

Cultivating Grit in Higher Education: Exploring the Influence of Growth Mindset among University Students

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Keywords

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academic grit, perversion,
passion

Abstract

A good quality of life, one of which is judged by success. This usually starts from taking education. Various challenges and obstacles faced while studying. One of the psychological variables that play a role in dealing with it is academic grit. Individuals who are consistent with their interests and diligently try are predicted to achieve success more easily. Students who are active in organizations are faced with more diverse academic challenges than those who focus solely on academics. Academic grit in student organizations is being questioned. One of the influencing factors is the growth mindset. The subjects of this study were students who were active in organizations. The sampling technique used is cluster random sampling. The research method uses correlational quantitative. Data obtained through the grit scale and growth mindset. The results of the study show that the growth mindset has an influence on the academic grit of students who join organizations. Further research also examines the amount of growth mindset's effective contribution to academic grit as well as some suggestions for future researchers.

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INTRODUCTION

Success is necessary for individuals to achieve a good quality of life. Success can be achieved by being consistent with interests and diligently trying to achieve goals (Duckworth, Peterson, Matthews, & Kelly, 2007). Working hard, diligently and striving to achieve long-term goals, maintaining interest is proven to be a successful person (Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014; Dweck, 2006). Consistency of interest and persistence in trying to achieve long-term goals is defined as grit (Duckworth, Peterson, Matthews, & Kelly, 2007; Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014; Duckworth & Quinn, 2009).

Individuals who have high grit (gritty) will set goals and pursue these targets despite experiencing various challenges and failures. Gritty individuals are also willing to put in greater effort and attention to achieve the goals they have set (Silvia et al., 2013; Kalia et al., 2019). Nevertheless, the results of research by Izzach (2017) show that 86.3% of students have a low grit degree and 13.7% of students have a high grit.

The results of research by Caesari, Listiara & Ariati (2013) show that low grit has an impact on the academic performance of organizational students. Students prefer to complete organizational assignments rather than academic assignments, prefer to complete assignments at the end of time and always copy friends' assignments. The intensity of student attendance is also very low, they often ask friends to fill in the attendance list.

The form of organizational student academic grit that the research obtained through a preliminary study showed that some of the academic grit was classified as low. As many as 66.7% of the 20 students did not spare time to do assignments, 63.3% of the 19 students did their coursework at random, 60% of the 18 students gave up doing difficult assignments, 76.7% of the 23 students chose majors that not according to their interests, 76.7% of the 23 students did not study because they were busy with the organization, 66.7% of the 20 students focused on lectures easily split due to busy organizations, 70% of the 21 students neglected group assignments because they were busy with the organization.

Preliminary research was also conducted on 10 other students using FGD techniques, showing that 10 students preferred organizational activities to learning in class, skipped class for organizational activities or other activities, prioritizing organizational tasks over academic assignments. Next, postpone and do academic assignments at the end of the collection time, often delegate or copy friends' assignments. In fact, 7 out of 10 students stated that they had experienced a decrease in their grade point average (GPA) and accepted and resigned to the results obtained. The problems experienced by the 10 students above showed an interest and persistence that was less consistent in completing their obligations as students. Based on the preliminary study through questionnaires and FGD techniques, it was shown that students who organize have less consistent interest and persistence indicating low grit according to Duckworth, et al. (2007).

Individuals who have high grit (gritty) will set academic achievement as a goal and pursue this target despite experiencing various challenges and failures. Gritty individuals are also willing to put in greater effort and attention to achieve the goals they have set (Silvia et al., 2013; Kalia et al., 2019).

The results of the study show that grit has a positive correlation with student academic achievement (Amalia & Irna, 2018). Research Duckworth et al. (2007) demonstrated a positive relationship between grit and academic success, retention of cadets in rigorous military training programs, and student rankings in national spelling competitions. Grit also has an important effect on student achievement levels, student engagement, retention and graduation probability (Duckworth & Quinn, 2009; Maddi et al., 2012; Strayhorn, 2014).

Research Strayhorn (2013) positive predictor of test scores of white students at African-American universities is grit. Gritty Chicago high school students graduate on time (Duckworth &

Eskreis-Winkler, 2014). Grit predicts goal completion despite obstacles and failures (Duckworth & Eskreis-Winkler, 2014). Gritty cadets successfully complete West Point's arduous military training program (Duckworth et al., 2007; Duckworth & Quinn, 2009).

Grit uses the intensity theory of motivation (Silvia, 2013). In the aspect of grit, effort is a function of two factors in the theory of motivational intensity, namely the importance of success, indicating how much effort one wants to expend and the difficulty in achieving goals, indicating one's actual efforts (Brehm & Self, 1989; Silvia, 2013). In the intensity theory of motivation, a personality trait such as grit can affect efforts to make goals important or not and appear more difficult or not (Brehm & Self, 1989; Silvia, 2013).

The results of the preliminary study showed that 66.7% of the 20 students did not take their free time to do assignments, 63.3% of the 19 students did their coursework at random, 60% of the 18 students gave up doing difficult assignments. This shows that organizational students do not have confidence that abilities can be developed, students are also not sure that more effort will give success to their academic achievements, indicating that students have a fixed mindset (Dweck, 2006).

Factors that influence academic grit in individuals are education, age, thoroughness, achievement, (Duckworth et al., 2007), growth mindset (SRI International, 2018), effortful control (Duckworth, 2014). Students with a growth mindset believe that to get optimal results it takes hard work (Dweck, 2006). They make mistakes as learning and try to fix them (Dweck, 2006).

Internal circumstances such as needs, potential outcomes, probabilities are determining factors for the amount of motivation (Brehm & Self, 1989). The greater the student's need to achieve academic goals, the greater the motivation to improve academic achievement. High motivational arousal raises a person's total effort to achieve a goal, and the effort is spread over time until it achieves the desired result (Brehm & Self, 1989). Then the academic grit will be high.

The growth mindset developed by Dweck is defined as a mindset that believes Growth mindset is a mindset that believes that a person's potential and psychological attributes can develop through practice and more effort in facing increasingly difficult challenges (Dweck, 2006). Someone with a growth mindset believes that failure can be corrected and lessons learned for the future.

Meanwhile, the fixed mindset believes that the potential is innate and cannot be changed (Nutt, 2015). They prefer tasks that are easy to complete so that their abilities are not bad. When they experience failure, they don't try to finish it because they think it is the limit of their abilities (Dweck, 2006).

The results of research by Blackwell et al. (2007) & Good et al. (2003) students' mindsets affect learning values. The growth mindset can significantly increase student achievement scores and test scores. Having a growth mindset helps high achieving students despite facing stereotypes about their abilities (Blackwell et al., 2007; Good et al., 2003; Aronson, Fried, & Good, 2002). Duckworth et al. (2007) & Hochanadel & Finamore (2015) growth mindset has an effect on increasing one's grit.

Several previous studies revealed that one of the factors that influence grit is the growth mindset. Several studies related to growth mindset and grit have been carried out abroad, but there are not many references related to the effect of growth mindset on academic grit in Indonesia. Then it becomes the writer's interest to examine how high the influence of the growth mindset is on academic grit. A differentiator from other studies in this study uses a population of students who participate in organizations. Organizational students are considered to have more interest in the organization they participate in and have a busy schedule compared to students who do not join organizations. Where the busyness of the organization can be an obstacle in academic activities.

METHODS

This study aims to determine the relationship between growth mindset and academic grit in students who join organizations. In this study, there are two variables used, namely, the independent variable (X): Growth Mindset and the dependent variable (Y): Academic Grit. Academic grit is a personality trait that is characterized by individuals who maintain an interest in learning for years, work hard despite experiencing obstacles in the process in order to achieve long-term goals in the field of education. In this case, it will be measured based on aspects of persistence in trying and consistency of interest. Growth mindset is a mindset that believes that a person's potential and psychological attributes can develop through practice and more effort in facing increasingly difficult challenges. In this case it will be measured based on the aspects of intelligence belief, talent, character can be developed, belief that effort and hard work contribute to success, belief in criticism and suggestions from others, feedback on success, belief that failure, difficulties and obstacles are important for self-development.

The population of Semarang State University student subjects who participated in the organization through a research survey was reported to be 4500 students. Azwar (2018) stated that the number of samples was taken 10% of the total research population. Meanwhile, according to Sekaran (1992, in Azwar, 2018) in the sample size table for various populations, if the total population is 4500 subjects, then the ideal number of samples taken is 354 subjects. So, this study uses sample size tables for various populations according to Sekaran with a total of 354 subjects. In this study, the population was known to consist of 8 faculties, where each faculty was a group or cluster for determining the sample. Random selection in the first stage to determine individual groups was carried out by drawing lots three times. After the faculty group was selected as the research sample, the subject was determined to represent the population who are members of the organization. The selection of the second stage was carried out by randomization to determine the organization that would represent a total of 354 subjects. Then two organizations were selected in each faculty to be representative of the sampling, each organization taking a total of 59 students. This number will be used as a representative of the research population to be generalized. Then two organizations were selected in each faculty to be representative of the sampling, each organization taking a total of 59 students. This number will be used as a representative of the research population to be generalized. Then two organizations were selected in each faculty to be representative of the sampling, each organization taking a total of 59 students. This number will be used as a representative of the research population to be generalized. The psychological scale used to measure the dependent variable is the academic grit scale which is compiled based on the aspects of consistency of interest and persistence in trying according to the grit theory put forward by Duckworth, et al., (2007). This scale contains 38 statements that are favorable and unfavourable. Meanwhile, the psychological scale for measuring the growth mindset is compiled based on four aspects, namely intelligence belief, talent, character can be developed, belief in effort and hard work contributes to success, belief in criticism and suggestions from others, feedback on success, belief in failure, difficulties and important obstacles to development. themselves according to the mindset theory put forward by Dweck, et al., (2006). In this growth mindset measurement scale, there are 29 items which are divided into two types, namely favorable and unfavourable items. Data analysis used one predictor regression analysis which was carried out using data processing software.

RESULT AND DISCUSSION

The results of the hypothesis test stated that academic grit was influenced by a person's growth mindset and was declared accepted. It means "there is an influence of growth mindset on academic grit". The independent variable, growth mindset influences the dependent variable, academic grit. Individuals who have the belief that talent, intelligence, character can develop, challenges and obstacles are good for self-development, success can be achieved with effort and hard work, criticism and suggestions are good for success means they can be assumed to have high academic grit. They are individuals who are consistent in their interests and diligent in trying in the field of education. Hypothesis testing is carried out using a data processing program by looking at the significance level value, the following results are obtained:

Table 1. Hypothesis Test Results
ANOVA

Model	Sum of Squares	Df	MeanSquare	F	Sig.
1 Regression	11411,315	1	11411,315	80,170	,000a
residual	50103,106	352	142,338		
Total	61514,421	353			

a. Predictors: (Constant), Growth Mindset

b. Dependent Variable: Academic Grit

Based on the results of the hypothesis test, the calculated F is 80.170 with a significance level of 0.00. Significance level $< \alpha$, $0.01 = 0.00 < 0.01$ then H_a is accepted and H_0 is rejected. It can be concluded that there is a significant influence between growth mindset (variable x or independent) on academic grit (variable y or dependent).

Students who have the belief that failure is good for self-development, they believe that with effort and hard work can improve academic achievement and academic performance, more and more efforts will be made to complete academic obligations and consistent interest in lectures, academic grit students.

From the research findings that have been obtained, it can be seen that one of the factors that influence academic grit is the existence of a growth mindset that is owned by each individual. This is consistent with research by Duckworth et al., (2007) & SRI International (2018) which states that apart from education, age, thoroughness, achievement, effortful control and strategy, the growth mindset also influences one's grit level.

The statement regarding the existence of a growth mindset owned by individuals has an effect on increasing academic grit, according to the results of Hochanadel & Finamore's research (2015) that growth mindset can develop academic grit. Students change the thinking that the level of intelligence can be changed. Students will improve their abilities and skills, determined and motivated to try to develop themselves (Hochanadel & Finamore, 2015).

Research by Chrisantiana & Sembiring (2017) obtained results, growth mindset has an effect on increasing academic grit in Psychology students at X University with an effective contribution of 31.8%. Chrisantiana & Sembiring (2017) state that the perseverance and enthusiasm of Psychology students at "X" University is influenced by whether they have the belief that their abilities are something that can be changed with certain efforts.

Organizational students believe that studying seriously will increase their GPA scores, believe that when doing assignments optimally they will get good grades in courses, they also believe that their talent is something that can be developed with regular practice. In the same person they are focused on their academic goals, trying to really complete the task even though it is difficult, taking

the time to complete the task amidst the busyness of the organization, and they continue to work on group assignments even though they are busy with the organization.

This is in accordance with research by Duckwoth (2013) & Sternberg (2019) that gritty people and a growth mindset are people who have a high value of determination, have an unshakable belief in their ability to face and overcome problems. Believing that they will learn more and become stronger people in overcoming challenges, passionate about doing things, working hard, never giving up, and stable (Duckwoth, 2013; Sternberg, 2019). Kannagara (2018) also states that students who have high grit have significantly higher levels of resilience and mindset.

Fitzgerald's research (2016) also obtained the result that people with a growth mindset, wanting to create great and lasting talent can be done by practicing consistently and focusing on one goal, so that it triggers someone to be more diligent and consistent in their interests, making a person who gritty.

Duckwoth (2013) & Dweck (2006) stated that people with a growth mindset will maximize talent, regardless of the level of talent one has and are productive in doing something useful, namely a gritty person will result in achievement. Efforts to develop talent (growth mindset) and work hard, persevere in the long term to achieve goals (Grit) are proven to be successful people (Duckwoth, 2013; Dweck, 2006).

Another similar study by Sholihah (in Mayshita, 2023) on working students obtained the result that the growth mindset has a significant effect on academic grit with an effective contribution of 27.1%. Ryan (2015) in his research, stated that there was a significant positive relationship between grit and mindset in college students. Wahidah & Royanto (2021) also show that the growth mindset has a positive effect on the academic grit of high school students. This means that the higher the growth mindset possessed by high school students, the higher the academic grit that is in them.

The hypothesis of this study is that there is a positive influence between growth mindset and academic grit, meaning that the higher the growth mindset score, the higher the academic grit score and vice versa. In this study, the results showed that the growth mindset of organizational students was at a high level and the academic grit of organizational students was at a moderate level. The following is a descriptive summary of the condition of grit in the research respondents:

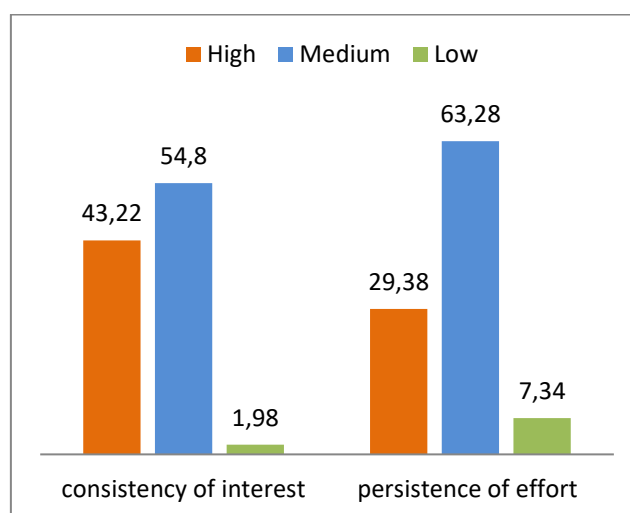


Figure 1. Descriptive Summary of Grit Conditions

Meanwhile, the descriptive summary for the growth mindset condition of the respondents is as follows:

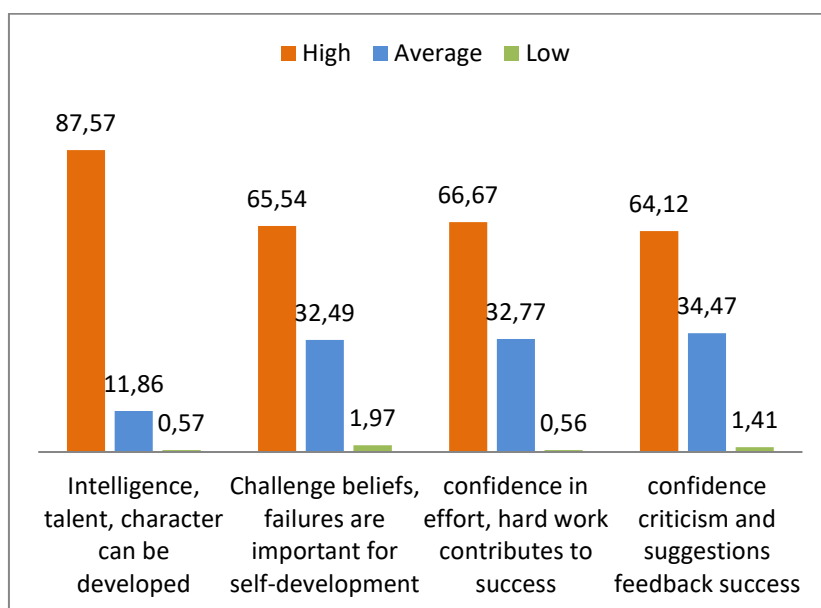


Figure 2. Descriptive Summary of Growth Minset Condition

Grit has two aspects, namely consistency of interest and persistence of effort (Duckworth, et al., 2007; Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014; Duckworth & Quinn, 2009). Both aspects of academic grit are in the medium category. The majority of respondents' answers are in the choice of answers between neutral and appropriate. Where the answer shows the condition that students are in a middle condition, feeling that they are between appropriate and inappropriate (Azwar, 2017).

The academic grit scale of organizational students has interests that suit them, but sometimes organizational activities make their interest diminish over time. Such as feeling that repeated failures make them think about moving to other majors, students are sometimes more interested in organizational activities than learning activities in class, they also try to do difficult college assignments, try to do college assignments to the fullest, try to do group assignments even though they are busy sacrificing time free, interrupted by organizational activities to complete tasks, however, sometimes they do tasks arbitrarily and delay collection of assignments because of busy organizations. This describes that the academic grit of organizational students is at a moderate level.

Duckworth et al (2007) stated that measuring grit is not easy. To reveal grit in depth, not only using a measuring scale, but other methods are needed (Duckworth et al., 2007). Scale is a measuring tool that is included in the explicit method. The explicit method is a measurement tool that directly measures the condition of the respondent (Hafiyah, Puri & Shadewi, 2011). Some of the weaknesses of the explicit method are that respondents do not necessarily understand their current situation (Nisbett & Wilson in Wardani & Analya, 2012). Respondents do not always give answers that are appropriate to themselves, they can change depending on the context and circumstances even though they include their identity. (Wittenbrink & Schwartz, 2007).

Then the measurement of grit requires an implicit method to get maximum results. The implicit method avoids the response of respondents who want to look good socially or want to fulfill what the researcher is looking for (Mocigemba, Klauer, Sherman & 2010). The implicit method is indirect measurement, the researcher measures the construct by observing and assessing the attitude of the

respondent without asking him to provide a report (Hafiyah, Puri & Shadewi, 2011). This method is another word for behavioral measure.

Organizational students have enough time-consuming activities because of the many organizational activities. Thus disrupting academic activities. This affects the academic performance and academic achievement of organizational students. Organizational students have a growth mindset where they believe that learning abilities can be developed, and mistakes as learning. They try and work hard to fix it, gritty people.

This is in accordance with the statement of Brehm & Self (1989) which states that internal conditions such as needs, potential outcomes, probabilities are determining factors for the amount of motivation (Brehm & Self, 1989). Challenges motivate people to think creatively (Dweck, 2006). The importance of a success will show a person's actual effort in achieving goals and how much effort is expended in difficulties (Brehm & Self, 1989; Silvia, 2013). In the intensity theory of motivation, a personality trait such as grit can affect efforts to make goals important or not and appear more difficult or not (Brehm & Self, 1989; Silvia, 2013).

The inferential calculation results in an effective contribution of the growth mindset variable to academic grit of 18.6%. There is 81.4% of academic grit in students who join organizations that are influenced by other factors. Calculation of the regression line equation aims to determine the number of predictive scores between the two independent and dependent variables. Also can know the significant value of the influence of independent and dependent variables. Calculation of the regression line equation as follows:

Table 2. Regression Line Equation
Coefficients^a

Model		Unstandardized Coefficients		Standardized	Q	Sig.
		B	std. Error	Coefficients		
				Betas		
1	(Constant)	19,586	5,475		3,578	,000
	Growth Mindset	,730	.082	,431	8,954	,000

a. Dependent Variable: Academic Grit

In column B constant a value of 19.586 was obtained and the score for the growth mindset variable in column B obtained a value of 0.730. So the calculation of the regression equation as follows:

$$Y = a + bX$$

$$= 19.586 + 0.730X$$

From the results of calculating the regression line equation it is stated that there is a positive correlation between growth mindset and academic grit of 0.730. The b value of 0.730 means that the academic grit variable will increase by 0.730 if the growth mindset increases by one value. The constant value will remain at 19.586 if there is no added value to the growth mindset.

It was concluded that there is an influence between the growth mindset on academic grit. Evidenced by a significance value $< \alpha$, 0.05 of 0.00 < 0.05 means H_1 is accepted and H_0 is rejected. So the hypothesis is accepted that there is a significant influence between growth mindset on academic grit in students who join organizations with an effective contribution of 18.6%.

In accordance with research by Duckworth et al., (2007) & US Department of Education (2018) which states that the factors that influence grit are education, age, thoroughness, achievement, effortful control, growth mindset and strategy. These factors may be other triggers that make a person's high academic grit.

The limitation in this study is using a psychological scale measuring instrument, where the measuring tool is not sufficient to measure the academic grit that exists in students (Duckworth, 2007; Egalite, 2015). Revealing one's academic grit cannot just use a scale, several other methods are needed such as behavioral measures or portfolios to get strong research results (Egalite, 2015). The scale in this study is in the form of a Likert scale, in which there are five answer choices. Middle or neutral answer options are provided. So that many subjects place their choices in the middle category. The data obtained is less informative because the differences between respondents are less visible (Azwar, 2017).

CONCLUSION

The conclusions obtained based on the research results obtained are as follows:

1. The results showed that there was a significant influence between growth mindset and academic grit in students who joined organizations. A high growth mindset score is produced in a person and a moderate score is academic grit for him.
2. Organizational students have academic grit at a moderate level. In the aspect of consistency, interest is in the medium category, and in the aspect of persistence, it is in the medium category.
3. The growth mindset of organizational students is in the high category. All aspects are in the high category, namely (1) belief in intelligence, talent, character can be developed, (2) belief in effort and hard work contributes to success, (3) belief in challenges, difficulties, obstacles, important for self-development, (4) belief in criticism and suggestions of others is a success feedback.

Based on the research results obtained, there are several suggestions given by researchers, namely higher education institutions can provide education on the importance of academic grit for academic success through social media, print media or class meetings. Students who have low academic grit can develop a growth mindset to increase academic grit. For future researchers, to reveal a person's grit level more deeply, further researchers can use more than one approach, such as behavioral measures or portfolios. Can use other variables that may have a major influence on increasing academic grit variables. This research can also be used as a reference for conducting research related to interventions in similar cases.

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