

## THE INFLUENCE OF LEARNING MOTIVATION AND GRIT ON THE GROWTH MINDSET OF SENIOR HIGH SCHOOL STUDENTS IN THE ANAMBAS ISLANDS

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### ABSTRACT

The purpose of this study was to determine the influence of Learning Motivation and Grit on Growth Mindset among senior high school students in the Anambas Islands. This research employed a quantitative method with a total population of 324 students and a sample of 235 respondents. The sampling technique used was probability sampling, and the data analysis technique applied was multiple regression analysis. Based on the results of hypothesis testing, the multiple regression analysis showed that the regression coefficient of the Learning Motivation variable (t-calculated) was 2.458, with a t-table value of 1.651. The significance value of Learning Motivation toward the related variable, Growth Mindset, was  $0.000 < 0.05$ . Furthermore, the regression coefficient of the Grit variable (t-calculated) was 2.803, with a t-table value of 1.651, and the significance value of Grit toward Growth Mindset was  $0.001 < 0.05$ . Additionally, based on the F-test results, the F-calculated value was 46.675, while the F-table value was 3.041, with a significance value of  $0.000 < 0.050$ . Thus, since  $F\text{-calculated} > F\text{-table}$  and the significance value is below 0.050, it can be concluded that Learning Motivation and Grit simultaneously have a significant influence on students' Growth Mindset.

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### INTRODUCTION

Education is a learning process aimed at developing an individual's physical and mental potential. In a broader context, education encompasses efforts to develop the knowledge, skills, and values needed for social and cultural

life. Education provides opportunities to acquire broader knowledge and helps individuals understand various aspects of life and the world around them.

According to Lickona (2021), quality education must include the teaching of moral and social values needed to shape individuals into responsible persons. Education plays an essential role in shaping character and instilling values within individuals. Thus, character education aims to develop positive attitudes and ethical behaviors in students.

Education is a crucial element in the character development of individuals and communities, especially in areas with unique challenges such as the Anambas Islands Regency. Students in this region often face various obstacles, both in terms of access to education and character development. Students are required to be more active and independent in learning. Based on the researcher's observations, many challenges and failures were encountered by students, reflected in the high number of students submitting assignments past the deadline, participating in remedial programs, and receiving unsatisfactory grades, resulting in repeating certain subjects.

The researcher also found that many students submitted tasks after the deadline, took remedial examinations, and received low academic performance, leading them to repeat courses they had failed. When facing the same difficulties and failures, some students continued striving to improve their grades, whereas others showed no effort, appearing passive, resigned, and unconcerned about their results. This indicates that many students may lack understanding of the growth mindset concept, resulting in unawareness of the importance of effort and perseverance in learning. Consequently, the question arises regarding the source of these differing attitudes toward challenges and failures. Therefore, it is important to understand students' mindsets, particularly in the context of growth mindset, and how these concepts influence their learning motivation and level of perseverance (grit).

According to Dweck (2016), a psychologist from Stanford University who first introduced the concept of growth mindset, this mindset is defined as the belief that one's abilities and intelligence can be developed through effort and experience. Thus, growth mindset is considered a key to success because individuals with this mindset believe that their talents can continuously be improved through appropriate strategies, persistence, consistency, and constructive feedback from others.

Students with a growth mindset tend to take risks and are less likely to give up when facing challenges. They are more resilient toward failure and difficulties. When students encounter obstacles, their mindset develops, motivating them to persist, thereby strengthening their resilience—one of the main components of grit (Yeager & Dweck, 2020). According to Zhang (2021), intrinsic motivation is a crucial factor in developing grit. Students with a growth mindset possess higher motivation and stronger willingness to study and make an effort because they believe that their efforts will lead to improvement in their abilities. This increases their commitment to achieving long-term goals.

Conversely, Dweck explains that a fixed mindset refers to the belief that talent is innate and cannot be changed. A fixed mindset represents the view that abilities are static traits, which limits students' potential to grow. Individuals with a fixed mindset tend to be less resilient when facing failure and challenges. When confronted with difficulties, students with a fixed mindset easily feel discouraged and lose motivation (Dweck & Yeager, 2015).

Intrinsic motivation is an important factor in developing grit. Students with a fixed mindset generally have lower motivation to learn and persevere because they believe that no amount of effort will produce better results. As a result, they are less willing to endure long and difficult learning processes (Wang & Zhang, 2021). This negatively affects their grit, as persistence is a key component of grit.

Student learning motivation is the internal drive or desire that encourages individuals to engage in the learning process. Motivated students have a strong desire to learn and retain the knowledge they acquire. Motivation helps students persist even when facing difficulties and encourages them to find solutions to their problems. However, students with low motivation struggle to reach their full potential and tend to experience negative impacts on their academic and personal lives. They are more likely to achieve poor grades and fail to reach academic goals.

Learning activities supported by motivation are closely associated with the need for self-actualization; therefore, motivation significantly influences students' learning activities and their academic achievement. Lack of motivation often leads to laziness during learning activities, self-study, or assignment completion. Conversely, highly motivated students show consistent willingness and intention to learn and complete assignments (Lomu & Widodo, 2018).

Rahman (2022) states that students' success in learning is determined by their motivation. Students with high learning motivation tend to achieve higher academic performance, whereas those with low motivation tend to perform poorly. The level of motivation determines a person's effort and enthusiasm for learning, which subsequently influences the outcomes obtained.

Grit is a widely studied psychological construct popularized by Angela Duckworth, a psychologist from the University of Pennsylvania, who defined it as perseverance and passion for long-term goals. It is an important indicator of academic success. Grit not only contributes to performance but is considered a key to achieving long-lasting success. Duckworth argues that education is not solely about academics but also about character development. Grit is an essential aspect that must be instilled in students so they can develop positive attitudes and resilience, which will benefit their lives both in school and in the future (Duckworth et al., 2017). She explains that grit consists of two main components: perseverance and passion, the latter reflecting deep enthusiasm toward achieving long-term goals. Research shows that students with high grit are better able to overcome challenges and reach their goals, highlighting the importance of fostering grit among secondary school students.

Based on this study conducted in the Anambas Islands Regency, students often face limitations in educational resources and support. Wang et al. (2018) revealed that supportive environments and positive mindsets promote the development of grit in students. Thus, grit is vital in creating a learning environment that fosters growth mindset among students. Several studies have shown a significant relationship between mindset and grit. Claro et al. (2016) found that students with stronger growth mindset tend to persist through difficulties, positively affecting their level of grit.

The researcher also observed that motivation, grit, and growth mindset are relatively new topics within the specific geographical context of the Anambas Islands, a region characterized by geographical challenges and limited educational access. Research in such regions provides new insights into how psychological factors such as learning motivation, grit, and growth mindset interact in contexts different from urban or mainland areas.

Students in the Anambas Islands Regency frequently experience limitations in resources and educational support. This study highlights the importance of interventions to shift students' mindsets toward a more positive direction through growth mindset, which is expected to enhance their motivation and grit. This is highly relevant to efforts aimed at improving education quality in regions facing similar challenges, where these three factors collectively contribute to shaping students' character.

Previously, secondary schools in the Anambas Islands had implemented various learning models that encouraged students to solve real-world problems relevant to academic materials. However, these methods often involve complex tasks that require significant time, adding pressure to students—especially those with multiple

assignments from different subjects. Many students become overwhelmed by the volume of information they must find and analyze.

In such learning models, students often feel pressured to perform. Group-based activities may intimidate students who believe they are not contributing significantly, leading to stress and concern over group evaluation. The unclear learning objectives in some models also cause confusion. Many students may still not understand the concept of growth mindset, making them unaware of the importance of consistent effort and perseverance. As a result, when they receive unsatisfactory outcomes, they make no effort to improve and simply accept their results.

A growth mindset is crucial for students in facing academic difficulties and challenges. Students with this mindset are generally more resilient and open to learning. Understanding how learning motivation and grit contribute to the development of growth mindset is a critical step toward creating a supportive and motivating educational environment. Knowledge about the factors influencing growth mindset helps educators design more effective teaching methods. Additionally, the findings of this study may serve as a reference for policymakers in developing programs that support character development, especially in underserved areas. Thus, this research has the potential to provide significant positive contributions to the development of education in the Anambas Islands Regency.

This study demonstrates the importance of efforts to shift students' mindsets toward growth mindset, which subsequently affects their motivation and grit levels. In the context of secondary education, students begin to face more complex academic and social challenges. According to Eskreis-Winkler et al. (2014), students with high grit are better prepared to face challenges both inside and outside school. Therefore, exploring how mindset plays a crucial role in influencing students' perseverance is essential.

Based on the preceding explanation, the researcher concludes that students' growth mindset in facing academic challenges and failures is related to their learning motivation and grit. Furthermore, no previous study has specifically examined these variables within this context. This forms the basis for investigating The Influence of Learning Motivation and Grit on Growth Mindset among Senior High School Students in the Anambas Islands. The objectives of this study are as follows: To determine the influence of learning motivation on growth mindset among senior high school students in the Anambas Islands. To determine the influence of grit on growth mindset among senior high school students in the Anambas Islands. To determine the simultaneous influence of learning motivation and grit on growth mindset among senior high school students in the Anambas Islands. The research questions are: Is there an influence of learning motivation on students' growth mindset. Is there an influence of grit on students' growth mindset. Is there a simultaneous influence of learning motivation and grit on students' growth mindset in the Anambas Islands.

## METHOD

This study employed a quantitative method with a descriptive–correlational approach, which aims to explain the relationship between the variables of learning motivation, grit (perseverance), and growth mindset among students. According to Sugiyono (2016), the quantitative method is based on the positivist paradigm and is used to investigate specific populations or samples through objective data-collection techniques, which are then analyzed using statistical methods to test predetermined hypotheses. The variables in this study consist of two independent variables, namely learning motivation ( $X_1$ ) and grit ( $X_2$ ), and one dependent variable, growth mindset ( $Y$ ). The operational definitions of each variable were formulated based on relevant theories: learning motivation includes the aspects of initiating, directing, and sustaining (Putrwanto, 2021); growth mindset refers to the belief that intelligence can be developed



through effort and guidance (Bess, 2020); while grit emphasizes passion, persistence, goal focus, the ability to overcome obstacles, and discipline (Wahidah & Herdian, 2021).

The population of this study consisted of all students of SMA Negeri 1 Siantan Selatan for the academic years 2022–2025, totaling 324 students, while the sample comprised 235 students selected using purposive sampling based on predetermined criteria relevant to the research focus. Data were collected using a questionnaire with a four-point Likert scale, consisting of favorable and unfavorable statements. This scale was employed to measure the respondents' attitudes, perceptions, and level of agreement toward the statements developed according to the indicators of each variable. Each variable was measured using an instrument constructed based on a blueprint derived from the supporting theoretical framework. Data analysis was conducted using multiple linear regression to determine the influence of learning motivation and grit on growth mindset. Prior to hypothesis testing, classical assumption tests—including normality and linearity tests—were performed to ensure that the data met statistical requirements. Through this approach, the study is expected to objectively describe the relationships among the variables and explain the contribution of each independent variable to the development of students' growth mindset.

## RESULT AND DISCUSSIONS

### Research Location Orientation

This research was conducted at SMA Negeri Siantan Selatan, located in Anambas Islands Regency, Riau Islands Province. The school's vision is "Excellent, Characterized, Cultured, and Globally Oriented," with a mission to develop the *Profil Pelajar Pancasila* through six core dimensions: faith and devotion to God Almighty, global diversity, cooperation, creativity, critical thinking, and independence. In addition, the school is committed to implementing student-centered learning, creating a safe and comfortable learning environment, and optimizing the use of information technology in academic and administrative activities.

### Research Preparation

The preparation stage included obtaining research permission from the Principal and issuing an official research letter from the Master of Psychology Postgraduate Program at Universitas Medan Area. The researcher also prepared measurement instruments through a literature review related to the three main constructs: Learning Motivation, Grit, and Growth Mindset. After the proposal was approved by the academic supervisor, three measurement scales were developed and tested for validity and reliability before being used in the field.

### Instrument Trial and Validation

The three scales used in this research—Learning Motivation, Grit, and Growth Mindset—were tested using Corrected Item-Total Correlation analysis and Cronbach's Alpha reliability testing.

The Growth Mindset Scale consisted of 68 items, with 60 valid items ( $r > 0.3$ ) and 8 discarded items. The reliability value was 0.921, indicating excellent reliability.

The Learning Motivation Scale consisted of 29 items, with 26 valid items and 3 discarded items. The reliability value was 0.905, indicating high internal consistency.

The Grit Scale consisted of 48 items, with 42 valid items and 6 discarded items. The reliability value was 0.952, indicating very strong reliability.

Overall, all three measurement instruments were declared valid and reliable for use in the study.

## Research Implementation

Data collection was conducted from July 23–25, 2025, involving 235 students from grades X and XI at SMA Negeri Siantan Selatan. The respondents were asked to complete three research scales: Learning Motivation ( $X_1$ ), Grit ( $X_2$ ), and Growth Mindset ( $Y$ ). The collected data were then processed using SPSS 23.0 for Windows through descriptive analysis, assumption testing, and multiple regression analysis.

### Assumption Testing Normality Test

**Table 1. Summary of Normality Test Results**

Variable	Mean	SD	K-S	Sig	Description
Learning Motivation	64.03	11.495	0.174	0.119	Normal
Grit	103.49	18.079	0.200	0.092	Normal
Growth Mindset	153.85	19.256	0.126	0.104	Normal

Notes:

K-S = Kolmogorov–Smirnov coefficient

P = Significance value

Based on the table above, the data distribution in this study was normal, as the significance values for learning motivation, grit, and growth mindset were all above 0.050: learning motivation = 0.119 > 0.050; grit = 0.092 > 0.050; and growth mindset = 0.104 > 0.050.

### Uji Linearitas Linearity Test

**Table 2. Summary of Linearity Test Results**

Correlation	$r^{xy}$	F	P (sig)	Description
$X_1 - Y$	0,538	35.302	0,101	Linear
$X_2 - Y$	0,544	11,377	0,095	Linear

Notes:

$X_1$  = Learning Motivation

$X_2$  = Grit

$Y$  = Growth Mindset

F = Output value

P = Significance

Based on the table above, the variables Learning Motivation and Growth Mindset have a linear relationship, as indicated by  $p > 0.050$  (0.101 > 0.050). Likewise, Grit and Growth Mindset also have a linear relationship with  $p > 0.050$  (0.095 > 0.050).

### Multiple Regression Analysis

Multiple linear regression analysis was conducted using the equation  $Y = a + b_1X_1 + b_2X_2$ , and the calculation results are presented as follows:

**Table 3. Multiple Regression Analysis**

Coefficients <sup>a</sup>					
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	10.395	6.665		13.563
					Sig.
					.000

Learning Motivation	3.456	.185	1.273	2.458	.005
Grit	2.331	.118	1.311	2.803	.006

The resulting regression equation is:

$$Y = 10.395 + 3.456X_1 + 2.331X_2$$

Description:

Y = Dependent variable (Growth Mindset)

X (1,2)= Independent variables

a = Constant value

b (1,2) = Regression coefficients

Interpretation:

1. The constant value  $a = 10.395$  indicates that if Learning Motivation and Grit are not included in the model, the Growth Mindset of students at SMA Negeri Siantan Selatan would still increase by 4.485%.
2. The coefficient  $b_1 = 3.456$  means that if the Learning Motivation variable increases by one unit, students' Growth Mindset will increase by 0.649%.
3. The coefficient  $b_2 = 2.331$  means that if the Grit variable increases by one unit, students' Growth Mindset will increase by 0.235%.

### Hypothesis Testing

#### Partial Test (t-test)

The partial test results show that Learning Motivation has a t-value of  $2.458 > t\text{-table } 1.651$  with a significance value of  $0.005 < 0.05$ , indicating a significant effect on Growth Mindset. The Grit variable also shows a t-value of  $2.803 > t\text{-table } 1.651$  with a significance value of  $0.006 < 0.05$ , which means it has a significant effect on Growth Mindset. Thus, both partial hypotheses are accepted.

#### Simultaneous Test (F-test)

The F-test result shows an F-value of  $46.675 > F\text{-table } 3.041$  with a significance value of  $0.000 < 0.05$ . This indicates that Learning Motivation and Grit simultaneously have a significant effect on the Growth Mindset of students at SMA Negeri Siantan Selatan.

#### Coefficient of Determination ( $R^2$ )

Nilai koefisien determinasi ( $R^2$ ) sebesar 0,316, menunjukkan bahwa *Motivasi Belajar* dan *Grit* memberikan kontribusi sebesar 31,6% terhadap pembentukan *Growth Mindset* siswa, sedangkan sisanya 68,4% dipengaruhi oleh faktor lain di luar penelitian ini.

The coefficient of determination ( $R^2$ ) is 0.316, indicating that Learning Motivation and Grit contribute 31.6% to the development of students' Growth Mindset, while the remaining 68.4% is influenced by other factors outside this study.

**Table 4. Summary of Determination Coefficient Calculation**

Statistic	Koef. Det. ( $R^2$ )	BE%	Sig	Description
X1.X2 – Y	0.316	31,6 %	0.000	Sig

Description:

X <sub>1</sub>	= Learning Motivation
X <sub>2</sub>	= Grit
Y	= Growth Mindset
R <sup>2</sup>	= Coefficient of determination of X <sub>1</sub> and X <sub>2</sub> on Y
P	= Significance value
BE%	= Effective contribution weight of X <sub>1</sub> and X <sub>2</sub> to Y (in percentage)
Remark	= Significance description

## Results of Hypothetical and Empirical Mean Calculations

### Hypothetical Mean

For the Learning Motivation variable, the number of valid items is 26, arranged using a four-point Likert scale. Thus, the hypothetical mean is calculated as:  $(26 \times 1) + (26 \times 4) \div 2 = 65$ . For the Grit variable, the number of valid items is 42, also arranged using a four-point Likert scale. Therefore, the hypothetical mean is:  $(42 \times 1) + (42 \times 4) \div 2 = 105$ . For the Growth Mindset variable, the number of valid items is 60, and using the same Likert scale format, the hypothetical mean is:  $(60 \times 1) + (60 \times 4) \div 2 = 150$ .

### Empirical Mean

Based on the data analysis results obtained from the descriptive analysis of the multiple regression test, the empirical mean for the Learning Motivation variable is 64.03; the empirical mean for the Grit variable is 103.49; and the empirical mean for the Growth Mindset variable is 153.85.

### Criteria

To determine the category level of Learning Motivation, Grit, and Growth Mindset, the empirical mean is compared with the hypothetical mean while considering the standard deviation (SD) of each variable. The SD for Learning Motivation is 11.495, for Grit 18.079, and for Growth Mindset 19.256.

If the empirical mean is higher than the hypothetical mean with a difference exceeding the SD value, the variable is categorized as high. Conversely, if the empirical mean is lower than the hypothetical mean with a difference exceeding the SD value, it is categorized as low. The comparison between hypothetical mean, empirical mean, and SD is presented in the following table.

**Table 5. Calculation Results of Hypothetical and Empirical Mean Values**

Variable	SD	Mean Value		Category
		Hypothetical	Empirical	
Learning Motivation	11.495	55	64.03	Moderate
Grit	18.079	105	103.49	Moderate
Growth Mindset	19.256	150	153.85	Low

## DISCUSSIONS

### The Influence of Learning Motivation on Growth Mindset

Based on the results of the regression coefficient analysis, the calculated t-value (t-count) of the Learning Motivation variable is 2.458, with a t-table value of 1.651. The significance value of the Learning Motivation variable on the related variable, namely students' Growth Mindset, is 0.000, which is lower than the alpha value of 0.05. Thus,



since  $t\text{-count} > t\text{-table}$  and the significance value  $0.000 < 0.05$ , it can be concluded that the Learning Motivation variable has a significant effect on students' Growth Mindset, and therefore, the first hypothesis is accepted.

The findings of this study indicate that a growth mindset contributes significantly to the enhancement of students' learning motivation. This aligns with Abernethy et al. (2021), who argue that a growth mindset fosters a positive attitude toward learning, enhances resilience, and encourages active engagement in the learning process. Individuals with a growth mindset tend to believe that abilities can be improved through effort and guidance, which strengthens their confidence and willingness to continue learning. However, based on the researcher's observations, students' learning motivation in general is still categorized as moderate. This can be seen from their inconsistent engagement in the learning process, passive responses to feedback, and limited initiative in setting clear learning goals.

These findings suggest that although some students demonstrate a tendency toward a growth mindset, its implementation has not been fully optimized in enhancing overall learning motivation. This may be due to insufficient environmental support, such as poorly structured learning strategies, or the limited role of teachers and parents in fostering a growth-oriented mindset. Andersen and Nielsen (2016) assert that both growth mindset and learning motivation are influenced not only by individual factors but also by parental support. In this study, some students were found to receive limited verbal or emotional reinforcement encouraging the belief that their abilities could improve, leading to suboptimal learning motivation.

Furthermore, Richardson et al. (2021) explain that learners with a growth mindset are typically open to challenges, persistent, and actively seek feedback for self-improvement. However, observations revealed that students at the research site still showed hesitation in facing challenging tasks and had not fully utilized feedback as a tool for development. This reinforces the idea that although growth mindset principles have been introduced in the learning process, their impact on learning motivation has not been significantly reflected among all students.

Kwak et al. (2022) add that growth mindset can improve academic outcomes when implemented in a supportive learning environment in which teachers provide constructive feedback and emphasize the learning process rather than outcomes. However, observations showed that not all teachers actively applied this approach, thus limiting its influence on students' learning motivation.

From the perspective of motivation theory, there are three main aspects that serve as indicators: initiating, directing, and sustaining. In relation to growth mindset, these three aspects are mutually reinforcing. In the aspect of initiating, students with a growth mindset tend to believe that their abilities can develop through effort, making them more motivated to start learning activities without external pressure. However, field observations indicated that students' initial enthusiasm for participating in learning activities remains moderate. Some students showed initiative to be active learners, while others appeared passive and waited for teacher direction.

In the directing aspect, a growth mindset helps students determine learning goals oriented toward mastery rather than grades alone. Students with a growth mindset are more open to trying new learning strategies and more confident in directing their learning process. However, findings show that many students still depend heavily on teacher instructions and are not yet fully capable of independently directing their learning. This indicates that the internalization of growth mindset in this aspect remains limited and requires pedagogical approaches that encourage greater learning autonomy.

In terms of sustaining, a growth mindset plays a crucial role in maintaining learning consistency, especially when facing difficulties or failure. Students with a growth mindset do not easily give up and view setbacks as opportunities for growth. Nevertheless, classroom observations showed that many students experienced a decline in learning motivation when facing obstacles such as difficult tasks or uninteresting materials. This suggests that the

sustaining aspect of learning motivation still needs improvement through continuous reinforcement of growth mindset, both through teacher approaches and a supportive learning environment.

Thus, although theory suggests that a growth mindset can significantly enhance learning motivation, field observations indicate that students' motivation is still at a moderate level. This indicates that the implementation of growth mindset still requires improvement through strengthening the roles of teachers and parents and through learning approaches that emphasize process, effort, and development rather than solely focusing on outcomes.

#### **The Influence of Grit on Growth Mindset**

Based on the analysis results, the regression coefficient (t-count) of the Grit variable is 2.803, with a t-table value of 1.651. The significance value of Grit on the related variable, namely students' Growth Mindset, is 0.001, which is smaller than the alpha value of 0.05. Thus, since  $t\text{-count} > t\text{-table}$  and  $\text{significance } 0.001 < 0.05$ , it can be concluded that the Grit variable has a significant effect on students' Growth Mindset, and the second hypothesis is accepted.

According to Hwang and Lee (2020), growth mindset contributes significantly to increasing grit or perseverance in individuals. A growth-oriented mindset enables individuals to focus more on effort and perseverance, which are core elements of grit. Individuals with a growth mindset view abilities not as fixed traits but as potentials that can be developed through hard work and perseverance. Thus, the relationship between growth mindset and grit is positive: the higher the growth mindset, the higher the level of grit.

Furthermore, growth mindset also functions as a mediator, bridging factors such as positive self-image with psychological outcomes such as successful aging or academic achievement. This demonstrates that growth mindset not only provides direct effects but also strengthens relationships between external variables and perseverance. In academic contexts, students who believe they can develop through learning are more likely to endure challenges and continue striving to achieve their goals. Thus, grit becomes an important element supporting academic adaptation, while growth mindset serves as the psychological foundation that strengthens perseverance.

According to Wood-Mygrant (2019), growth mindset is the belief that intelligence and abilities can continually be developed through dedication and learning. Individuals with this mindset do not easily give up when facing obstacles but instead see them as opportunities for growth. This directly influences the development of grit, as students become more motivated, persistent, and capable of maintaining learning enthusiasm even during difficulties. Grit enables students to continue the learning process despite delayed results, while growth mindset sustains the belief that improvement will be achieved through continuous effort.

On the other hand, Keesey et al. (2018) argue that grit can also strengthen the development of a growth mindset. In educational contexts, both concepts complement each other and are essential for enhancing academic success and learning resilience among students and teachers. Students with a growth mindset are more likely to develop grit because they perceive challenges as natural components of the learning process. Teachers who possess both qualities also play an important role in creating a supportive learning environment. Such an environment encourages students not only to work hard but also to remain consistent when facing challenges.

Field observations showed that students' grit levels are generally categorized as moderate based on five key indicators. In terms of Passion, some students demonstrate inconsistent interest in certain subjects, which changes based on mood or external factors. This indicates a lack of long-term interest, a key characteristic of grit. Regarding Persistence, some students give up easily when facing difficulties instead of seeking solutions, suggesting that grit is not yet optimal.

In the aspect of Goal Focus, many students participate in learning merely as an obligation, without clear short-term or long-term goals. This reflects limited long-term orientation. In the aspect of Overcoming Obstacles, students often avoid challenges or procrastinate instead of confronting them. Finally, in terms of Discipline, inconsistencies in managing time and completing tasks on schedule indicate that grit remains underdeveloped.

Growth mindset plays a key role in addressing these components because it supports the belief that sustained effort leads to progress. Thus, strengthening growth mindset becomes essential for developing grit.

### **The Influence of Learning Motivation and Grit on Students' Growth Mindset**

Based on the results of the F-test, the calculated F-value is 46.675, while the F-table value is 3.041, with a significance value of  $0.000 < 0.050$ . Therefore, since  $F_{\text{count}} > F_{\text{table}}$  and significance  $0.000 < 0.050$ , it can be concluded that the variables Learning Motivation and Grit have a significant effect on students' Growth Mindset.

Field observations and collected data indicate that students' learning motivation is moderate. Students have not fully demonstrated strong intrinsic motivation for independent and continuous learning. Many still study out of obligation rather than genuine interest. Likewise, students' grit levels are also moderate, as shown by their tendency to lose focus easily and lack consistency in completing tasks. These conditions contribute to the less-than-optimal development of students' growth mindset, with many still exhibiting fixed mindset tendencies, such as believing that their abilities are predetermined and cannot improve.

These findings are consistent with Hwang & Lee (2020), who state that growth mindset contributes to increasing grit. Individuals who believe that intelligence can develop tend to persist in challenges and stay focused on long-term goals. Dweck (2016) also emphasizes that learning motivation is strongly linked to mindset. Students with a growth mindset tend to possess higher intrinsic motivation because they perceive learning as an opportunity for growth.

Observations further indicate that students are still transitioning from extrinsically motivated learners to intrinsically motivated learners. They often study only before exams or complete tasks due to fear of punishment. Aspects of motivation such as initiating, directing, and sustaining are still developing. Without sufficient motivation, students show limited enthusiasm in trying new strategies and tend to give up easily.

Regarding grit, aspects such as passion, persistence, goal orientation, overcoming obstacles, and discipline also scored moderately. Students often lack sustainable interest, easily give up, and struggle with discipline and time management.

Duckworth et al. (2007) highlight that grit is crucial for long-term success. When grit is supported by a growth mindset, students become more adaptive, willing to learn from mistakes, and capable of developing effective learning strategies.

Thus, theoretical analysis, observations, and previous research confirm that learning motivation and grit significantly influence the development of students' growth mindset. Learning motivation provides the initial drive and direction, while grit sustains perseverance throughout the learning process. Together, these variables support students in developing a mindset that promotes long-term personal and academic growth.

## **CONCLUSION**

Based on the results of the multiple regression analysis, it can be concluded that the regression coefficient value of the Learning Motivation variable (t-calculated) is 2.458, with a t-table value of 1.651. The significance value of

Learning Motivation toward the related variable, namely Growth Mindset, is 0.000, which is smaller than the alpha value of 0.05. Thus, since  $t\text{-calculated} > t\text{-table}$  and the significance value  $0.000 < 0.05$ , it indicates that the Learning Motivation variable has a significant effect on students' Growth Mindset, meaning that the first hypothesis is accepted.

Meanwhile, the regression coefficient value of the Grit variable ( $t\text{-calculated}$ ) is 2.803 with a  $t\text{-table}$  value of 1.651. The significance value of Grit toward Growth Mindset is 0.001, which is also smaller than the alpha value of 0.05. Therefore, since  $t\text{-calculated} > t\text{-table}$  and  $0.001 < 0.05$ , it can be interpreted that the Grit variable has a significant effect on students' Growth Mindset, indicating that the second hypothesis is accepted.

Furthermore, based on the F-test results, the F-calculated value is 46.675 and the F-table value is 3.041, with a significance value of  $0.000 < 0.050$ . Therefore, since  $F\text{-calculated} > F\text{-table}$  and the significance value is below 0.050, it can be concluded that Learning Motivation and Grit simultaneously have a significant effect on students' Growth Mindset.

The results of the determination coefficient ( $R^2$ ) analysis show that there is a significant positive effect of Learning Motivation and Grit on Growth Mindset, with an  $R^2$  value of 0.316 and  $p = 0.000 < 0.050$ . This indicates that Learning Motivation and Grit contribute 31.6% to the variation in students' Growth Mindset. In other words, the more positive the Learning Motivation and Grit, the higher the Growth Mindset of students at SMA Negeri Siantan Selatan.

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