

The Relationship between Mindset and Grit in Students

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Abstract. Problems and challenges that are often experienced during the lecture process make students vulnerable to experiencing stressful conditions and even loss of motivation in undergoing lectures. Students' grit is related to overcoming problems, difficulties, and challenges in study. Grit is a long-term passion and perseverance that helps individuals to stick to their commitments. This research aims to determine the relationship between growth and fixed mindsets with grit in Nusa Cendana University students. The subjects of this research were 268 active students at Nusa Cendana University. The result showed that 90,3% of students with a high growth mindset had high grit, and 84,7% had a low fixed mindset. Product-Moment correlation test results showed that a growth mindset was positively related to grit ($r = 0,540$), and a fixed mindset was negatively related to grit ($r = -0,477$). A higher growth mindset is associated with higher grit, and a lower fixed mindset is associated with higher grit.

Keywords: *mindset; grit; college student*

Abstrak. Hambatan yang sering dialami selama proses perkuliahan membuat mahasiswa rentan mengalami kondisi stress bahkan hilangnya motivasi dalam menjalani perkuliahan. Bagaimana mahasiswa mengatasi persoalan, kesulitan, serta tantangan dalam belajar berkaitan dengan *grit* yang dimiliki. *Grit* merupakan gairah dan ketekunan dalam jangka waktu panjang yang membantu individu untuk tetap berpegang pada komitmen mereka. Penelitian ini merupakan penelitian yang dilakukan untuk mengetahui hubungan antara *growth mindset* dan *fixed mindset* dengan *grit* pada mahasiswa di Universitas Nusa Cendana. Jenis penelitian ini adalah penelitian kuantitatif korelasional. Jumlah partisipan di dalam penelitian ini adalah 268 mahasiswa aktif di Universitas Nusa Cendana. Hasil penelitian menunjukkan 90,3% mahasiswa dengan *growth mindset* yang tinggi memiliki *grit* yang tinggi, dan 84,7% mahasiswa dengan *fixed mindset* yang rendah memiliki *grit* yang tinggi. Hasil uji korelasi *Product Moment* menunjukkan bahwa *growth mindset* berhubungan positif dengan *grit* ($r = 0,540$) dan *fixed mindset* berhubungan negatif dengan *grit* ($r = -0,477$). *Growth mindset* yang semakin tinggi dikaitkan dengan *grit* yang semakin tinggi, dan *fixed mindset* yang semakin rendah dikaitkan dengan *grit* yang semakin tinggi.

Kata kunci: *mindset; grit; mahasiswa*

Article history:

Received 4 October 2023

Received in revised form 27 March 2024

Accepted 29 June 2024

Available online 30 June 2024

Introduction

Individuals have obligations that must be fulfilled as students. Every student wants the best results and tries their best during the lecture process. However, the process often makes students vulnerable to stress and even loss of motivation in undergoing lectures. Students who tend to delay completing their assignments can have a negative impact, such as completing lectures (Akerina & Wibowo, 2022).

According to Duckworth (2007), how students cope with difficulties and challenges during the lecture is related to their grit. Grit is a combination of perseverance and passion to achieve long-term goals. Grit requires hard work to face challenges, and effort and interest must be maintained over the years despite failures and difficulties in the process.

High level of grit will help students get through every college process. If students can become “gritty” individuals, they tend to be consistent with their initial goals and never give up on achieving them. Duckworth (2016) suggests that differences in individual mindsets are related to whether or not they can develop their grit. Research conducted by Dweck (Rhew et al., 2018) revealed that mindset was found to be a factor that caused some individuals to remain comfortable learning even though they were given challenging tasks, while other individuals felt anxious and did not like being given tasks that were considered challenging.

Research conducted by Izzah et al. (2021) regarding an overview of grit in college students shows that both individuals have defined their goals from the beginning and will continue to strive despite the challenges in achieving their goals. Each individual has their way of accomplishing their obligations, but both have

similarities in showing consistency and perseverance in achieving their goals. Research conducted by Hariadi et al. (2022) found a positive and significant relationship between growth mindset and grit in working students. Research conducted by Setiawan (2021) regarding the effect of a growth mindset on grit in fresh graduates found that there is a positive effect of a growth mindset on grit in fresh graduates, which means a fresh graduate needs a positive mindset and grit so they can face failure, survive in the work environment and be able to learn new things.

MacIntyre (2016) revealed that individuals who have faced failure have more fear when facing new challenges and are hesitant to get up again. Hochanadel & Finamore (2015) also revealed that students with a growth mindset perceive that someone's success is not determined only by their intelligence, and the level of intelligence can change. Thus, a growth mindset will allow individuals to overcome obstacles and challenges in the long term.

The results of a random pre-research on 30 students at Nusa Cendana University, the data taken with Google form, showed that students tend to be pessimistic and give up easily when facing difficulties during the lecture process. They cannot manage time well, have difficulty understanding course material, and complete assignments according to the specified deadline.

Based on the results of the pre-research, students need to overcome difficulties and challenges to achieve their goals. If students can become gritty individuals, they tend to be consistent and do not give up easily to achieve the goals that have been set. This plays an essential role in helping students face the difficulties they experience during the lecture process. How students can have high grit can be influenced by many factors, including their mindset. Therefore, researchers are interested in "The Relationship between Mindset and Grit in Students at Nusa Cendana University".

Method

The type of research used in this study is quantitative research. Quantitative research is a method based on the philosophy of positivism, used to research specific populations or samples. This study's population consisted of active Nusa Cendana University students, totalling 27,495 students. The sample size in this study was determined using the table by Isaac and Michael. From the table for determining the sample size, the sample in this study amounted to 268 students of Nusa Cendana University.

The data collection technique uses the scale method, an ordinal scale containing favourable and unfavourable items. In this scale, the subject will be asked to provide answers from the five answer options: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree.

The scale used to measure mindset variables is the Mindset Scale, which consists of two aspects: Growth Mindset and Fixed Mindset. The Mindset Scale has been adapted to Indonesian by Sembiring (2017) and consists of 30 items. The corrected item-total correlation value of the growth mindset aspect ranges from 0,393 – 0,822, and the corrected item-total correlation value of fixed mindset aspect ranges from 0,392 – 0,843, so 30 items qualify for the validity test. The reliability test using Cronbach Alpha on the mindset scale obtained a value of 0,905 for the growth mindset aspect and 0,917 for the fixed mindset aspect. Hence, the mindset scale fulfils the reliability test requirements.

The scale used to measure the grit variable is the Grit Scale, which consists of two aspects: consistency of interest and perseverance of effort. The Grit Scale was adapted to Indonesian by Nahamani, Priyatama, and Fitriani (2022) and consists of 19 items. The corrected item-total correlation value of the grit scale ranges from 0,304 – 0,734, so 19 items qualify for the validity test. The reliability test using Cronbach Alpha on the grit scale obtained a value of 0,876, so the grit scale fulfils the reliability test requirements.

Result

Description of participants based on gender and faculty can be seen in the table below:

Table 1.

Gender of Participants

Gender	Amount	
	n	%
Female	201	75%
Male	67	25%

Table 2.

Distribution of Participants for Each Faculty

No.	Faculty	Population	Sample
1	Faculty of Teacher Training and Education	7794	76
2	Faculty of Animal Science, Marine Science and Fisheries	2801	27
3	Faculty of Social and Political Science	4017	39
4	Faculty of Law	2245	22
5	Faculty of Agriculture	2056	20
6	Faculty of Science and Engineering	3739	36
7	Faculty of Public Health	2130	20
8	Faculty of Economics and Business	1882	18
9	Faculty of Medicine and Veterinary Medicine	831	10
Amount		27495	268

The research's results showed that 264 participants were in the high category of growth mindset variable, and 4 participants were in the low category of growth mindset variable. Meanwhile, in the fixed mindset variable, 24 participants were in the high category, and 244 were in the low category. In the grit variable, 242 participants were in the high category, and 26 were in the low category.

Table 3.

Cross Tabulation of Growth Mindset and Grit

		Grit		Amount
		Low	High	
Growth mindset	Low	4 (1,5%)	-	4 (1,5%)
	High	22 (8,2%)	242 (90,3%)	264 (98,5%)
Amount		26 (9,7%)	242 (90,3%)	268 (100%)

Table 3 shows the cross-tabulation of growth mindset and grit variables. Based on the table, 90,3% of participants in this study with a high growth mindset had high grit.

Table 4.

Cross Tabulation of Fixed Mindset and Grit

		Grit		Amount
		Low	High	
Fixed mindset	Low	17 (6,3%)	227 (84,7%)	244 (91%)
	High	9 (3,4%)	15 (5,6%)	24 (9%)
Amount		26 (9,7%)	242 (90,3%)	268 (100%)

Table 4 shows the cross-tabulation of fixed mindset and grit variables. Based on the table, 84,7% of participants in this study with low fixed mindset had high grit.

The normality test in this research uses Kolmogorov-Smirnov statistical analysis, with the condition that the data is normal if the significant value of the variable > 0,05. Based on the normality test result, the significant value is 0,594, which shows that the significant value is higher than the significant level (0,05), so it can be said that the data is normally distributed.

The linearity test determines whether the two variables have a significant linear relationship. The linearity test uses the SPSS program with the provision that if the significance value of Deviation from Linearity > 0,05, there is a linear

relationship between the independent and dependent variables. Conversely, if the significance value of Deviation from Linearity $< 0,05$, then there is no linear relationship between the independent and dependent variables.

Table 5.

Linearity test result

Variable	Linearity	Sig. Deviation from Linearity
Grit*Growth Mindset	0,000	0,813
Grit*Fixed Mindset	0,000	0,194

Based on the table above, it is known that the Linearity significance value is 0,000, and the Deviation from the Linearity significance value of growth mindset and grit is 0,813. The Deviation from the Linearity significance value of fixed mindset and grit is 0,194, which is higher than the significance level (0,05), so it can be concluded that growth mindset and fixed mindset variables with the grit variable have a significant linear relationship.

Testing the hypothesis of this study, researchers used Pearson Product Moment in the SPSS program. Pearson Product Moment is used to analyze whether the independent and dependent variables have a relationship.

Table 6.

Hypothesis test result

	Growth Mindset	Fixed Mindset	Grit
Growth Mindset	1	-0.217**	0.540**
Fixed Mindset	-0.217**	1	-0.477**
Grit	0.540**	-0.477**	1

The result of the Pearson Product Moment test showed the Sig. (2-tailed) of growth mindset and grit is 0,000 $< 0,05$, which means a significant relationship exists between growth mindset and grit. The result also showed the Sig. (2-tailed) of a

fixed mindset and grit is $0,000 < 0,05$, which means a significant relationship exists between fixed mindset and grit.

The test result showed the Pearson correlation value of growth mindset and grit is 0,540, which means that the level of relationship between variables is in the strong enough category, and the direction of the relationship is positive. Meanwhile, the Pearson correlation value of fixed mindset and grit is -0,477, which means there is a relationship between variables, but the direction of the relationship is negative. So it can be concluded that a higher growth mindset is associated with higher grit, and a higher fixed mindset is associated with lower grit.

Discussion

The results of the correlation test using Pearson Product Moment between growth mindset and grit is 0,540 and Sig (2-tailed) is $0,000 < 0,05$, which means that there is a significant positive relationship between growth mindset and grit in students at Nusa Cendana University. The direction of the relationship is positive because the Pearson correlation value is positive. Meanwhile, the Pearson correlation value of fixed mindset and grit is -0,477 and Sig. (2-tailed) is $0,000 < 0,05$, which means that there is a significant relationship between the fixed mindset and grit in Nusa Cendana University students, but the relationship's direction is negative because the Pearson correlation value is negative. So, it can be concluded that a higher growth mindset is related to a higher grit, and a higher fixed mindset is related to lower grit.

These are two mindsets, namely, growth mindset and fixed mindset. Individuals with a growth mindset believe that intelligence and talent can be developed, effort and hard work contribute to success, they can face challenges and difficulties, and input from others is essential to improve themselves. Meanwhile, individuals with fixed mindsets believe their potential and intelligence cannot be changed. They doubt they can improve their potential by trying, rejecting challenges, and not accepting input from others. An individual's mindset can

influence their learning, motivation to learn, and every aspect of their lives (Bernecker & Job, 2019). Mindset can control reactions, such as giving up, experiencing stress, or panicking in the face of the problems and difficulties they experience. Mindset may be related to individual reactions such as giving up and not overcoming difficulties. Because mindset is related to coping with difficulties, resisting obstacles, striving, and always doing better (Dweck, 2017). Dweck in Rhew et al. (2018) also revealed that mindset is a factor that causes individuals to remain comfortable learning even when given complex or challenging tasks, while others feel anxious and dislike being given tasks that are difficult for them.

The research's results showed that a growth mindset is positively associated with grit, and the cross-tabulation of growth mindset and grit variables showed that 90,3% of students with a high growth mindset have high grit. Individuals with a growth mindset have higher grit than those with a fixed mindset because they believe determination and hard work help them to develop their abilities. Those with high grit are willing to work hard and persevere through challenges and difficulties. They are also consistent in their efforts to achieve goals. Their consistency is seen in their interests and goals, which are not easily changed. Grit refers to the individual's attitude and personality traits against obstacles. When they encounter obstacles, individuals with high grit understand their obstacles correctly through introspection, perceive them as changeable or controllable situations, believe that they will succeed, and face obstacles without bad feelings (Bai et al., 2020).

The research's results showed that a fixed mindset is negatively associated with grit, and the cross-tabulation of a fixed mindset and grit variables showed that 84,7% of students with a low fixed mindset have high grit. Individuals with a fixed mindset feel anxious and dislike being given tasks that are difficult for them. It was revealed by MacIntyre (2016) that individuals who have faced failure have more fear when facing new challenges and continue to feel hesitant to get up again.

However, if individuals have a growth mindset, they will be able to rise again even though they have faced previous failures and overcome the fear caused by the failures that they have experienced (Anderson et al., 2020).

The results of this study align with research by Barbaros (2023) on students at Konya, Turki, which states that there is a positive relationship between a growth mindset with consistency of interest and perseverance of effort. Students reaching their goals with a sense of resilience and creating change in some situations in this process may contribute to their positive beliefs about development. This belief can positively affect their belief that they can improve their abilities and intelligence. Research by Pyo (2023) states that a growth mindset is essential in developing adolescent grit levels. The belief in the malleability of individual attributes would determine their subsequent behaviours (Dweck, 2017). This is because when people believe they can improve their abilities through their efforts, it could encourage them to sustain their passion despite difficulties (Park et al., 2020).

This study's results align with research by Maiga (2023), which states that there is a significant positive relationship between mindset and grit in STIE (YAPPAS). This means that if students have a growth mindset, their grit will be higher. The results of this study are also supported by research conducted by Sembiring (2017) on students of the Psychology Faculty at the University of "X" Bandung, which states that growth mindset and grit are positively and significantly correlated. This means that the perseverance and enthusiasm of Psychology students at the University of "X" Bandung are influenced by whether they believe their abilities can change with certain efforts or that their abilities are fixed and unchanging.

The result showed that the Pearson correlation value of growth mindset and grit is 0,540, which means the level of relationship between variables is in the strong enough category. So it can be said that grit can also be influenced by factors besides mindset. Previous research has investigated other factors that can affect grit.

Howard et al. (2019) report that higher grit is promoted by acceptance or involvement in parenting behaviours (consistent with high warmth) and moderate, but not excessive, psychological and behavioural control levels. Datu (2017) reported that a sense of relatedness to distinct social partners (except for peer relatedness) was positively associated with grit. The study results indicate that positive relationships with teachers and parents may be linked to higher perseverance and passion for long-term goals.

Hill et al. (2016) state that grittier individuals tended to report higher purpose commitment and positive affect levels. Committing to a purpose in life may encourage individuals to develop those characteristics that help them achieve their long-term aims, such as a gritty disposition. A study by Armstrong et al. (2018) revealed that participants showed a strong understanding of their current strengths and weaknesses (present-self) in addition to focusing on their future goals (future-self). More future-oriented individuals may be able to restrain themselves from impulsive decisions better. They may negatively impact important long-term goals as they clearly connect the present and future. Li et al. (2018) explored the association between the belief in free will and perseverance for long-term goals among adolescents. Free will believers had a higher perseverance than determinism believers. A stronger belief in free will is associated with more adolescent perseverance for long-term goals.

From some of these previous studies, it can be known that besides mindset, grit can also be influenced by other factors, such as parenting behaviours, sense of relatedness, purpose commitment and positive affect, free will, and self-regulation.

Conclusion

Based on the research's results, it can be concluded that a positive significant relationship exists between growth mindset and grit in students at Nusa Cendana

University, which means a higher growth mindset is associated with higher grit. Fixed mindset also has a significant relationship with grit, but the direction of the relationship is negative, which means a lower fixed mindset is associated with higher grit. The growth mindset and grit of students at Nusa Cendana University are primarily in the high category. The fixed mindset in students at Nusa Cendana University is mainly in the low category.

Suggestion

From the results of this study, Nusa Cendana University students are expected to have a high commitment to future goals and the desire to move forward despite facing challenges in the lecture process. Lectures and teachers from the results of this study, lecturers and teachers are expected to present training related to improving passion or self-potential, perseverance, and positive thinking so that students can optimize their potential and commit to achieving their future goals. Future research is expected to be conducted by adding variables such as parenting, sense of relatedness, free will, self-regulation strategies and other variables besides mindset that can be related to grit.

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