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The Role of Learning Anxiety and Student Resilience on Problem-Solving Ability of Students at Bodhi Dharma Buddhist College

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ABSTRACT

This study aims to analyze the influence of learning anxiety and student resilience on problem-solving abilities. The background of this study stems from the low achievement of students' problem-solving abilities and the limited studies that integrate non-cognitive factors, especially learning anxiety and resilience, into a single analytical model. The study used a quantitative approach with an ex post facto design and a survey method involving 60 students at STAB Bodhidharma. Data were collected using a Likert scale questionnaire and analyzed using descriptive statistics, classical assumption tests, simple linear regression, and multiple linear regression. The results show that learning anxiety has a significant effect on problem-solving ability, with a contribution of 67.4%. Student resilience also has a strong relationship with problem-solving ability. Although not significant in part, it still provides a substantive contribution to the model. Simultaneously, learning anxiety and resilience explain 68.7% of the variation in problem-solving ability, indicating that these two psychological factors play an important role in supporting the effectiveness of students' thinking processes. These findings confirm that problem-solving ability is not only determined by cognitive aspects, but also by students' ability to manage emotional pressure and adapt to academic challenges. Practically, this study recommends the importance of learning interventions that combine strengthening cognitive skills with strategies for managing anxiety and developing student resilience.

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Introduction

Problem-solving skills are one of the cognitive competencies that are positioned as central to mathematics learning and other disciplines that require logical reasoning and higher-order thinking. These skills are not only related to the ability to solve problems, but also to the capacity to understand new situations, model problems, select and apply appropriate strategies, and reflect on the solutions obtained. In the context of 21st-century demands, problem-solving skills are seen as a prerequisite for the development of critical thinking, creativity, and responsible decision-making skills (Wijaya et al., 2016). However, various learning outcome reports show that students' problem-solving skills have not yet reached

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the expected level. This condition necessitates a more in-depth study of the factors that influence problem-solving skills, including non-cognitive factors that often receive less explicit attention in learning practices (Kodirun et al., 2017).

A number of previous studies have shown that learning anxiety, particularly in the context of subjects that are considered difficult, has the potential to hinder academic achievement and reduce the quality of students' thinking processes (Vivin, 2019). Learning anxiety is understood as a negative affective state characterized by feelings of tension, worry, and lack of confidence when facing learning or evaluation situations (Irfan, 2017). Research groups studying learning anxiety in general have shown that high levels of anxiety can interfere with working memory function, reduce focus, and limit the cognitive flexibility that is essential for problem solving. On the other hand, studies on student resilience define resilience as an individual's capacity to persevere, adapt, and bounce back when faced with academic pressure or difficulties. This study group emphasizes that resilience acts as a protective factor that helps students maintain motivation, develop adaptive coping strategies, and remain productively engaged in complex cognitive tasks, including problem solving (Septiana, 2021).

The existing literature shows that learning anxiety and resilience each contribute to academic performance (Vivin, 2019). However, studies that integrate both variables within the same framework are still relatively limited. Most previous studies tend to focus on the linear relationship between anxiety and academic achievement, or separately examine the influence of resilience on academic success. Only a small number of studies simultaneously place anxiety and resilience as noncognitive determinants of problem-solving abilities, especially in the specific context of mathematics learning or subjects that require complex reasoning. The novelty of this research highlights the role of each variable separately, while the potential interaction between learning anxiety and resilience and their combined contribution to problem-solving abilities has not been empirically revealed. Several studies focus on the negative effects of anxiety on performance, and only a few pay special attention to how resilience can moderate or strengthen this relationship.

Based on the above description, it appears that there is still a research gap regarding a comprehensive understanding of the simultaneous influence of learning anxiety and resilience on students' problem-solving abilities. In summary, problem-solving skills have a strategic position in the development of 21st-century competencies, but student achievement is still relatively low. On the other hand, previous studies have examined learning anxiety and resilience as important factors in academic achievement, but most have focused on one variable and have not thoroughly examined the combined contribution of both to problem-solving skills. Only a few researchers have focused on integrating learning anxiety and resilience into a single model, and there is still limited research that specifically examines the extent to which the two are related to problem-solving abilities. Therefore, this study focuses on analyzing the influence of students' learning anxiety and resilience on their problem-solving abilities.

This study aims to: (1) describe and analyze the effect of learning anxiety on problem-solving abilities, (2) examine the effect of resilience on problem-solving abilities, and (3) analyze the simultaneous effect of learning anxiety and resilience on students' problem-solving abilities. Scientifically, this study is expected to contribute to the development of a more comprehensive empirical model regarding the role of noncognitive factors in problem solving, particularly through the integration of learning anxiety and resilience

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into a single analytical framework. Practically, the results of this study are expected to serve as a reference for educators and policy makers in designing pedagogical interventions that not only focus on improving cognitive abilities, but also on managing learning anxiety and strengthening student resilience to support more optimal improvement in problem-solving abilities.

Theoretical Basis

Learning anxiety in this study is understood as a negative affective state that arises when students face the learning process or evaluative situations, characterized by feelings of tension, worry, and fear of failure (Mulyana et al., 2021). According to Spielberger's theory of anxiety, anxiety can take the form of state anxiety, which arises in specific situations, or trait anxiety, which is relatively stable and forms part of one's personality (Pratiwi, 2023). In the context of learning, learning anxiety has the potential to disrupt focus, give rise to negative thoughts, and reduce working memory capacity, which is essential for higher-level thinking activities (Isnaini et al., 2023). Thus, learning anxiety is positioned as a psychological factor that can weaken students' systematic thinking processes when they are faced with problem-solving tasks that require concentration and logical reasoning.

Student resilience is understood as an individual's ability to persevere, adapt, and bounce back when faced with academic pressure or difficulties (Isnaini et al., 2023). Resilience does not only mean the ability to "bounce back," but also includes the ability to manage emotions, control impulses, maintain an optimistic attitude, analyze the causes of problems, and maintain confidence in one's abilities (Fatika Sari & Munawaroh, 2022). Resilient students tend to view difficulties as challenges to be faced, rather than threats to be avoided. They are better able to remain calm under pressure, try various alternative strategies when they experience failure, and do not give up easily when completing complex tasks (Nurmalasari & Sanyata, 2021). Therefore, resilience is seen as a protective factor that can strengthen students' cognitive abilities in the problem-solving process.

Problem-solving skills in this study refer to students' cognitive capacity to understand problems, plan solution strategies, implement solution steps, and reevaluate the solutions obtained (Faoziyah, 2022). Inspired by Polya's problem-solving steps, this skill includes the ability to identify important information, choose the right procedure or strategy, apply logical steps to solve the problem, and reevaluate the results obtained (Sumartini, 2016). Problem-solving skills do not only depend on mastery of mathematical concepts and procedures, but are also influenced by students' psychological conditions, including how they manage anxiety and use personal resilience when facing challenging problems (Pratiwi, 2023).

Based on this theoretical framework, learning anxiety is considered to be related to problem-solving abilities because high levels of anxiety can interfere with attention, narrow focus, and consume working memory capacity to think about threats and fears, thereby reducing the effectiveness of the thinking process in solving problems. Conversely, student resilience is thought to contribute positively to problem-solving abilities because resilient students are better able to manage academic stress, persevere in the process of searching for solutions, and dare to try again after experiencing failure (Solihin et al., 2020). Within this framework, learning anxiety is positioned as a risk factor that has the potential to reduce problem-solving abilities, while student resilience functions as a protective factor that strengthens these abilities.

The integration of these two noncognitive factors forms a conceptual model of research

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that positions learning anxiety (X1) and student resilience (X2) as independent variables that influence problem-solving ability (Y). Partially, it is hypothesized that learning anxiety affects problem-solving ability (H1) and student resilience affects problem-solving ability (H2). Simultaneously, both are expected to jointly contribute to students' problem-solving ability (H3). Thus, the conceptual model reflects the view that students' success in problem solving is the result of an interaction between emotional conditions that need to be managed and psychological resilience that needs to be strengthened through the learning process.

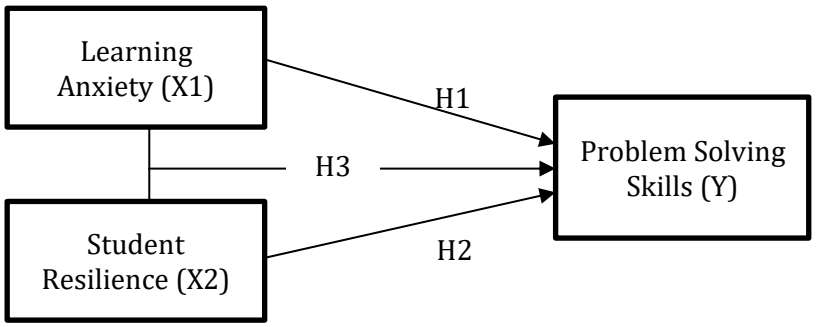

Figure 1. Conceptual Research Model

The hypothesis proposed:

H_0: There is no suspected influence of learning anxiety on problem-solving abilities.
H_1: There is no suspected influence of learning anxiety on problem-solving abilities.
H_0: There is allegedly no influence of student resilience on problem-solving skills.
H_2: There is allegedly no influence of student resilience on problem-solving skills.
H_0: It is suspected that there is no influence of learning anxiety and student resilience on problem-solving abilities.
H_3: It is suspected that there is no influence of learning anxiety and student resilience on problem-solving abilities.

Method

This study uses a quantitative approach with an ex post facto design and employs a survey method (Sugiyono, 2018). This design was chosen because the variables of learning anxiety and student resilience were conditions that had already been established and were not manipulated by the researcher. The research respondents were students at STAB Bodhidharma Medan, with a population of 89 people. The sampling technique used was simple random sampling from the student population at the school where the research was conducted (J. W. Creswell, 2013). Inclusion criteria included students who actively participated in learning, were willing to be respondents, and completed the research instruments. Research data were collected using questionnaires. Learning anxiety, student resilience, and problem-solving skills were measured using a 1-5 Likert scale. This study was a population study because the sample size was less than 100 (Arikunto, 2012).

The collected data were analyzed descriptively and inferentially. Descriptive analysis was used to describe the trends in students' learning anxiety, resilience, and problem-solving abilities. Prior to inferential analysis, prerequisite tests were conducted, such as normality tests, multicollinearity tests, heteroscedasticity tests, autocorrelation tests, and linearity tests. Furthermore, multiple linear regression analysis was used to test the effect of

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learning anxiety and resilience on problem-solving abilities, both simultaneously (J. Creswell & Plano, 2017).

Findings

a. Validity Test

Based on validity testing using SPSS, three items were found to be invalid in the learning anxiety variable, namely items 9 and 14, and one item was found to be invalid in the problem-solving ability variable, namely item 15. These items were declared invalid because the calculated r value was smaller than the table r value (0.361).

b. Reliability Test

Reliability testing in research aims to ensure that the instruments or measuring tools used are consistent, stable, and reliable when measuring the same variables under similar conditions. The results of the reliability test can be seen in Table 1 below:

Table 1. Uji Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.890	42

Source: Research Data Analysis Results, 2025

From the output table above, it can be seen that the number of items or questionnaire questions (N of Items) is 42 items with a Cronbach's Alpha value of 0.890. Since the Cronbach's Alpha value of 0.890 is greater than 0.60, based on the decision-making criteria in the reliability test, it can be concluded that the 42 questionnaire items on the variables of Learning Anxiety, Student Resilience, and Problem-Solving Ability are reliable or consistent.

Classical Assumption Test (Prerequisite)

a. Normality Test

The normality test aims to determine whether the data in the study is normally distributed or not. This is important because many statistical analysis techniques, such as regression, correlation, and other parametric tests, require that the data follow a normal distribution in order for the analysis results to be valid and interpretable.

Table 2. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		60
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	3.29777024
Most Extreme Differences	Absolute	.091
	Positive	.087
	Negative	-.091
Test Statistic		.091
Asymp. Sig. (2-tailed)		.200[c,d]

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a. Test distribution is Normal.
Source: Research Data Analysis Results, 2025

Based on the SPSS output table, it appears that the Asymp.Sig (2-tailed) significance value is 0.200, which is greater than 0.05. According to the decision criteria in the Kolmogorov-Smirnov normality test, this indicates that the data is normally distributed. Thus, it can be stated that the assumption or condition of normality in the regression model has been met.

b. Multicollinearity Test

The multicollinearity test aims to determine whether there is a very high relationship (strong correlation) between independent variables in a regression model. If the independent variables are overly correlated, the model becomes unstable and it is difficult to determine the effect of each variable. With this test, researchers can ensure that each independent variable is truly independent and suitable for inclusion in the regression analysis.

Table 3. Multicollinearity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF	
1	(Constant)	-1.905	4.881		-.390	.698		
	Learning Anxiety,	.699	.161	.628	4.339	.000	.262	3.820
	Student Resilience	.230	.148	.225	1.553	.126	.262	3.820

a. Dependent Variable: Problem Solving Skills
Source: Research Data Analysis Results, 2025

Based on the "Coefficients" output table in the "Collinearity Statistics" section, the Tolerance value for the Learning Anxiety (X1) and Student Resilience (X2) variables is 0.262, which is higher than 0.10. In addition, the VIF value for both variables is 3.820, which is still below the limit of 10.00. Based on the decision criteria in the multicollinearity test, it can be concluded that the regression model does not experience multicollinearity problems.

c. Heteroscedasticity Test (Glejser)

The heteroscedasticity test aims to determine whether there is a difference in residual variance for each independent variable value in the regression model. If the residual variance is not constant (heteroscedasticity occurs), the regression results may be inaccurate. With this test, researchers ensure that the regression model meets the basic assumptions so that the coefficient estimates are more valid and reliable.

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Table 4. Uji Heteroskedastisitas

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	6.988	2.269		3.080	.003		
	Learning Anxiety,	.000	.075	.000	.002	.005	.262	3.820
	Student Resilience	-.073	.069	-.266	-1.067	.004	.262	3.820

a. Dependent Variable: Abs_RES

Source: Research Data Analysis Results, 2025

Based on these outputs, the significance value (Sig.) for the Learning Anxiety variable (X1) is recorded at 0.005, while for the Student Resilience variable (X2) it is 0.004. Since the significance values of both variables are below 0.05, in accordance with the decision criteria in the Glejser test, it can be concluded that there is a phenomenon of heteroscedasticity in the regression model.

d. Durbin Watson Autocorrelation Test

The autocorrelation test aims to determine whether there is a relationship or correlation between the residuals in one observation and the residuals in other observations. If the residuals are correlated with each other, then autocorrelation occurs, which can cause the regression results to be biased. This test ensures that the regression model produces independent residuals so that the analysis is more accurate and reliable.

Table 5. Autocorrelation Test

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.266[a]	.071	.038	1.55943	2.110

a. Predictors: (Constant), Student Resilience, Learning Anxiety
b. Dependent Variable: Abs_RES

Source: Research Data Analysis Results, 2025

Based on the "Model Summary" output table above, we know that the Durbin-Watson (d) value is 2.110. Next, we will compare this value with the Durbin-Watson table value at a significance level of 5% using the formula (k ; N). The number of independent variables is 2 or "k" = 2, while the number of samples or "N" = 60, so (k ; N) = (2 ; 60). We then look at this number in the Durbin-Watson table distribution. We find that the value of dL is 1.5144 and the value of dU is 1.6518.

The Durbin-Watson (d) value of 2.110 is above the upper limit (dU) of 1.6518 and still below the value (4–dU) of 2.3482. Based on the decision criteria in the Durbin-Watson test, it can be concluded that there are no problems or indications of autocorrelation. Therefore, multiple linear regression analysis to test the research hypothesis can be conducted or continued.

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e. Linearity Test

The linearity test aims to ensure that the relationship between the independent variable and the dependent variable is linear. In other words, this test is used to see whether changes in the independent variable are proportionally related to changes in the dependent variable. If the relationship is not linear, then the linear regression model is not appropriate to use, and the analysis results may be less accurate.

Table 6. Linearity Test

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Problem Solving Skills * Learning Anxiety	Between Groups	(Combined)	1481.043	19	77.950	5.454	.000
		Linearity	1383.939	1	1383.939	96.831	.000
		Deviation from Linearity	97.104	18	5.395	.377	.986
	Within Groups		571.690	40	14.292		
	Total		2052.733	59			

Source: Research Data Analysis Results, 2025

Based on the ANOVA table above, the Deviation from Linearity Sig. value is 0.986, which is greater than 0.05. Therefore, it can be concluded that there is a significant linear relationship between the variables of learning anxiety (X1), student resilience (X2), and problem-solving ability (Y).

Partial Regression Test of Learning Anxiety Variable (X1) Against Problem Solving Ability Variable (Y).

Table 7. Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.821[a]	.674	.669	3.396

a. Predictors: (Constant), Learning Anxiety
b. Dependent Variable: Problem Solving Skills
Source: Research Data Analysis Results, 2025

Based on the Model Summary output in the simple linear regression analysis, an R value of 0.821 was obtained, indicating that there is a very strong relationship between learning anxiety and students' problem-solving abilities. The R Square value of 0.674 indicates that 67.4% of the variation in problem-solving ability can be explained by the variable of learning anxiety, while the remaining 32.6% is influenced by other factors outside this model..

Partial Regression Test of Student Resilience Variable (X2) on Problem-Solving Ability Variable (Y)

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Table 8. Model Summary

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.764[a]	.584	.577	3.836

a. Predictors: (Constant), Student Resilience
b. Dependent Variable: Problem Solving Skills
Source: Research Data Analysis Results, 2025

Based on the output of the Model Summary of the simple linear regression analysis, an R value of 0.764 was obtained, indicating that there is a strong relationship between student resilience and problem-solving ability. The R Square (R^2) value of 0.584 means that 58.4% of the variation in students' problem-solving abilities can be explained by the student resilience variable, while the remaining 41.6% is influenced by other factors outside the model.

Multiple Regression Test (Simultaneous)

Table 9. Model Summary Multiple Regression

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.829[a]	.687	.676	3.355

a. Predictors: (Constant), Student Resilience, Learning Anxiety
b. Dependent Variable: Problem Solving Skills
Source: Research Data Analysis Results, 2025

Based on the SPSS output table "Model Summary," the coefficient of determination or R Square value obtained is 0.687. This means that the coefficient of determination (R Square) is 0.687 or 68.7%. This value indicates that the variables of learning anxiety (X1) and student resilience (X2) simultaneously contribute 68.7% to the variable of problem-solving ability (Y). Meanwhile, the remaining 31.3% (100% – 68.7%) is explained by other factors outside this regression model or variables that were not studied.

Table 10. Anova

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1411.091	2	705.546	62.677	.000[b]
	Residual	641.642	57	11.257		
	Total	2052.733	59			

a. Dependent Variable: Problem Solving Skills
b. Predictors: (Constant), Student Resilience, Learning Anxiety
Source: Research Data Analysis Results, 2025

Based on the SPSS output table, a significance value (Sig.) of 0.000 was obtained. Since this value is less than 0.05, according to the decision criteria in the F test, it can be concluded that the hypothesis is accepted. Thus, the variables of learning anxiety (X1) and student resilience (X2) are proven to simultaneously influence the variable of Problem Solving

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Ability (Y).

Table 11. Coefficients

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1.905	4.881		-.390	.698		
	Learning Anxiety,	.699	.161	.628	4.339	.000	.262	3.820
	Student Resilience	.230	.148	.225	1.553	.126	.262	3.820

a. Dependent Variable: Problem Solving Skills
Source: Research Data Analysis Results, 2025

Based on the output of the Coefficients table in the multiple linear regression analysis, the regression equation obtained is Y = -1.905 + 0.699X_1 + 0.230X_2, where Y is problem-solving ability, X_1 is learning anxiety, and X_2 is student resilience. The constant value of -1.905 indicates that when learning anxiety and student resilience are at zero, problem-solving ability is at a base value of -1.905. The regression coefficient for learning anxiety of 0.699 indicates that every one-unit increase in learning anxiety will increase problem-solving ability by 0.699 units, assuming other variables remain constant. Meanwhile, the regression coefficient for student resilience of 0.230 means that every one-unit increase in student resilience will increase problem-solving ability by 0.230 units.

The significance test results show that the learning anxiety variable has a Sig. value of 0.000 (< 0.05), so it can be concluded that this variable has a significant partial effect on problem-solving ability. Conversely, the student resilience variable has a Sig. value of 0.126 (> 0.05), so it does not have a significant partial effect. In addition, the Tolerance value of 0.262 (> 0.10) and the VIF value of 3.820 (< 10) indicate that there is no multicollinearity problem between the two independent variables in this model. Thus, the regression model can be used, and the learning anxiety variable is proven to contribute significantly to explaining problem-solving ability.

Discussion

The Effect of Learning Anxiety on Students' Problem-Solving Abilities

Based on the results of simple linear regression analysis shown in the Model Summary output, the correlation coefficient R = 0.821 and the coefficient of determination R^2 = 0.674 were obtained. This statistical evidence shows that there is a very strong and significant relationship between learning anxiety and students' problem-solving abilities, with an explanatory contribution of 67.4% to the variation in problem-solving abilities. A high R value indicates that learning anxiety is a strong predictor of student performance in problem solving. When considering the direction of the relationship (positive or negative), the sign of the regression coefficient must be seen in the coefficient table (which is generally negative based on anxiety theory). Since the available data only shows R and R^2, theoretically, the relationship can be interpreted as a negative one, meaning that the higher the learning anxiety, the lower the students' problem-solving ability. This is in line with cognitive psychology theories that place anxiety as a factor that interferes with the

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thinking process. Thus, the strong statistical evidence in this study leads to the preliminary conclusion that learning anxiety has a substantial influence on students' cognitive performance in solving academic problems.

When viewed through the perspective of Spielberger's anxiety theory (State–Trait Anxiety Theory), this relationship can be explained further (Setyananda et al., 2021). Spielberger distinguishes anxiety into state anxiety, which is anxiety that arises temporarily in certain situations such as exams or completing difficult tasks, and trait anxiety, which is an individual's stable tendency to feel anxiety in various situations (Utami & Nurjati, 2017). Theoretical analysis shows that both forms of anxiety can inhibit problem-solving abilities because they trigger intrusive thoughts, worries, and fear of failure, which ultimately divert students' attention from the task at hand and focus it on perceived threats. In other words, the empirical evidence from this study is consistent with Spielberger's idea that anxiety has a debilitating effect on students' systematic thinking (Sumartini, 2016). The theoretical interpretation of these findings indicates that most students are likely to experience increased state anxiety when faced with problem-solving questions, thereby distorting their cognitive workspace due to emotional pressure (Pangestu, 2019). The conclusion that can be drawn is that the significant relationship between anxiety and problem-solving ability cannot be separated from the combined influence of state anxiety and trait anxiety, which affect the quality of students' thinking processes.

This relationship can also be analyzed based on Yerkes–Dodson's Law, which states that the relationship between arousal levels (including anxiety) and performance follows an inverted U-shaped curve (Teigen, 1994). At low levels of interest, individuals tend to be unfocused and unmotivated; at very high levels of interest, performance declines due to excessive emotional pressure. Optimal performance only occurs at moderate levels of interest (Broadhurst, 1957). If the relationship is positive in this study, it can be interpreted that the anxiety that arises is at a moderate level, which is actually motivating (facilitating anxiety), encouraging students to be alert and prepared when working on problems (Elbæk et al., 2022). However, if the score reflects high anxiety, then the relationship is more accurately interpreted as a substantive negative relationship because anxiety that exceeds the optimal limit actually cripples performance. Empirical evidence in the form of a 67.4% contribution shows that the anxiety experienced by students is significant enough to affect the way they think and make decisions. Interpretation from the Yerkes–Dodson perspective clarifies that anxiety is not merely a negative factor, but its effects depend on intensity, context, and students' ability to adapt to pressure. The local conclusion is that this study supports the Yerkes–Dodson conceptual framework, which places anxiety as a psychological variable that must be regulated at an optimal level to maximize problem-solving abilities.

From Bandura's perspective, particularly his theory of self-efficacy, the relationship between anxiety and problem-solving ability becomes increasingly clear. Evidence from various Bandura studies shows that low self-efficacy increases academic anxiety, while high self-efficacy reduces anxiety while increasing persistence and effectiveness in using problem-solving strategies. In this context, students who feel unable to solve problems tend to experience high anxiety, which ultimately reduces their ability to work through the steps of systematic problem solving. This analysis leads to the interpretation that anxiety may act as a mediator linking low self-efficacy with low problem-solving performance. This means that students fail not only because they do not master the concepts, but also because their lack of self-confidence causes negative emotional reactions that inhibit the

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thinking process. The local conclusion that can be drawn is that the role of anxiety in reducing problem-solving abilities is likely reinforced by students' low self-efficacy, so that interventions to increase self-confidence have the potential to reduce anxiety while improving their problem-solving abilities.

Mechanistically, the effect of anxiety on problem-solving ability can be explained through disturbances in attention, working memory, and higher-level cognitive processes. Empirical evidence from modern neuropsychological studies shows that anxiety triggers an increase in self-focused attention and intrusive thoughts, causing students to lose focus on important information in the questions. Anxiety also reduces working memory capacity, which is essential for storing and manipulating information during the problem-solving process. When most of the working memory is used to process fear of failure or negative thoughts, the remaining capacity is insufficient to execute complex problem-solving strategies. This cognitive analysis reinforces the interpretation that anxiety is not only an emotional condition, but a real cognitive barrier, so that high anxiety has the potential to cause students to misunderstand problems, choose the wrong strategies, or give up before trying. The local conclusion that emerges is that the empirical findings of this study are fully consistent with modern cognitive theory, which places anxiety as a core inhibiting variable in the thinking and problem-solving process.

The Effect of Student Resilience on Student Problem-Solving Skills

The findings of this study indicate that student resilience has a strong relationship with problem-solving abilities, where resilience has been proven to contribute substantially to variations in students' abilities to solve academic problems (Amalia & Ahmad, 2023). The significance of these findings lies not in the statistics, but in the scientific implication that resilience is not merely an additional psychological attribute, but a key factor that enables students to persevere, adapt, and think effectively in challenging learning situations. Resilience helps students to face obstacles without giving up easily, remain calm under pressure, and seek alternative solutions when initial strategies fail. Thus, these results confirm that problem-solving ability does not depend solely on cognitive aspects, but is greatly influenced by students' emotional and psychological abilities to manage stress, maintain motivation, and reorganize their thinking strategies.

Theoretically, the results of this study are in line with various modern educational psychology models, especially the theory of resilience, which views resilience as a positive adaptation process when individuals face difficulties (Fatika Sari & Munawaroh, 2022). In the context of learning, academic pressure, complex assignments, and uncertainty about answers are sources of challenges that test students' adaptive abilities. Resilient students have the capacity to endure pressure, adjust strategies, and remain focused on their goals, enabling them to solve problems more systematically (Nurmalasari & Sanyata, 2021)In addition, Bandura's concept of self-efficacy provides a strong interpretive framework stating that students with high resilience tend to have high self-confidence, which allows them to view challenges as opportunities for growth rather than threats (Rahayuningtyas et al., 2020). This self-confidence encourages them to try new strategies, engage in self-evaluation, and use metacognitive skills that are crucial in problem solving. Thus, the findings of this study provide empirical support for self-regulation and self-efficacy theories, which emphasize that psychological factors mediate the effectiveness of students' cognitive processes (Bandura, 2010).

When compared to previous studies, these results are consistent with a number of studies

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reporting that resilience plays a significant role in improving academic performance, learning persistence, and mental resilience among students (Nurmalasari & Sanyata, 2021; Septiana, 2021; Solihin et al., 2020). This similarity reinforces the understanding that resilience is a protective factor that helps students cope with high academic demands. However, several previous studies reported a lower effect when other variables such as basic academic ability, intelligence, and family support were included as covariates. This difference shows that the strength of resilience's influence can vary depending on the learning context, academic pressure, student characteristics, and the surrounding educational situation. In the context of this study, resilience appears to be a more dominant factor, possibly because students are faced with problem-solving tasks that require high perseverance, the ability to manage frustration, and mature decision-making (Vivin, 2019). Thus, this study not only aligns with previous findings, but also provides an additional contribution in the form of confirmation that resilience can be a stronger predictor in the context of learning that demands higher-order thinking skills (Milena et al., 2022).

Overall, the findings of this study confirm that student resilience plays an important role in determining their problem-solving abilities. These results are relevant to the research objective of identifying non-cognitive factors that contribute to problem-solving performance. At a theoretical level, these findings enrich the scientific discourse on the role of psychological factors in learning, while at a practical level, they provide a basis for educators and policymakers to consider the development of resilience as an integral part of the curriculum and learning strategies. Thus, this discussion shows that the research not only answers the initial research questions but also opens up opportunities for a more holistic learning approach, which combines the development of cognitive and psychosocial aspects to improve students' problem-solving abilities.

The Effect of Learning Anxiety and Student Resilience on Students' Problem-Solving Abilities

Based on the results of multiple regression analysis, a multiple correlation coefficient of R = 0.829 and a coefficient of determination of R^2 = 0.687 were obtained. Substantively, this figure shows that learning anxiety and student resilience simultaneously have a very strong relationship with problem-solving abilities, where 68.7% of the variation in problem-solving abilities can be explained by the combination of these two psychological variables, while the remaining 31.3% is influenced by other factors outside the model. This suggests that students' success in problem solving is not solely a matter of mastery of material or intellectual ability, but is largely determined by how they manage anxiety and how resilient they are when facing academic difficulties.

When viewed from a theoretical perspective, the simultaneous contribution of anxiety and resilience can be explained through the integration of several educational psychology frameworks. Spielberger's theory of state–trait anxiety and Yerkes–Dodson's law assert that excessive anxiety will interfere with attention, working memory, and logical thinking processes, thereby reducing problem-solving performance (Ulfiani et al., 2015). In contrast, the theory of resilience views resilience as the ability to adapt positively in the face of pressure, which makes students more capable of persevering, trying again, and seeking alternative strategies when they experience failure (Syam, 2020). In this context, anxiety functions as a risk factor, while resilience functions as a protective factor (Kodirun et al., 2017). Strong multiple regression results indicate that good problem-solving abilities emerge when maladaptive anxiety can be suppressed and resilience acts as a buffer that

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reduces the destructive impact of anxiety on cognitive function (Ulfiani et al., 2015).

These findings are also in line with Bandura's self-efficacy theory and the concept of self-regulated learning. Resilient students generally have higher academic self-confidence, viewing difficult tasks as challenges that can be overcome, rather than threats to be avoided. This self-confidence encourages them to plan steps for completion, monitor progress, evaluate mistakes, and persevere longer when facing obstacles. On the other hand, high anxiety is usually associated with low self-efficacy and causes negative thoughts that take up working memory capacity. Therefore, psychologically, the high problem-solving ability in this model can be interpreted as the result of an interaction between low disruptive anxiety and high resilience and self-efficacy that support deep cognitive engagement (Milena et al., 2022).

Compared to previous studies, the relationship patterns found in this study are consistent with many findings that show that academic anxiety tends to decrease achievement, while resilience and self-efficacy increase academic performance and learning persistence. However, the explanatory power of 68.7% is relatively high, indicating that in the context of this sample and learning environment, the combined role of anxiety and resilience is very dominant in problem-solving abilities. This has important implications for educational practice: interventions to improve problem-solving skills should not only focus on cognitive strategy training and problem-solving exercises, but should also be accompanied by systematic programs to manage learning anxiety (e.g., through counseling, coping skills, and a supportive classroom climate) and develop student resilience (through providing gradual success experiences, constructive feedback, and strengthening self-efficacy). Thus, these multiple regression results confirm that students' problem-solving abilities are the product of synergy between emotional conditions and psychological strengths, so that the development of cognitive and affective aspects must be integrated in the educational process.

Conclusion

The findings of this study indicate that learning anxiety plays a significant role in reducing students' decision-making abilities. Students who experience heightened anxiety tend to struggle with maintaining clear thinking, show hesitation when selecting alternatives, and are more susceptible to negative thought patterns. These conditions weaken the overall effectiveness of their academic decision-making processes. This evidence supports the hypothesis that learning anxiety influences decision-making ability.

The study also demonstrates that student resilience contributes positively to decision-making skills. Individuals with higher resilience levels are better equipped to endure pressure, interpret challenges as opportunities for growth, and evaluate diverse options before reaching a decision. Thus, the hypothesis that resilience serves as a strengthening factor for decision-making ability is substantiated.

Furthermore, the results confirm that learning anxiety and resilience jointly shape students' decision-making abilities. Effective decision-making emerges not only when anxiety is well-managed but also when resilience enables students to consider alternatives thoughtfully and confidently. Therefore, the hypothesis stating that both variables simultaneously affect decision-making skills is supported by the empirical findings.

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