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The influence of parental education level, educational background, organizational involvement, and future expectations on students' self-regulated learning

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ABSTRACT

In the digital era, self-regulated learning (SRL) has become a key determinant of student academic performance. SRL skills are shaped by various internal and external factors. This study aims to investigate the partial and simultaneous influence of parental education level, educational background, organizational involvement, and future expectations on the SRL skills of university students. The research population included 161,389 students from 84 universities in West Nusa Tenggara, Indonesia. Using Isaac and Michael's sampling technique with a 1% margin of error, a sample of 676 students was selected. Data were collected through a validated and reliable questionnaire consisting of 20 items based on ten SRL indicators. Data analysis was conducted using dummy multiple regression analysis with the aid of SPSS 21. The findings of the study are as follows: (1) Parental education level does not have a significant effect on students' SRL skills; (2) Educational background does not have a significant effect on students' SRL skills; (3) Organizational involvement has a significant effect on students' SRL skills; (4) Future expectations do not have a significant effect on students' SRL skills; (5) Parental education level, educational background, organizational involvement, and future expectations collectively have a significant effect on students' SRL skills. Based on the findings of this study, universities need to encourage and facilitate students to actively participate in various organizations so that they can engage in self-regulated learning effectively.

Contribution/Originality: This study examines not only theoretical factors but also potential factors that influence students' self-regulated learning. Through statistical analysis, this study clearly reveals the factors that influence students' self-regulated learning. This is what distinguishes this study from previous research.

1. INTRODUCTION

In the current digital era, self-regulated learning (SRL) skills have an important role in determining the quality of academic activities, knowledge acquisition, and learning outcomes (Huh, Lee, & Reigeluth, 2024; Wang, 2023). This is due to advancements in information technology which, when supported by adequate SRL skills, enable students to access a broader and more accessible range of knowledge sources. However, technological progress does not only yield positive impacts but also generates negative consequences (Sumardi, 2023). In fact, these negative effects can outweigh the positive ones (Reynaldo & Sokang, 2016). One of the negative impacts of technological

advancement is learning loss. In reality, learning loss is not only caused by extraordinary events such as the Covid-19 pandemic (Patrinos, 2022; Vasylieva & Hodovaniuk, 2023; Zhdanov et al., 2022) but can also result from the misuse of information technology.

The study conducted by Hadi and Sumardi (2023) revealed that early childhood learners experience a loss of study time due to the misuse of technology. Children spend more time playing with gadgets than engaging in learning activities. A similar pattern is observed at the university level, where findings by Sumardi (2023) indicate that the misuse of information technology during the learning process, including in completing academic assignments, negatively impacts students' mastery of course material. Furthermore, students' cognitive structures become disorganized, lacking coherence, systematicity, and logical flow as a result of technology misuse. These findings are consistent with those of Hussaini (2022) and Sumardi (2023), who found that the misuse of information technology leads to suboptimal knowledge acquisition and degrades academic performance. This is evidenced by misconceptions, superficial understanding, and incomplete mastery of knowledge.

Dependence on and misuse of information technology, as previously explained, clearly have negative impacts not only on the domain of knowledge but also on attitudes and skills. In the domain of attitudes, individuals' inability to exercise self-control leads to improper use of information technology. Studies conducted by (Sumardi, 2023) demonstrate that technological advancement contributes to the degradation of student character, marked by increased laziness, pragmatism, and hedonism. Furthermore, in the domain of skills, research by Hasibuan (2014) indicates that the misuse and dependence on information technology contribute to the decline in students' writing skills. Similar findings were reported by Alhusban (2016), who showed that information technology use can result in the loss of students' motivation to work hard, which in turn significantly reduces their writing skills. Perhaps most concerning is the underdevelopment of students' critical thinking skills (Sumardi, 2023). These findings collectively indicate the occurrence of learning loss as a negative consequence of the misuse of technological advancements.

The advancement of information technology is an unstoppable phenomenon. The impact it brings largely depends on how it is utilized. In the context of self-regulated learning (SRL), technology can have both positive and negative effects on SRL (Huh et al., 2024). To ensure that the advancement of information technology yields positive outcomes and minimizes negative impacts, particularly learning loss, students must be capable of developing effective SRL skills. With strong SRL abilities, students can manage their study time efficiently and effectively to achieve predetermined learning goals (Kauchak & Eggen, as cited in Utari, Senen, and Rasto (2018)). However, cultivating SRL is not an easy task, especially in the context of technological advancement that may co-opt the learning process. It is acknowledged that, currently, the level of SRL skills among students in Indonesia remains relatively low (Herianto, Rispawati, Alqadri, & Fauzan, 2024). Suboptimal SRL conditions negatively affect students' learning readiness, which in turn impacts their satisfaction with the learning experience. Furthermore, low learning readiness also adversely influences students' self-efficacy (Ip & To, 2025).

There are numerous factors influencing students' self-regulated learning (SRL) skills, including positive feedback (Brown, Peterson, & Yao, 2016), self-efficacy (Hwang, 2025), and direct assistance from others (Huh et al., 2024). Zimmerman (as cited in Utari et al., 2018) categorizes the factors affecting students' SRL into three groups: individual factors, environmental factors, and behavioral factors. In addition to these, other factors hypothetically influencing SRL include parental education level, educational background, organizational activities, and future expectations. These four factors have the potential to impact SRL because they are inherently linked and directly related to the students themselves. This study aims to examine both the partial and simultaneous effects of parental education level, educational background, organizational activities, and future expectations on students' SRL skills.

The hypotheses to be tested in this study are as follows:

H_{a1}: There is a significant effect of parental education level on students' self-regulated learning (SRL) skills.

H_{o1}: There is no significant effect of parental education level on students' SRL skills.

H_{a2}: There is a significant effect of educational background on students' SRL skills.

H_{02}: There is no significant effect of educational background on students' SRL skills.

H_{03}: There is a significant effect of organizational involvement on students' SRL skills.

H_{03}: There is no significant effect of organizational involvement on students' SRL skills.

H_{04}: There is a significant effect of future expectations on students' SRL skills.

H_{05}: There is no significant effect of future expectations on students' SRL skills.

H_{06}: There is a significant simultaneous effect of parental education level, educational background, organizational involvement, and future expectations on students' SRL skills.

H_{06}: There is no significant simultaneous effect of parental education level, educational background, organizational involvement, and future expectations on students' SRL skills.

2. LITERATURE REVIEW

2.1. Self-Regulated Learning

Self-regulated learning (SRL) is a term derived from the concept of self-regulation (SR). SR refers to an individual's ability to regulate behavior based on the control of emotions and thoughts (Baumeister & Vohs, 2007). SRL is the process of self-management aimed at controlling academic learning (Pintrich & De Groot, as cited in Wang (2023)). According to numerous scholars, students' SRL skills play a critical role in determining their learning achievement levels (Huh et al., 2024). Students who possess strong SRL skills tend to demonstrate higher academic performance (Utari et al., 2018). Furthermore, during the COVID-19 pandemic, with the implementation of online learning, SRL has become a focal topic among researchers and educators, as it is considered a key factor in successful learning outcomes (Klimova, Zamborova, Cierniak-Emerych, & Dziuba, 2022; Sutarni, Ramdhany, Hufad, & Kurniawan, 2021).

There are various elements or dimensions related to students' self-regulated learning (SRL). These elements have been extensively studied by researchers. Wang (2023) proposed five main dimensions of SRL, namely: goal setting, task strategies, environment structuring, help seeking, time management, and self-evaluation. Meanwhile, Huh et al. (2024) identified four elements of SRL, including motivation, goal orientation, self-efficacy, and self-reflection. Furthermore, Hwang (2025) mentioned several dimensions associated with self-regulation, such as planning, goal-setting, strategy use, emotion regulation, evaluation, and revision. Zimmerman and Martinez-Pons (As cited in Hwang (2025)) also identified eleven SRL sub-dimensions: self-evaluation, goal-setting and planning, organizing and transforming, seeking information, keeping records and monitoring, self-consequences, environmental structuring, rehearsing and memorizing, reviewing records, seeking social assistance, and others. All these sub-dimensions are categorized into three main SRL dimensions: cognitive, motivational, and behavioral. These dimensions and sub-dimensions serve as the indicators utilized in this study.

2.2. Factors Affecting Self-Regulated Learning

Scholars have identified a variety of factors that influence students' self-regulated learning (SRL) skills. Each expert presents a distinct perspective regarding which factors significantly contribute to the development of SRL. According to Brown et al. (2016), positive feedback is a key factor affecting students' SRL abilities. Hwang (2025) emphasizes that self-efficacy plays a crucial role in determining the quality of students' SRL. Meanwhile, Huh et al. (2024) argue that direct assistance from others serves as a determining factor in shaping SRL. Zimmerman (as cited in Utari et al. (2018)) classifies the factors influencing SRL into three main categories: individual, environmental, and behavioral factors. Individual factors include self-efficacy, while behavioral factors encompass self-observation, self-judgment, and self-reaction. Environmental factors consist of the family setting, educational institutions (such as schools or universities), and the broader community.

In addition to the theoretical factors discussed previously, several other factors have the potential to influence students' self-regulated learning (SRL) skills, including educational background, involvement in organizational

activities, and future expectations. This study investigates four variables: parents' educational attainment, students' educational background, organizational involvement, and future expectations.

These four variables are hypothesized to influence SRL skills, as they are closely associated with and embedded in the students' personal and academic lives. Previous research has shown that family environment, educational institutions, peer groups, and the broader community significantly affect students' academic processes and outcomes (Utari et al., 2018; Xu & Zhang, 2020).

Additionally, internal factors such as self-efficacy (Hwang, 2025) and future expectations (Atabey, 2020; Rubio, Oropesa Ruiz, Ángel, & Fernández Martínez, 2022) have also been found to impact student academic performance. Accordingly, this study aims to examine both the partial influence of each of these four variables on students' SRL skills and their simultaneous effects.

3. RESEARCH METHOD

3.1. Research Design

This study category is survey research. The survey design employed is a cross-sectional design. A cross-sectional design refers to a type of survey in which data are collected only once at a single point in time (Stoop & Harrison, 2012). The rationale for selecting a cross-sectional survey design lies in the nature of the data being constant and derived from a large sample.

One of the main strengths of the cross-sectional design is its ability to measure relationships between two or more variables and to interpret the condition of the research object simultaneously at the time of data collection (Stangor, 2011).

3.2. Population and Research Sample

The respondents in this study were drawn from 84 public and private universities in West Nusa Tenggara, Indonesia. The total population consisted of 161,389 students, from which a sample of 676 students was selected. The sampling technique was based on the method proposed by Isaac and Michael (1983), which states that for a population ranging from 150,000 to 200,000 individuals, the minimum required sample size at a 1% margin of error is 661 respondents.

3.3. Data Collection Techniques and Instruments

The data collection technique in this study employed a non-test approach, utilizing a Self-Regulated Learning (SRL) questionnaire instrument developed based on a three-point Likert scale (Joshi, Kale, Chandel, & Pal, 2015). The SRL questionnaire consisted of 20 statements derived from ten indicators, as presented in Table 1.

Table 1. SRL dimensions and indicators.

No	Dimensions	Indicators	Statement item number
1	Cognitive	Goal setting and planning.	1, 2
		Rehearsing and memorizing.	3, 4
		Organizing and transforming.	5, 6
		Self-evaluating.	7, 8
2	Motivation	Self-consequence.	9,10
		Seeking social assistance.	11, 12
		Environmental structuring.	13, 14
3	Behavior	Keeping records and monitoring.	15, 16
		Seeking information.	17, 18
		Reviewing records.	19, 20

The instrument validation in this study was conducted through two approaches: construct validity and face validity. Both types of validity were assessed by three expert validators in the relevant field. After the instrument was

deemed appropriate in terms of construct and face validity, an empirical test was conducted to measure the instrument's reliability.

The statistical test results showed a Cronbach's alpha coefficient of $\alpha = 0.90$, which exceeds the minimum threshold of 0.70. According to the criteria proposed by Hair, Black, Babin, Anderson, and Tatham (2006), this indicates that the instrument meets the reliability requirements. Therefore, the questionnaire instrument used in this study can be considered valid and reliable for data collection purposes.

3.4. Data Analysis Techniques

The data analysis technique employed in this study was dummy multiple regression analysis. The rationale for using this technique is due to the presence of five independent variables father's education level, mother's education level, educational background, organizational activities, and future expectations and one dependent variable, namely self-regulated learning (SRL). Prior to conducting the regression test, prerequisite tests were performed, including tests for normality, multicollinearity among independent variables, autocorrelation, and heteroscedasticity. Once all regression assumptions were satisfied, hypothesis testing was carried out with the assistance of SPSS version 21.

4. FINDINGS AND DISCUSSION

4.1. Regression Assumption Test

The regression assumption tests were conducted to determine whether hypothesis testing could be appropriately performed. The assumption tests included normality, multicollinearity, autocorrelation, and heteroscedasticity tests. Based on the normality test analysis, the residuals were found to meet the normality assumption, as evidenced by the histogram and the Regression Standardized Residual plot shown in Figures 1 and 2.

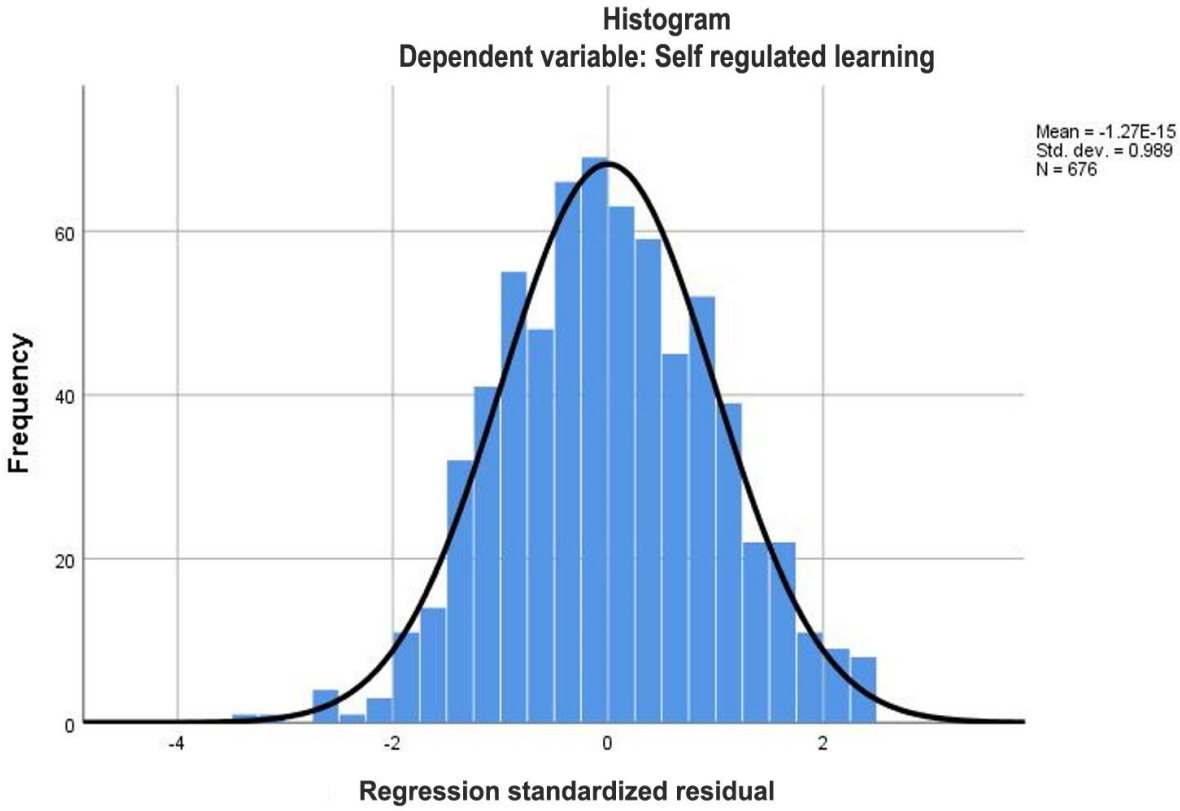

Figure 1. Histogram regression standardized residual.

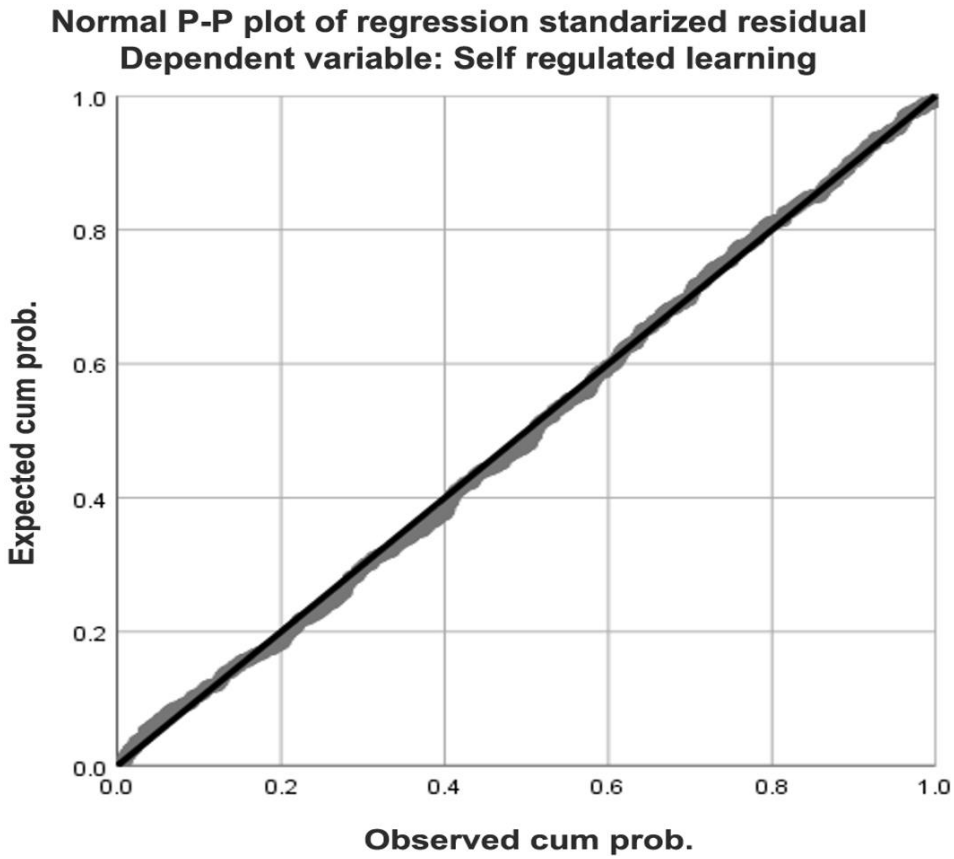

Figure 2. Plot regression standardized residual.

Regarding the tests for multicollinearity, autocorrelation, and heteroscedasticity assumptions, Figure 3, the Regression Studentized Residual plot, indicates the absence of multicollinearity among the independent variables, as the Variance Inflation Factor (VIF) values are below the threshold of 10. Similarly, the autocorrelation test reveals no presence of autocorrelation, evidenced by the Durbin-Watson test p-value of 0.947. Figure 3 also shows no indication of heteroscedasticity, demonstrated by the evenly dispersed observation points above and below the zero line on the Y-axis in the plot of Regression Studentized Residuals against the predicted values. Therefore, all regression assumptions have been met, allowing the analysis to proceed to hypothesis testing.

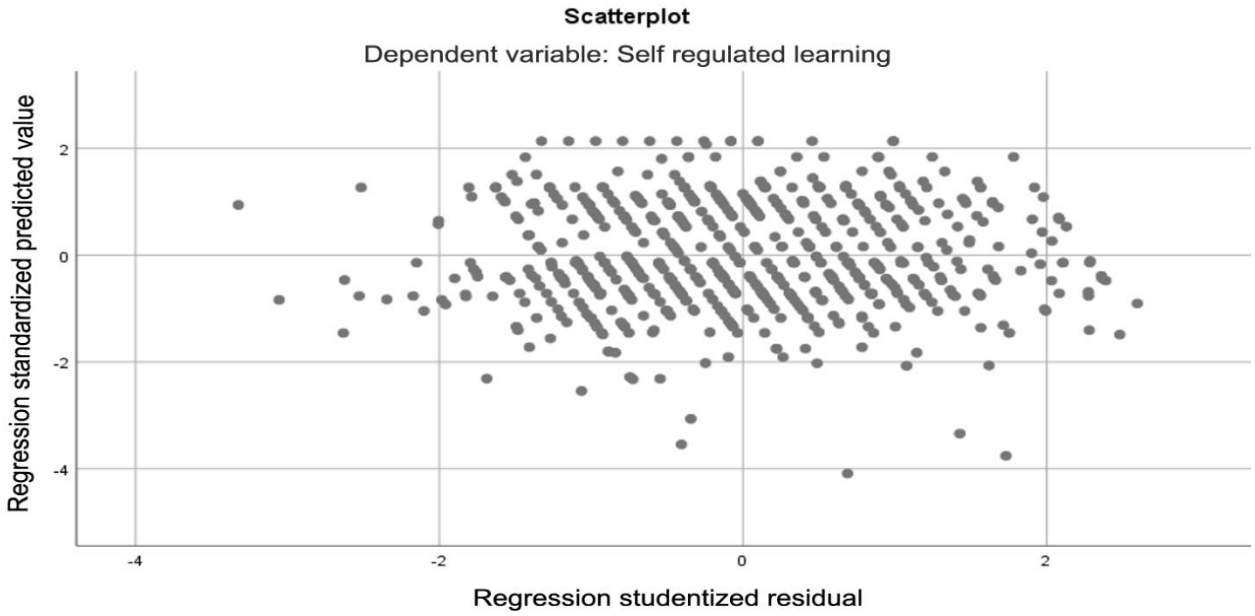

Figure 3. Plot regression studentized residual.

Table 2. Results of the partial regression test of relationships between variables.

Research variables		Sig. (1-tailed)	Pearson correlation
Father's education level	Did not complete elementary school	0.058	0.060
	Elementary school	0.238	0.027
	Junior high school	0.289	0.021
	Senior high school	0.458	0.004
	Higher education (University)	0.078	0.055
Mother's education level	Did not complete elementary school	0.121	0.045
	Elementary school	0.289	0.021
	Junior high school	0.372	0.013
	Senior high school	0.394	0.010
	Higher education (University)	0.027	0.074
Educational background	Senior high school	0.117	0.046
	Vocational high school	0.393	0.010
	Islamic senior high school	0.250	0.026
	Islamic boarding school	0.116	0.046
Organizational activities	Active	0.000	0.195
	Less active	0.007	0.064
	Inactive	0.001	0.121
Future expectations	Optimistic	0.005	0.100
	No expectations	0.016	0.082
	Pessimistic	0.059	0.060

4.2. The Partial Effects of Variables (Parental Education Level, Educational Background, Organizational Activities, and Future Expectations) on Students' Self-Regulated Learning

The first hypothesis test conducted was to examine the partial effects of parental education level (consisting of father's education level and mother's education level), educational background, organizational activities, and future expectations on students' self-regulated learning (SRL) skills. This test aimed to determine whether each variable has a significant effect on students' SRL skills (Ha) or no significant effect (Ho). Before presenting the results of the hypothesis test on the partial effects of the independent variables on the dependent variable, the correlation test results between these variables will first be presented. The relationship between each independent variable and the dependent variable is illustrated in the regression test results shown in Table 2.

Based on the data analysis presented in Table 2, it is found that the p-values for the father's education level, whether not completing elementary school, elementary school, junior high school, senior high school, or higher education, are all greater than the significance level (α) of 5% (p-value > α). This indicates that the father's education level does not have a significant positive relationship with students' self-regulated learning (SRL) skills. Regarding the mother's education level, the analysis reveals an interesting finding: the p-values for the mother's education levels of not completing elementary school, elementary school, junior high school, and senior high school are also greater than the 5% significance level (p-value > α). This means that these educational levels of the mother do not have a significant positive relationship with students' SRL skills. In contrast, the mother's higher education level shows a correlation coefficient of 0.074 with a p-value of 0.027 (p-value < α at 5% significance level). This suggests that a mother's higher education level has a significant positive relationship with students' SRL skills. In other words, students whose mothers have higher education tend to possess better SRL skills.

Regarding the educational background variable, the data analysis results indicate that the p-values for educational backgrounds from Senior High School, Vocational High School, Madrasah Aliyah, and Islamic boarding schools are all greater than the significance level (α) of 5% (p-value > α). Therefore, it can be concluded that educational background does not have a significant positive relationship with students' self-regulated learning (SRL) skills.

Regarding the organizational activity variable, the data analysis results indicate that the p-value for this variable is less than the significance level (α), where α = 5%. In other words, p-value < α across all levels of organizational

activity. This signifies that organizational activity has a significant positive relationship with students' self-regulated learning (SRL) skills. The correlation value for the active level is 0.195 with a p-value of 0.000. Meanwhile, the correlation values for the less active and inactive levels are -0.094 and -0.121, respectively, with p-values of 0.007 and 0.001. These findings suggest that the more actively a student participates in organizational activities, the higher their SRL skills.

Table 3. Results of the regression test of the influence between variables, partially.

Research variables		B	t	Sig.
Constant		44.768	27.433	0.000
Father's education level	Did not complete elementary school	-0.617	-0.667	0.505
	Elementary school	-0.177	-0.256	0.798
	Junior high school	0.349	0.503	0.615
	Higher education (University)	0.440	0.574	0.566
Mother's education level	Did not complete elementary school	-0.464	-0.504	0.614
	Elementary school	-0.302	-0.452	0.651
	Junior high school	-0.182	-0.268	0.789
	Higher education (University)	0.828	0.953	0.341
Educational background	Vocational high school	-0.391	-0.529	0.597
	Islamic senior high school	-0.431	-0.827	0.408
	Islamic boarding school	-0.824	-1.130	0.259
Organizational activities	Active	2.057	4.170	0.000
	Inactive	-0.841	-1.398	0.163
Future expectations	Optimistic	2.351	1.461	0.144
	No expectations	-2.143	-0.858	0.391

Regarding the variable of future expectations, the data analysis results show that the p-values for the optimistic and neutral categories are below the significance level (α) of 5%. This indicates that future expectations have a significant positive relationship with students' self-regulated learning (SRL) skills. The correlation value for the optimistic category is 0.100 with a p-value of 0.005, suggesting that optimism about the future can enhance students' SRL skills. Meanwhile, the correlation values for the pessimistic and neutral categories are -0.060 and -0.082, with p-values of 0.059 and 0.016, respectively. Therefore, a pessimistic or even neutral attitude among students may potentially decrease their SRL skills.

Regarding the partial influence of the variables of parental education level, educational background, organizational activities, and future expectations on students' SRL skills, this is illustrated in the results of the regression test in Table 3.

Based on the data analysis results presented in Table 3, the regression coefficient for the constant is 44.768 with a p-value (Sig.) = 0.000. This indicates that there are other variables not examined in this study that have a significant impact on students' Self-Regulated Learning (SRL) skills.

From the theoretical review that has been conducted, it is known that aside from the hypothetical variables investigated, several other factors may influence students' SRL abilities. These factors include positive feedback from instructors (Brown et al., 2016; Wisniewski, Zierer, & Hattie, 2020), self-efficacy (Hwang, 2025), direct assistance from lecturers in developing students' SRL skills (Huh et al., 2024), and additional aspects such as self-observation, self-judgment, and self-reaction, as well as the students' social environment, including family, school, and community (Zimmerman, as cited in Utari et al. (2018)). Therefore, the finding that there are other significant variables outside of the hypothetical ones is likely attributable to these theoretically grounded factors.

For the variable of parental education level, the findings of this study indicate that the regression coefficient values for the father's education level show both negative and positive results, with p-values (Sig.) greater than the significance threshold (α), where α = 5%. This suggests that the father's education level does not have a statistically significant effect on students' self-regulated learning (SRL) skills. Similarly, the regression coefficient values for the

mother's education level also show mixed results (negative and positive), with p-values (Sig.) exceeding the significance threshold (α), indicating that the mother's education level likewise does not have a significant impact on students' SRL skills. An interesting finding from the above results is that, although the correlational analysis indicated a positive relationship between mothers' higher education levels and students' Self-Regulated Learning (SRL) skills, this variable did not have a statistically significant effect on SRL skills. This finding demonstrates that parents' educational attainment does not directly influence students' SRL skills. A significant effect is more likely to emerge when parents are actively involved in guiding their children in the development of SRL skills (Huh et al., 2024). Furthermore, for such interventions to be effective, parents must possess an adequate understanding of SRL concepts (Dignath & Büttner, 2008). In this context, parental education level can play a critical role in shaping effective strategies for SRL skill development. These strategies are essential, as appropriate approaches are key to enhancing students' SRL capacities (Dent & Koenka, 2016; Huh & Reigeluth, 2018). Therefore, the absence of a significant effect of parental education level on students' SRL skills may be attributed to a lack of parental guidance and insufficient knowledge regarding SRL.

In relation to students' educational background, the results of the data analysis indicate that the regression coefficient for school background yields a negative result, with a p-value (Sig.) greater than the level of significance (α), where α = 5%. This finding suggests that school background does not have a significant influence on students' Self-Regulated Learning (SRL) skills. Furthermore, based on the analysis of the relationship between variables, it is evident that educational background does not demonstrate a positive correlation with students' SRL skills.

In general, individual differences among students tend to influence their academic performance. For instance, gender differences have been found to impact students' STEM skills and communication abilities. Gender disparity also affects students' self-efficacy (Zakee & Sultana, 2024). Additionally, gender and grade level differences are associated with variations in problem-solving skills, scientific attitudes (Fadli, 2019), self-efficacy, and students' attitudes toward chemistry (Wahyudiati, Sutrisno, & Supiah, 2019). Differences in educational background have also been widely investigated in relation to students' academic performance. A study conducted by De Clercq, Pearson, and Rolfe (2001) revealed that educational background significantly influenced the performance of medical students, where those with a nursing background tended to perform less well in their first year. Similarly, Indriyani (2014) found that students' educational background had a significant impact on their academic achievement. Furthermore, research by Parhaini (2017) showed that educational background significantly affected students' learning outcomes in the PDM course, with students from general secondary schools outperforming those from Islamic boarding schools (Madrasah Aliyah). In this study, students' educational background was not found to have a significant influence on their self-regulated learning (SRL) skills. This may be attributed to students' limited knowledge of SRL. Such a lack of knowledge can be traced back to prior educational experiences, where teachers seldom provided explicit or direct instruction on SRL skills (Dent & Koenka, 2016; Kistner et al., 2010). In fact, SRL is a set of skills that can be taught and developed through appropriate instructional practices (Huh et al., 2024). Moreover, research on how SRL skills can be taught and nurtured has been extensively conducted (Cigdem & Oncu, 2024; Paris & Paris, 2001). This indicates that the body of knowledge regarding SRL development strategies is already abundant and well-established.

For the organizational activity variable, the regression coefficient for the "active" category was found to be 2.057, with a p-value (significance) lower than the significance level (α = 0.05). This indicates that organizational involvement at the active level has a statistically significant effect on students' self-regulated learning (SRL) skills. In other words, the more actively students participate in organizational activities, the higher their SRL skills tend to be, with an estimated increase of 2.057 units. This result is consistent with the correlation analysis, which also demonstrated a positive relationship between organizational activity and SRL skills. Thus, higher levels of organizational engagement are associated with better SRL competencies among students.

The research findings on the significant influence of organizational activity on students' self-regulated learning (SRL) skills suggest that organizations particularly student organizations play a vital role in developing these skills.

Participation in student organizations not only contributes to the enhancement of students' knowledge (Ruan & Han, 2012) but also supports the development of other essential competencies that are crucial for students' academic and professional success. A study conducted by Jacqueline, Bush, Cox, Buhlinger, and McLaughlin (2019) revealed that six out of nine core competencies deemed important for pharmacy students could be effectively developed through active involvement in organizational activities. More specifically, Coscia (2017) found a significant difference in leadership abilities and skills between students who were involved in organizations and those who were not. Similarly, research by demonstrated that the internalization of nationalistic values can be effectively and integrally facilitated through organizational engagement.

Regarding the effectiveness of organizations in developing students' self-regulated learning (SRL) skills, this can be attributed to the fact that organizations contribute to SRL development both directly and indirectly. Direct development occurs through various training programs commonly offered within organizational settings, such as management and leadership training (Coscia, 2017; Majd et al., 2008). Meanwhile, indirect development occurs when students' SRL skills are shaped implicitly through active participation in organizational activities, often without their conscious awareness. Organizations serve not only as platforms for information sharing (Ruan & Han, 2012) but also as arenas for skill development (Jacqueline et al., 2019), networking, and career orientation (Aaron & Chinweike, 2014), all of which significantly enhance the quality of human resources and students' overall competitiveness.

Regarding the variable of future expectations, the results of this study indicate that the regression coefficients for this variable, whether negative or positive, are accompanied by p-values (significance levels) greater than the significance threshold (α) of 5%. Therefore, it can be concluded that future expectations do not have a significant effect on students' self-regulated learning (SRL) skills. This finding contrasts with the results of the correlation analysis, which showed a positive relationship between future expectations and students' SRL skills. In other words, although there is a positive association between these two variables, this does not necessarily imply a significant effect. This discrepancy is likely due to the weak strength of the relationship between the variables involved.

The findings of this study, which demonstrate a significant relationship between future expectations and self-regulated learning (SRL) skills, are consistent with several previous studies. Research conducted by Tavani and Losh (2003) as well as Kaspar and Jeylan (2021) indicated that future expectations are directly related to goal-oriented behavior. Manzano-Sánchez, Gómez-Mármol, Conte Marin, Jiménez-Parra, and Valero-Valenzuela (2021) found that positive future expectations promote more adaptive behavior, enhance peer relationships, increase school participation, and support social acceptance. Moreover, future expectations are not only associated with but also exert influence on various important aspects of individual development. Prior studies have shown that future expectations significantly affect motivation (Manzano-Sánchez et al., 2021), academic achievement (Kaspar & Jeylan, 2021), school completion, career attainment (Şimşek, 2012), and future career planning (Arık & Seyhan, 2016).

Nevertheless, future expectations do not exhibit a significant influence on self-regulated learning (SRL) skills. This may be attributed to the fact that future expectations are primarily cognitive in nature, encompassing perceptions, interests, and concerns about the future (Şimşek, 2012). In contrast, SRL is oriented toward the skills required for self-management in carrying out academic activities (Pintrich & DeGroot, as cited in Wang (2023)). SRL competence is closely tied to one's understanding of the concept of self-regulation itself. Effective SRL is not solely dependent on internal motivation but is also supported by adequate knowledge of self-regulatory strategies (Baumeister & Vohs, 2007). Thus, the lack of a significant effect of future expectations on SRL is likely due to students' limited knowledge and skills in applying SRL principles effectively.

4.3. The Simultaneous Influence of Variables (Parental Education Level, Educational Background, Organizational Activity, and Future Expectations) on Students' Self-Regulated Learning

The second hypothesis test conducted in this study aimed to examine the simultaneous influence of parental education level, educational background, organizational involvement, and future expectations on students' self-

regulated learning (SRL) skills. However, before presenting the results of the simultaneous influence analysis, this section first outlines the findings of the simultaneous relationship analysis among the variables. The simultaneous relationships among these variables are reflected in the results of the regression analysis as presented in Table 4.

Table 4. Results of the regression test of relationships between variables simultaneously.

Model	R	R square	Adjusted R square	Durbin Watson
1	0.252[a]	0.064	0.042	2.005

Note: "a" is the statistical symbol of the R value.

Based on the data analysis results in Table 4, it is found that the variables of father's education level, mother's education level, educational background, organizational activity, and future expectations simultaneously have a positive relationship with students' self-regulated learning (SRL) skills. However, the strength of this positive relationship is categorized as low. Furthermore, the results of the simultaneous effect analysis of the variables father's education level, mother's education level, educational background, organizational activity, and future expectations on students' SRL skills can be seen in the regression test results presented in Table 5.

Table 5. Results of the regression test of the simultaneous influence between variables.

Model		df	Mean Square	F	Sig.
1	Regression	15	96.008	2.994	0.000[b]
	Residual	660	32.070		
	Total	675			

Note: "b" is the statistical symbol of the Sig value.

Based on the data analysis results presented in Table 5, it is evident that the variables simultaneously have a significant effect on students' self-regulated learning (SRL) skills. Although the simultaneous relationship among the variables is classified as weak, the simultaneous influence remains significant. Furthermore, while only one of the four variables shows a significant partial effect, all variables collectively exert a significant impact on students' SRL skills.

The findings of this study affirm that a variable may not demonstrate a significant effect when examined individually (partially), yet it can exert a significant influence when analyzed simultaneously with other variables. This is evident in the present study, where only one of the four independent variables showed a significant partial effect on students' self-regulated learning (SRL) skills. However, when tested simultaneously, all four variables collectively demonstrated a significant impact on SRL skills. This implies that an integrative approach has a stronger effect compared to a partial one (Alshammari et al., 2025). These findings are consistent with previous research. For instance, Atabey (2020) found that the joint contribution of future expectations and self-efficacy had a greater influence on students' desire to attend school. In a different research context, Huh et al. (2024) discovered that using multiple types of support simultaneously was more effective in enhancing students' SRL skills. Similarly, Wei and Chou (2020) reported that students' online learning readiness and learning satisfaction, when examined together, were more strongly associated with their English learning experience.

5. CONCLUSION

Not all variables examined in this study were found to have a significant influence on students' self-regulated learning (SRL) skills. Furthermore, not all variables that demonstrated a positive relationship with SRL skills had a statistically significant impact. Among the four independent variables tested, only organizational activity was found to have a significant partial effect on students' SRL skills. However, when considered simultaneously, all four variables showed a significant influence. The key characteristic of variables that significantly affect SRL skills lies in their capacity to provide opportunities for the development of SRL knowledge and skills, either directly or indirectly. In contrast, variables that do not facilitate such development tend to lack a significant impact on students' SRL.

Therefore, students' ability to regulate their academic behaviors and activities is highly dependent on their knowledge of SRL. In this regard, involvement in student organizations can serve as an effective medium to enhance their understanding and mastery of SRL strategies. Based on research findings, universities need to encourage students to be actively involved in organizations to maintain their ability to regulate their academic activities. High self-regulated learning ability will have a positive impact on learning outcomes.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
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