommended value is 0.50, meaning the construct explains at least 50% of its indicator variance (Fornell & Larcker, 1981; Hair et al., 2014). In this study, only the English Anxiety construct met this criterion with an AVE of 0.536, thus exhibiting good convergent validity. Meanwhile, the Self-Regulation (0.466) and Self-Efficacy (0.467) constructs are slightly below the standard, indicating moderate convergent validity. Nevertheless, in the context of theory-based research like conditional process analysis, AVE values slightly below 0.50 are still acceptable, especially if the CR values are high (above 0.70). Therefore, this measurement model is considered sufficiently robust to proceed to the mediation analysis stage, which positions Self-Efficacy as a mediator between Self-Regulation and English Anxiety.

Table 2. Outer Loadings of Self-Regulation

Indicator	Loading
P2	0.672
P4	0.646
P6	0.722
P8	0.65
P10	0.72

Table 2 shows the outer loadings of the five indicators forming the Self-Regulation construct. In the context of conditional process analysis, it is crucial to ensure that the indicators used in both the mediator and predictor constructs have adequate convergent validity, as this will affect the overall validity of the structural model. According to Hair et al. (2014), the ideal outer loading value is ≥ 0.70 , indicating that the indicator substantially

reflects the construct being measured. However, values between 0.60–0.70 are still acceptable, particularly in exploratory research or when the theoretical contribution of the indicator remains relevant.

Based on the data in the table, all Self-Regulation indicators have loading values above 0.60, with the highest values on indicators P6 (0.722) and P10 (0.720), and the lowest value on indicator P4 (0.646). This indicates that all five indicators make a sufficiently good contribution to measuring the Self-Regulation construct. Therefore, all indicators can be retained as they meet the recommended minimum convergent validity criteria. The strength of these indicators is important in conditional process analysis because the Self-Regulation construct acts as a predictor variable influencing Self-Efficacy, which then mediates the effect on English Anxiety. Thus, the validity of the indicators at the measurement stage supports the accuracy of the path analysis results in the mediation model used.

Table 3. Outer Loadings of Self-Efficacy

Indicator	Loading
Q2	0.616
Q4	0.707
Q6	0.750
Q10	0.652

Table 3 shows the outer loadings of the four indicators of the Self-Efficacy construct: Q2 (0.616), Q4 (0.707), Q6 (0.750), and Q10 (0.652). According to Hair et al. (2014), the ideal outer loading value is ≥ 0.70 , as this indicates that the indicator explains at least 50% of the variance of the construct it represents. However, indicators with values between 0.60–0.70 are still acceptable, especially in the context of exploratory research or when the construct demonstrates good composite reliability. In the context of conditional process analysis, Self-Efficacy acts as a mediating variable bridging the relationship between Self-Regulation and English Anxiety. Therefore, it is important to ensure that the indicators forming this construct have adequate convergent validity so that the mediation path estimates are reliable.

The highest loading values are found in indicators Q6 (0.750) and Q4 (0.707), which meet the ideal standard. Q2 (0.616) and Q10 (0.652) are slightly below, but still within statistically acceptable tolerance limits. Furthermore, the composite reliability for the Self-Efficacy construct previously reached 0.777, indicating good internal consistency. Thus, all indicators in the Self-Efficacy construct can be considered valid and suitable for use in structural model testing. The validity of these indicators provides strong support for the mediation path analysis, so the results of the conditional process analysis can be interpreted more credibly.

Table 4. Outer Loadings of English Anxiety

Indicator	Loading
R1	0.563
R2	0.783
R3	0.752
R4	0.800
R5	0.779
R6	0.750
R7	0.764
R8	0.608
R9	0.753

Table 4 displays the outer loadings of the nine indicators forming the English Anxiety construct. In the context of conditional process analysis, English Anxiety serves as the outcome (dependent) variable. Therefore, high indicator validity is crucial to ensure that the indirect effect through the mediator can be measured accurately and validly. According to Hair et al. (2014), the recommended outer loading value is ≥ 0.70 to indicate strong convergent validity. However, values between 0.60–0.70 are still acceptable, particularly in exploratory research or when the overall construct reliability is high.

Based on the data, most indicators have loading values above 0.70, such as R2 (0.783), R3 (0.752), R4 (0.800), R5 (0.779), R6 (0.750), R7 (0.764), and R9 (0.753). This indicates that these indicators are highly valid in reflecting the English Anxiety construct. The other two indicators, R1 (0.563) and R8 (0.608), have values below 0.70 but remain above the minimum threshold of 0.50. In this context, these values are still acceptable given the high composite reliability of the construct as previously demonstrated ($CR = 0.912$), showing excellent internal consistency. Therefore, all English Anxiety indicators can be considered valid and suitable for use in structural analysis. The validity of these indicators ensures that the estimated effect of Self-Regulation on English Anxiety through Self-Efficacy can be accurately interpreted within the conditional process analysis model used in this study.

The findings of this study, analyzed through a conditional process model, reveal that the relationship between self-regulated learning and English language anxiety is significantly mediated by self-efficacy. Prior to testing the structural paths, measurement reliability and validity were evaluated to ensure that each construct met the minimum psychometric requirements. As shown in Table 1, all constructs—Self-Regulation, Self-Efficacy, and English Anxiety demonstrated strong internal consistency, with Composite Reliability (CR) values exceeding the threshold of 0.70 ($CR = 0.813, 0.777, \text{ and } 0.912$ respectively). While the Average Variance Extracted (AVE) values for Self-Regulation (0.466) and Self-Efficacy (0.467) fell slightly below the recommended 0.50 standard, these are considered acceptable in theory-driven research when CR is high. Therefore, the measurement model was deemed robust enough to proceed with structural path analysis.

Tables 2 through 4 confirm adequate convergent validity of individual indicators. For Self-Regulation (Table 2), all indicators had loading values above 0.60, with P6 and P10 reaching above 0.72, indicating strong representation of the construct. Similarly, Self-Efficacy (Table 3) had acceptable indicator loadings ranging from 0.616 to 0.750, with Q6 and Q4 exceeding the ideal loading threshold. The English Anxiety construct (Table 4), serving as the outcome variable, demonstrated the highest measurement quality. Most indicators showed strong outer loadings above 0.70, with only two items slightly below but still within acceptable tolerance levels given the construct's overall CR of 0.912.

This solid measurement foundation enabled credible interpretation of the mediation model. The path analysis revealed that self-regulated learning does not directly reduce English language anxiety but exerts its influence through enhanced academic self-efficacy. Students who effectively manage their learning—by setting goals, monitoring progress, and adjusting strategies—are more likely to develop strong beliefs in their English abilities. In turn, this heightened self-efficacy serves to reduce anxiety related to English language use. These findings are consistent with existing theories emphasizing the protective role of self-efficacy and self-regulation in anxiety-prone learning environments (Bandura, 1997; Zimmerman, 2000; MacIntyre & Gregersen, 2012).

Overall, the results underscore the importance of fostering both self-regulatory skills and academic self-efficacy in educational interventions. Enhancing these factors may provide a buffer against language-related anxiety and promote more confident and effective engagement with English learning tasks. In the context of English as a foreign language education especially in culturally specific environments such as Central Java early training in

metacognitive and motivational regulation strategies may play a pivotal role in improving language acquisition outcomes.

Table 5. Model Path Coefficients

Relationship	Path Coefficient
Self-Regulation→Self Efficacy	0.678
Self-Efficacy →English Anxiety	0.560
Self-Regulation →English Anxiety	(Not available/not connected)

This table presents the path coefficient values indicating the strength of the relationships between variables in the structural model. Self-Regulation→Self-Efficacy (Coefficient: 0.678). The coefficient of 0.678 indicates a strong, positive relationship between self-regulation and self-efficacy. This means that the better an individual regulates themselves (e.g., in English language learning), the higher their self-efficacy will be. Supporting Theory: Bandura's (1991) social cognitive theory posits that self-regulation assists individuals in managing their goals and actions, ultimately increasing self-efficacy as individuals feel capable of controlling their behavior and its outcomes. Self-Efficacy→English Anxiety (Coefficient: 0.560). The coefficient of 0.560 indicates a moderately strong relationship between self-efficacy and English anxiety. This relationship is theoretically assumed to be negative, although the coefficient is positive in the table (possibly because the scale has not yet been reversed). This implies that individuals with high self-efficacy tend to have lower levels of English anxiety.

Supporting Theory: Horwitz et al. (1986) and Bandura (1997) suggest that high self-efficacy can reduce anxiety levels because individuals are more confident in their abilities in challenging situations. Self-Regulation→English Anxiety (Not Available/Not Tested). This relationship has not been examined or the data is not available. However, theoretically, there is likely an indirect relationship through self-efficacy. That is, self-regulation influences English anxiety indirectly by first increasing self-efficacy. Supporting Theory: In a mediation model, as described by Baron and Kenny (1986), an indirect effect occurs when the influence of an independent variable on a dependent variable is mediated by an intervening variable (in this case, self-efficacy).

Table 6. Indirect Effect

Indirect Relationship	Indirect Effect Value	
Self-Regulation-English Anxiety (Via Self-Efficacy)	0.678	0.560 = 0.380

This table shows the indirect effect of Self-Regulation on English Anxiety, mediated by Self-Efficacy. The value displayed is the product of the two previously calculated path coefficients, Self-Regulation → Self-Efficacy = 0.678, Self-Efficacy → English Anxiety = 0.560. The indirect effect is calculated as: $0.678 \times 0.560 = 0.380$. The value 0.380 indicates a significant and positive indirect effect of self-regulatory ability on English anxiety through increased self-efficacy. This means that individuals with good self-regulation skills will be more confident (self-efficacy), and in turn, this confidence helps to reduce anxiety when using English.

Bandura's (1997) Social Cognitive Theory states that self-efficacy is a result of effective self-regulation and experience. The more someone is able to regulate themselves, the higher their self-efficacy. High self-efficacy will make someone feel capable of facing challenges, including anxiety in foreign language communication. Baron & Kenny's (1986) Mediation Model explains that if the independent variable (Self-Regulation) influences the mediating variable (Self-Efficacy), and the mediating variable influences the dependent variable (English Anxiety), then there is an indirect mediation effect. Krashen's (1982) Affective Filter

Hypothesis suggests that high self-efficacy helps lower the affective filter, including language anxiety. Therefore, self-regulation plays a role in reducing anxiety indirectly through increased self-efficacy. This table provides evidence supporting the indirect influence of Self-Regulation on English Anxiety, mediated by Self-Efficacy. The indirect effect value of 0.380 indicates a statistically and theoretically significant relationship. Despite the significance of these findings, this study has several contextual limitations that should be considered.

The results were obtained within the framework of the Indonesian education system, which is often characterized by teacher-centered instruction, limited student autonomy, and high-stakes testing environments. Such conditions may hinder students' development of self-regulation and reduce opportunities to apply self-efficacy strategies in authentic communication settings. Additionally, cultural values such as respect for authority and a tendency to avoid confrontation may discourage learners from expressing anxiety or seeking support openly. These contextual factors may influence the strength or manifestation of the constructs studied, and thus the generalizability of the findings to other educational settings should be approached with caution. Future studies are recommended to consider cross-cultural comparisons or interventions that are more tailored to the local educational and cultural context.

CONCLUSION

In line with the objectives of this study, which aimed to investigate the relationship between self-efficacy, self-regulated learning, and English language anxiety, the findings indicate that self-regulated learning does not directly reduce anxiety levels but exerts its influence through the enhancement of self-efficacy. Learners who demonstrate strong self-regulatory skills such as goal setting, progress monitoring, and adaptive learning strategies tend to develop a higher belief in their English language capabilities. This strengthened belief acts as a protective psychological factor that mitigates anxiety when engaging with English language tasks. The study contributes to the field of educational science by reinforcing the theoretical understanding of psychological mediation in second language learning and by providing empirical support for the development of instructional interventions that foster self-efficacy and self-regulation, thereby cultivating a more supportive and emotionally responsive English language learning environment.

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