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The influence of self-efficacy and academic boredom on career aspirations through self-regulation of senior high school students in Semarang

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Article Info	Abstract
Keywords: academic boredom, career aspiration, self- efficacy, self-regulation.	Career aspirations are an important aspect of adolescent development, shaped by psychological resources and academic experiences. This study aimed to examine the direct and indirect associations of self-efficacy and academic boredom with career aspirations through self-regulation among eleventh-grade students in public senior high schools in Semarang, Indonesia. A quantitative explanatory research design was employed, involving 184 students from a population of 5,928 students across 16 schools, with the sample size determined using Slovin's formula. Data were analyzed using path analysis and the Sobel test. The results showed that self-efficacy was positively associated with self-regulation ($\beta = .398$), whereas academic boredom demonstrated a negative association ($\beta = .483$), with both predictors explaining 47.5% of the variance in self-regulation. Self-regulation was positively associated with career aspirations ($\beta = .322$), while the direct associations of self-efficacy ($\beta = .059$) and academic boredom ($\beta = .130$) were not statistically significant. The model explained 19.4% of the variance in career aspirations. The mediation analysis suggested indirect relationships through self-regulation. These findings highlight the potential importance of strengthening self-regulatory competencies in school career guidance and counseling programs to support students' career development.

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Introduction

Career aspiration refers to an individual's ideal goals or future ambitions, particularly among high school adolescents. These aspirations are shaped by an understanding of one's potential, interests, environmental influences, experiences, and education. Career aspirations play a vital role in shaping behavior, guiding educational choices, and helping students pursue life goals in accordance with their talents and capacities. However, the development of career aspirations may be hindered by academic boredom. This form of fatigue in learning is a mental state often experienced by students, leading to disengagement from study and, in turn, a decline in learning motivation (West & West, 2016). To maintain a directed and productive career orientation, it is therefore necessary to integrate abilities, motivation, self-efficacy, self-regulation, and emotional experiences.

Self-efficacy is central in influencing motivation, persistence, and enthusiasm for learning, and it significantly contributes to the formation of career aspirations. Students with higher self-efficacy tend to be more confident in planning steps, overcoming challenges, and setting directions and goals for their future lives. Anggraini (2022) emphasizes that self-efficacy is a determining factor in academic success: students with strong self-efficacy generally achieve better academic outcomes than those with lower self-efficacy. Similarly, Baron in Zhao et al (2005) defines academic self-efficacy as an individual's belief in their capacity to complete academic tasks, which also reflects their perceived competence. Developing self-efficacy is therefore crucial,

not only for achieving academic performance but also for facing various challenges—whether complex, difficult, or simple.

Possessing positive career aspirations, in this sense, can serve as a driving force for students to make serious efforts in realizing their future goals. At the same time, addressing academic boredom requires self-regulation, understood as the ability to manage thoughts, feelings, and behaviors in a balanced way to avoid negative or harmful outcomes, particularly those that weaken learning motivation or cause neglect of key responsibilities. The ability to take initiative in learning achievement becomes a prioritized solution. Zimmerman (2015) highlights that self-regulation involves active processes of managing thoughts, emotions, and actions in a planned and reciprocal manner to achieve goals. Harsha (2017) similarly interprets self-regulation as the ability to control one's thoughts, attention, behaviors, and emotions in response to internal or external stimuli, in order to realize goals originating from both the self and the environment.

A study conducted by CM. Napolitano et al. (2020) on 118 adolescents with an average age of 17 in the United States shows that higher self-regulation is generally associated with stronger reports of career aspirations and expectations. This indicates that strong self-regulation helps students pursue career paths that are focused and oriented toward developmental goals. Nevertheless, certain research gaps remain to be addressed. For instance, Purnamasari et al (2026) examined the role of self-efficacy in the context of employee career development. The findings revealed that self-efficacy had no direct effect on career development, nor could it mediate the relationship between organizational commitment or competence and career development.

Based on the findings of the studies mentioned above, the present research investigates the influence of self-efficacy and academic boredom on career aspirations through self-regulation among eleventh-grade students in Semarang. The novelty lies in the discovery that students' career aspirations are more strongly influenced by self-regulation than by either self-efficacy or academic boredom. This finding contrasts with previous studies that emphasized self-efficacy as the primary determinant. In addition, learning boredom was found not to have a significant effect on career aspirations, challenging the assumption that emotional states always directly impact future planning. The novelty of this study therefore rests in positioning self-regulation as a key factor in the formation of career aspirations.

Method

This study employed a quantitative approach with a causal-comparative (*ex post facto*) design and correlational analysis to examine the relationship between self-efficacy and academic boredom on career aspirations, with self-regulation as the mediating variable. In addition, the study was categorized as correlational research, which is designed to identify relationships between two or more variables without manipulating the variables under investigation (Supardi et al, 2016). The instrument used was a Likert-scale psychological questionnaire distributed via Google Form. The study population consisted of 5,928 eleventh-grade students from public senior high schools in Semarang, with a sample of 184 students drawn from three schools (SMA Negeri 11, 15, and 16). The sample size was determined using the Slovin formula with a margin of error of 7.26%. The collected data were then analyzed through instrument testing and statistical analysis to examine the hypotheses.

Result and Discussion

The analysis began with an examination of the descriptive statistics for the four study variables: self-efficacy, academic boredom, self-regulation, and career aspirations. Data were obtained from 184 senior high school students in Semarang, Indonesia. Descriptive statistics, including minimum and maximum scores, means, and standard deviations, were calculated to provide an overview of students' characteristics across the measured constructs. These findings serve as a foundation for subsequent analyses examining the direct and indirect relationships among the variables. The descriptive results are presented in Table 1.

Table 1. Descriptive statistic

Variables	<i>n</i>	Minimum	Maximum	Mean	Std. Deviation
Self-efficacy (X1)	184	23	50	40.17	5.456
Academic boredom (X2)	184	10	44	27.54	6.623
Self-regulation (Z)	184	55	113	90.98	8.353
Career aspiration (Y)	184	83	154	117.03	14.989

Based on the descriptive analysis, it was concluded that students' self-efficacy fell into the fairly good category with a mean score of 40.17 within a range of 23–50, academic boredom was at a moderate level with a mean of 27.54 within a range of 10–44, self-regulation was in the high category with a mean of 90.98 within a range of 55–113, and career aspirations were also in the high category with a mean of 117.03 within a range of 83–154. In general, these results indicated that students demonstrated fairly good self-efficacy, strong self-regulation, and high career aspirations, although they still experienced a relatively moderate level of academic boredom.

Table 2. Normality test result

<i>n</i>	Asymp. value sig. (2-tailed)
184	.200c.d

Based on the normality test using SPSS version 25, the Asymp. Sig. (2-tailed) value obtained was 0.200, which was greater than 0.05. This indicated that the data were normally distributed. Thus, the assumption of normality in the analysis was met.

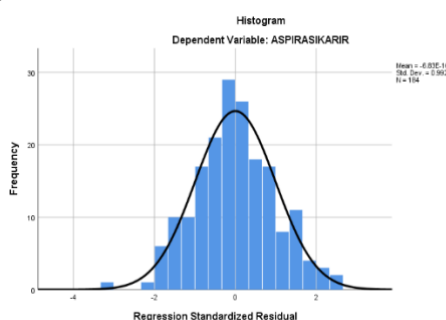


Figure 1. Normality histogram

Based on the histogram in Figure 1, the results showed that the data in this study were normally distributed because the normal curve formed a diagonal line and was not skewed either to the right or to the left.

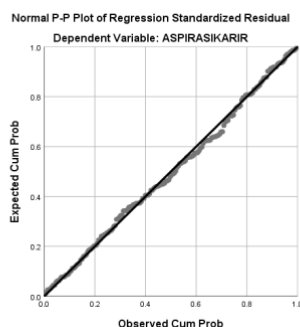


Figure 2. Normal P-P plot

Based on Figure 2, the Normal P-P Plot showed that the distribution of points was relatively close to the straight line, which indicated that the residual data were normally distributed.

Table 3. Hypothesis test

Variable	Tolerance	VIF
Self-efficacy (X1)	.740	1.352
Self-regulation (Z)	.525	1.907
Academic boredom (X2)	.669	1.494

From the results of data analysis using SPSS version 25 as presented in Table 4.3, it was found that the tolerance values were 0.740 for self-efficacy, 0.525 for self-regulation, and 0.669 for academic boredom. All these values were above the threshold of 0.10, indicating the absence of multicollinearity. Thus, it was concluded that none of the three variables showed symptoms of multicollinearity.

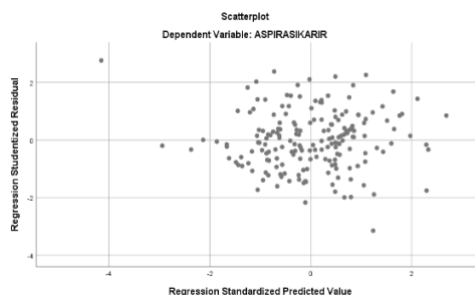


Figure 3. Heteroscedasticity plot

Based on Figure 3, the scatterplot showed that the distribution of points did not form any particular pattern and was randomly spread, indicating that there was no heteroscedasticity. Accordingly, the linear regression model used in this study fulfilled the classical assumption of being free from heteroscedasticity. Having confirmed that the data were normally distributed, the relationships among variables were linear, and heteroscedasticity was absent, the data were deemed to have met the requirements for linear regression analysis.

Table 4. Linear regression test result

Predictor	β	t	p	R	R^2	F	p
Self-regulation				0.690	0.475	82.044	<0.01
Self-efficacy (X1)	0.398	7.224	<0.01				
Academic boredom	-0.483	-8.759	<0.01				
Career aspiration				0.441	0.194	14.459	<0.01
Self-efficacy (X1)	0.059	0.758	>0.05				
Self-regulation (Z)	0.322	3.485	<0.01				
Academic boredom	-0.130	-1.591	>0.05				
Mediator	β	Zsobel	SE	p			
Self-efficacy – Self-regulation – Career aspiration	0.128	3.140	0.112	<0.01			
Academic boredom – Self-regulation – Career aspiration	-0.113	-3.232	0.109	<0.01			

The regression analysis showed that self-efficacy had a positive and significant effect on self-regulation ($\beta = 0.398$; $p < 0.001$), with a contribution of 47.5%, while the remaining 52.5% was influenced by other variables. In contrast, academic boredom did not have a significant effect on self-regulation, although the direction of the relationship was negative ($\beta = -0.483$; $p > 0.05$). In the test of direct effects on career aspirations, self-efficacy ($\beta = 0.059$; $p > 0.05$) and academic boredom ($\beta = -0.130$; $p > 0.05$) did not show significant effects, with each contributing 14.9%. On the other hand, self-regulation was found to have a positive and significant effect on career aspirations ($\beta = 0.322$; $p < 0.05$), with a contribution of 14.9%.

The path analysis further revealed that self-regulation served as an important mediator. Self-efficacy exerted a positive and significant effect on career aspirations through self-regulation ($\beta = 0.128$; $p < 0.05$), while academic boredom showed a negative but significant effect through self-regulation ($\beta = -0.113$; $p < 0.05$). These findings confirm that self-regulation is the main pathway linking both self-efficacy and academic boredom to students' career aspirations. Thus, this study demonstrated that self-efficacy strongly influenced self-regulation, and self-regulation played a key role in enhancing students' career aspirations. Conversely, academic boredom did not have a significant influence, either directly or indirectly, on self-regulation or career aspirations. The results of the analysis on the influence of self-efficacy on self-regulation indicated that self-efficacy had a positive and significant effect on students' self-regulation. The stronger the belief in one's abilities, the better the regulation of thoughts, emotions, and behaviors during learning.

Students with high self-efficacy tended to set clear learning goals, possess internal motivation, and display persistence and independence, thus supporting the first hypothesis of this study. These findings are consistent with Bandura's Social Cognitive Theory, which emphasizes that self-efficacy influences individual thought patterns and actions, as well as Zimmerman's Self-Regulation Theory, which highlights three main phases: planning, implementation, and reflection. Previous studies (Putri & Hidayat, 2026; Rahmawati & Sari, 2025; Firmansyah et al, 2026) likewise support the view that self-efficacy plays an important role in strengthening self-control, time management, motivation, and students' academic responsibility. Beyond psychological factors, adolescent cognitive development, teacher support, and successful experiences also contribute to reinforcing self-efficacy and self-regulation skills. Practically, these results highlight the need for learning

strategies that foster self-efficacy, such as project-based learning, constructive feedback, and a positive learning environment. Strong self-efficacy serves as an essential foundation for effective self-regulation, which ultimately enhances academic achievement and prepares students to face challenges both in school and in everyday life.

The analysis of the influence of academic boredom on self-regulation showed that academic boredom did not have a significant effect on self-regulation; therefore, the second hypothesis was rejected. Students were still able to manage their behavior, time, and learning strategies despite experiencing boredom, because other factors such as self-efficacy, intrinsic motivation, and environmental support were more dominant. Thus, academic boredom was not a primary predictor of self-regulation. This finding is in line with Pekrun's Control-Value Theory of Achievement Emotions (2006), which explains that negative academic emotions such as boredom do not always inhibit self-regulation, as students may still maintain learning strategies when they have a strong sense of control over their tasks. In other words, boredom is not the main factor determining the success of self-regulation. Meanwhile, a study conducted by Nett, Goetz, and Daniels (2010) found that some students were able to use emotion regulation strategies to cope with boredom, thereby sustaining both learning engagement and self-regulation. This indicates that boredom does not automatically reduce self-regulation. Accordingly, the results confirmed that academic boredom was not a significant predictor of self-regulation, since self-regulation was more strongly influenced by self-efficacy, motivation, and environmental support. Boredom could be managed through emotional regulation strategies, and therefore did not necessarily weaken students' ability to regulate their learning processes.

The analysis of the influence of self-regulation on students' career aspirations showed that self-regulation had a positive and significant effect on career aspirations. The better students were able to regulate their behavior, emotions, and learning strategies, the clearer their career orientations and goals became. Santrock (2011) explained that self-regulation is an important component of adolescent development because it helps them make appropriate decisions and set realistic goals. Similarly, research by Hidayatulloh et al (2025) found that self-regulation served as a significant predictor in the development of career aspirations among students. In other words, students who were able to effectively manage their behavior, emotions, and thoughts were more motivated to pursue their ambitions and dream professions. Students with strong self-regulation skills also showed a greater tendency to prepare proactively for their future, including career choices, skills development, and further education planning (Liu et al, 2023). This, self-regulation became a crucial foundation in shaping students' career aspirations that were clear, realistic, and well-directed.

The analysis of the influence of self-efficacy on career aspirations showed that self-efficacy had a positive but not significant effect on students' career aspirations. This means that although students with higher self-efficacy tended to show a positive orientation toward achieving career aspirations, the influence was not statistically strong. This indicated that career aspirations were more influenced by other factors, such as family support, social environment, cultural values, career information, and relevant learning opportunities. Therefore, self-efficacy alone was not sufficient to shape clear career aspirations without the support of other internal and external factors. Noegroho et al (2026) also emphasized that self-efficacy only affects career aspirations when accompanied by career exploration and social support. Meanwhile, Nisa et al (2021) showed that self-efficacy is not always the dominant factor in shaping career aspirations. This highlights the need for a more comprehensive approach, namely strengthening self-efficacy alongside career guidance, exposure to real-life experiences, and support from both family and school, so that students' career aspirations can develop optimally.

The analysis of the influence of academic boredom on career aspirations showed that academic boredom had a negative but non-significant effect on students' career aspirations. This means that although students who felt bored in learning tended to have lower career aspirations, the effect was not statistically strong enough to be considered a determining factor. Liu et al (2023), for example, found that academic boredom had a stronger impact on learning achievement and classroom engagement than on career aspirations. Similarly, Sari and Nugroho (2023) showed that students with long-term career goals maintained their aspirations even when they occasionally experienced academic boredom. In addition, Noegroho et al (2026) stressed that career information, family roles, and the influence of social media were more dominant in shaping students' career aspirations compared to the factor of learning boredom. Thus, academic boredom was not the main variable in the formation of career aspirations. Other factors, such as family support, career information, intrinsic motivation, and meaningful academic experiences, played a greater role in shaping students' career ambitions. Therefore, the development of career aspirations needs to focus on strengthening these strategic factors, while academic boredom should still be managed so that it does not hinder learning motivation.

The results of the analysis of the effect of academic boredom on career aspirations through students' self-regulation show that academic boredom does not have a direct effect on career aspirations, but has a negative and significant effect through self-regulation. This means that the higher the level of academic boredom, the weaker the students' self-regulation ability, which in turn lowers career aspirations. Thus, self-regulation serves as a significant mediator that explains the relationship between learning boredom and career orientation. This finding is consistent with Sari and Nugroho (2023) as well as Rahmadani (2022), who stated that prolonged academic boredom can hinder focus, reduce motivation, and weaken self-regulation, thereby making it difficult for students to formulate career plans. Liu (2023) also emphasized that self-regulation is an important pathway linking emotional conditions with long-term behaviors, including career aspirations.

In addition, Kartika et al (2024) as well as Iskandar et al (2022) showed that students with high boredom levels tend to be inconsistent in managing time, setting targets, and designing career goals. This confirms that the impact of academic boredom on career aspirations is not direct but rather operates through weakened self-regulation. Yuliani & Saputri (2024) added that self-regulation can function as a protective factor: students with strong self-regulation skills are able to maintain their career aspirations even when experiencing academic boredom. Thus, the findings of this study reinforce the importance of self-regulation as a mediator bridging the effect of academic boredom on students' career aspirations.

The results of the analysis of the effect of academic boredom on career aspirations through self-regulation also show that academic boredom does not directly influence career aspirations, but has a negative and significant effect through self-regulation. This means that the higher the academic boredom, the lower the students' self-regulation, which in turn reduces career aspirations. This finding is in line with Sari and Nugroho (2023) and Rahmadani (2022), who pointed out that prolonged academic boredom can hinder focus, decrease motivation, and weaken self-regulation so that students struggle to develop career plans. Liu et al (2023) also emphasized that self-regulation is an essential pathway that links emotional conditions with long-term behaviors, including career aspirations.

Yuliani & Saputri (2024) further noted that self-regulation can serve as a protective factor: students with strong self-regulation skills are able to sustain their career aspirations despite experiencing academic boredom. Therefore, the results of this study strengthen the argument that self-regulation is an important mediator bridging the effect of academic boredom on students' career aspirations.

Conclusion

Based on the results of the descriptive analysis and the findings of this study, it can be concluded that self-efficacy and academic boredom play different roles in relation to students' self-regulation and career aspirations. Self-efficacy has a positive and significant effect on self-regulation, while academic boredom does not show a significant effect. Self-regulation is proven to be an important predictor that directly influences career aspirations, as well as serving as a mediator bridging the influence of both self-efficacy and academic boredom on career aspirations. Thus, self-regulation becomes the key factor that needs to be strengthened in order to help students plan their educational and professional futures. These findings provide practical implications for schools and guidance counselors to design programs for developing self-efficacy and self-regulation, in order to strengthen students' orientation and planning of future careers.

Author Contributions Statement

Mutia Dayana Fatmawati: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing – original draft. **Sugiyono:** Supervision, Methodology, Validation, Writing – review & editing. **Sunawan:** Supervision, Validation, Project administration, Writing – review & editing. All authors participated in the preparation of this manuscript and approved the final version for publication. **Khairuddin Khairkhah:** Validation, Writing – review & editing.

Declaration of Generative AI

While developing this manuscript, the authors utilized ChatGPT to support language improvement and enhance the clarity and readability of the text. All AI-assisted suggestions were reviewed and revised where appropriate, and the authors retain full responsibility for the accuracy, integrity, and final content of the published article.

Declaration of Competing Interest

The authors confirm that they have no known financial conflicts or personal relationships that could have unduly influenced the research process, the interpretation of the findings, or the conclusions presented in this article.

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