



The Dynamics of Grit on Student Academic Performance

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ABSTRACT

The increase of students in Indonesia from year to year shows that more and more individuals have the desire to increase their potential and abilities. This of course leads to the academic performance that will be produced. This research was conducted with the aim of knowing the dynamics of grit in student academic performance. The method used in this research is a type of qualitative research with a systematic literature review. The research design is in the form of SPIDER (sample, phenomenon of consistency of interest, design, evaluation, and research type) with the final number of articles used being 16. The results of the research show that grit and academic performance are known to have varying relationships which can be grouped into four relationships, namely significant positive, as a predictor, as a moderator, until there is no relationship between the two. In each relationship that has been mentioned, grit has its own role in the dynamics of academic performance. Based on the two dimensions of grit, persistence of effort is known to have a higher significance than consistency of interest in its influence on student academic performance.

Keywords: grit, academic performance, students, persistence of effort, consistency of interest

1. Introduction

Education is referred to as an individual learning process in order to achieve a more critical understanding (Maghfiroh & Akbar, 2021). All potential and abilities possessed by individuals can be developed through education. Every individual has his own rights and obligations in terms of education. The education system in Indonesia requires all citizens to take part in the General Secondary Education Program with 12 years of compulsory education, starting from elementary school to high school (Adisty, 2022). In connection with these educational obligations, individuals also have the same rights to obtain education, even more than is required. One of them is that individuals have the right to continue their education at a higher level, namely at university. This is also in accordance with data from the Central Statistics Agency (BPS) regarding the increasing number of Indonesian students (Mahdi, 2022) The following graph shows the increase in the number of students in Indonesia:

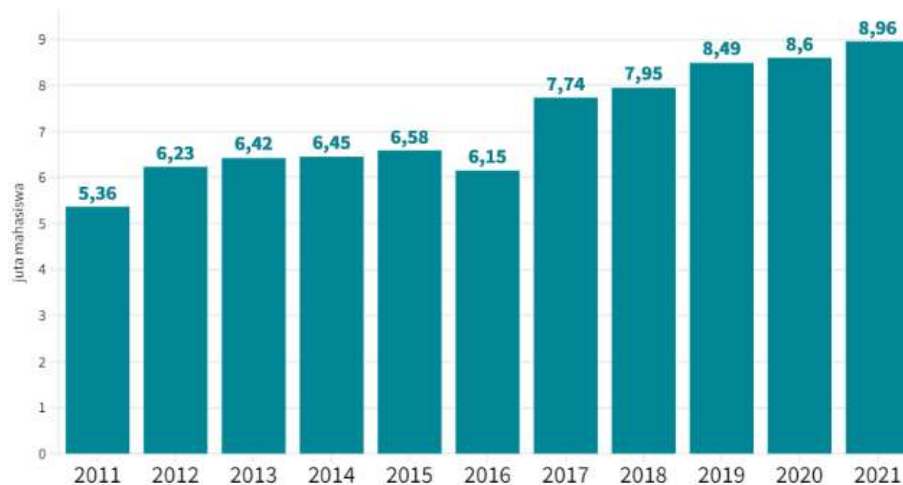


Figure 1. Graph of the Number of Indonesian Students 2011 – 2021

(Source: (Badan Pusat Statistik, 2022)

Based on the data in the graph above, it shows that in 2021 the number of Indonesian students will increase by 4.1% from the previous year. In more detail, the number of Indonesian students in 2021 is known to be 8,956,184 active students from various levels (Adisty, 2022). The increase in the number of students from year to year shows that more and more individuals have the desire to increase their potential and abilities. This also means that individuals have the motivation to become students by continuing their education at a higher level (Maharaj et al., 2018). Motivation is also known to have a role in determining the field or major one pursues (Scifres et al., 2021). Motivation can make individuals aware of the goals they want to achieve so they can show maximum results. The goal of every individual as a student in general is to develop potential and abilities. Therefore, motivation is needed in the process of achieving the goals of higher education, which is in accordance with the explanation of goal orientation theory (Elliott et al., 2005; Jach & Trolian, 2020; Volodina, 2021) Characteristics that describe individual motivation include: to achieve goals (Heckhausen & Heckhausen, 2008).

One of the results of motivation in students can be shown through academic performance. This is known based on the strong correlation between the two (Husna et al., 2022). Students who have strong motivation within themselves certainly provide encouragement to be more likely to display the intended results. Academic performance is also said to be the result of learning carried out by individuals while they are students. In general, academic performance in higher education takes the form of an academic achievement index which is obtained within one semester at the earliest. Through academic performance, students can find out whether their goals have been achieved or not.

Individuals, especially their status as students, are closely related to their persistence in achieving goals (Syarifuddin & Siregar, 2022). This then refers to one of the concepts that has a positive correlation with motivation to achieve goals, namely grit (Y. Liu, 2022). Grit is known to be able to play a role in motivation in the form of intrinsic improvement. Students can focus more on adapting, modifying, and controlling their own goals through intrinsic motivation, including grit. It is known that increasing grit can also provide attachment to students which influences motivation and shows results in the form of academic performance (Y. Liu, 2022; Luthans et al., 2019). Therefore, it can be said that grit is closely related to academic performance in students.

Increasing academic performance in individuals is known to come from the important role of motivation that grit produces (Y. Liu, 2022). Angela Duckworth defines grit as individuals who have strong determination, where grit can be used in two ways. First, an extraordinarily tenacious and hardworking individual. Second, the individual knows clearly what he wants. So individuals who have grit not only have determination, but also have direction (Duckworth, 2016). According to Vivekananda (2017) Grit is how often an individual displays a behavior to be able to maintain perseverance and enthusiasm in challenging circumstances in achieving the expected long-term goals. Akin and Arsalan (2014) explain that grit is a form of sustainable voluntariness of action directed towards a goal despite obstacles, difficulties or despair. Meanwhile, Hochanadel and Finamore state that grit is related to how a person can achieve their long-term goals with all their efforts to overcome obstacles and challenges (Hochanadel & Finamore, 2015).

Grit is a combination of passion and perseverance that can make individuals with special achievements. In her book, Angela also explains that motivation is an important part of grit. Motivation is the thing that underlies grit which is an aspect of interest in grit. Interest can be defined as the desire to learn new things, explore the world, seek new things, seek change and variety which is a basic natural urge for grit. (Duckworth, 2016). Grit can decrease in the first age group (13-19 years) and the second group (20-29 years), but grit will increase with age (Sigmundsson et al., 2022). Internal motivation can accelerate individual persistence in carrying out tasks. In line with this, the motivational awareness produced by grit has a very important role in improving academic performance (Werner et al., 2022). Grit shows that there is a positive indirect effect on behavior through autonomous motivation and conversely shows a negative indirect effect on controlling behavior through autonomous motivation (Marentes-Castillo et al., 2022).

Grit can significantly moderate the relationship between academic burnout and individual academic achievement (Xu et al., 2022). Motivation is an important part of grit, the presence of grit in individuals can help individuals in the academic world. One of them is in its role in academic performance for students. This shows the importance of grit for students to be able to continue to show it in life to achieve long-term goals and can lead individuals to be determined to face challenges, maintain efforts and interest even though there are challenges.

2. Method

This research is included in the type of systematic literature review with techniques in the form of identification, evaluation, and analysis of relevant research results from various reputable international journals to answer research questions (Xiao & Watson, 2019). The process carried out in this systematic literature review is carried out jointly by all researchers from planning to reporting. The questions in this research were formulated using the SPIDER design, namely sample, phenomenon of consistency of interest, design, evaluation, and research type. The search for articles as the main data source in this research was carried out through three databases, namely Google Scholar, PubMed, and Scopus. The keywords used by researchers in the search process are grit, student, academic performance. The next process, after obtaining articles that match the title and abstract with this research question, the researcher continues with the complete screening process based on the contents of the journal article. The number of journal articles in the complete screening process is known to be 127 which will later be filtered based on predetermined inclusion criteria such as 1) Research conducted in the 2015-2022 period, 2) Journal articles discussing grit and academic performance, 3) Journal articles written using Bahasa English, 4) research subjects are students, 5) Research was conducted using quantitative methods. The screening process was also carried out by applying exclusion criteria to remove journal articles that did not match the objectives of this research. The exclusion criteria include 1) Journal articles that discuss grit but outside the context of academic performance, 2) Journal articles not written in English, 3) types of non-journal article publications such as books, literature studies, theses, theses, dissertations, and research it is not clear what method to use. The screening results provide the final number of journal articles used in this systematic literature review of 16.

3. Results

In this research, a more in-depth study was carried out based on several previous studies to determine the dynamics of grit in student academic performance. This research uses several previous studies as follows:

Table 1. List of dimensions in the grit and academic performance variables

No	Writer	subject	Grit Dimensions	Dimensions of Academic Performance
1	James R (2015)	64 Students in Midwest, USA	Grit	Student Success
2	Adam N, Pete (2017)	724 Students in US	Effort Perseverance, Consistency of interest	Academic Performance
3	Wincy Wing Sze Lee (2017)	345 Diploma Students in Hong Kong	Grit	Academic Performance, Perceived Academic Failure, And Stress Levels
4	Adrian Jason L. Palisoc, (2017)	98 Students in California	Grit	GPA And Academic Success
5	Lisa Renee Miller-Matero (2018)	131 Students In USA	Grit	Student Performance
6	Henry D. Mason (2018)	121 Students in South Africa	Grit	Academic Performance
7	Nicole Buzzetto-Hollywood (2019)	120 Students in USA	Grit	GPA, Persistence To Graduation
8	Elisa Huéscar Hernández, Juan Antonio Moreno-Murcia, Luís Cid, Diogo Monteiro And Filipe Rodrigues (2020)	443 Sport Science Students in Portuguese	Grit Passion, Grit Perseverance of effort	Weighted Grade Point Average (GPA)
9	Amal Alhadabi And Aryn C. Karpinski (2020)	258 Undergraduate Students in US	Grit Consistency of Consistency of interest (G-CI) Grit Perseverance of Effort of Effort (G-PE)	Performance-Avoidance Goals (AG), Performance-Approach Goals (AG), Mastery Goals (MG), Academic Performance (GPA)
10	Daniel Terry And Blake Peck (2020)	2349 Nursing Students in Australia	Trait-Level Perseverance of effort, Passion for Long-Term Goals	Academic Performance, Clinical Performance
11	Nasser AN Alzerwi (2020)	254 Medical Students in Saudi Arabia	Grit	GPA, Repetition Status
12	Janice W. Kookan, Raafat Zaini, And Ivon Arroyo (2021)	449 Students in Massachusetts And Argentina	Consistency of Consistency of interest, Perseverance of effort of Effort	Help Seeking, Time Management, Self Consequences
13	Elina A. Pulkkinen, Mchiro and Pablo Perez De La Ossa, Phd (2021)	126 Students in Barcelona	Trait-Level Perseverance of effort, Passion For Long-Term Goals	Number Of Resits, And Previous Year's GPA
14	Liling Xu, Zhenhai Wang, Zhiyuan Tao and Chengfu Yu (2022)	1130 Undergraduate Students in China	Perseverance of effort Of Effort, Consistency of Consistency of interest s	Average Examination Scores for English Courses
15	Xiaoyu Hu, Gurnam Kaur Sidhu and Xin Lu (2022)	388 EFL Students in China	Perseverance of effort Of Effort, Consistency of Consistency of interest s	College English Test-Band
16	Yun Tao Wu, Lydia Yoke Yean Foong, And Noryati Alias (2022)	624 Non -English Speaking Major Student In China	Perseverance of effort Of Effort, Consistency of Consistency of interest s	Students' College English Test Brand 4 (CET-4) Results

(Source: Researcher data processing, 2022)

4. Discussion

Academic performance is an important predictor of performance at the educational level. Academic performance can be known through the results in academic testing. One of the relevant perspectives in understanding academic performance is the social-cognitive motivation theory by Dweck in 1986,

with the main premise being that individual behavior is a function of the desire to achieve certain goals, and research that focuses on two aspects, namely learning goals (mastery) or task-oriented) and performance (ego-oriented) (Fenollar et al., 2007), as well as the results of academic performance which have various forms that can be measured

The most widely used (A. Buzzetto-Hollywood & C. Mitchell, 2019; Alhadabi & Karpinski, 2020; Alzerwi, 2020; Hernández et al., 2020; Palisoc et al., 2017), and academic performance with a total of four articles (Lee, 2017; Mason, 2018; Pate et al., 2017; Terry & Peck, 2020), while another form of academic performance is student success (Wolf & Jia, 2015), academic success (Palisoc et al., 2017), student performance (Miller-Matero et al., 2018), approach goals (AG), avoidance goals (AG), mastery goals (MG) (Alhadabi & Karpinski, 2020), time management, self consequences, help seeking (Kooken et al., 2021), stress level and perceived academic failure (Lee, 2017), courses (Xu et al., 2022), number of resits and previous year's GPA (Pulkkinen & De La Ossa, 2021), repetition status (Alzerwi, 2020), College English Test-Band (Hu et al., 2022), Students' College English Test brand 4 (CET-4) results (Xu et al., 2022). Based on the results of the explanation, it can be seen that the majority of academic performance within the scope of higher education is in GPA and academic performance.

Higher education is closely related to student academic performance, how students face difficulties and pressures in the world of education to achieve their goals. Studying diligently is the easiest way to improve academic abilities, accompanied by passion and perseverance, success in mastering the material will be achieved. Perseverance can predict academic success, that students who are encouraged to value hard work are more likely to show higher academic scores (Hernández et al., 2020). As for students who are passionate about learning for extrinsic goals such as getting praise or performing better than their peers, they have a higher probability of adopting avoidance goals, especially in a stressful learning environment (Alhadabi & Karpinski, 2020), this is done to achieve the (Alhadabi & Karpinski, 2020). with better performance. Students who have the enthusiasm and persistence to work and study extensively through challenges and difficulties to achieve a set of goals tend to achieve higher achievements compared to others who do not have similar aspects (Hernández et al., 2020 (Hernández et al., 2020).

Students can show and evaluate perceptions of their academic performance as a success or failure. The results of the analysis show that interest and persistence are negatively related to stress, and only the perception of academic failure is positively related to stress. This suggests that psychological appraisals and resources are more important antecedents of stress than objective negative events (Lee, 2017). Furthermore, students who believe that capabilities can be strengthened through work and dedication are more likely to expend effort, seek challenges, and persevere through failure, resulting in greater achievement (Hu et al., 2022). Understanding ability in the evaluation phase predicted higher success expectations in the forethought phase, and higher success expectations predicted increased grit. This explains that high expectations of success mean that students believe they will do well, understand, and be successful in future assignments (Kooken et al., 2021). Students who perceive themselves as more interested and persistent when studying will have more self-efficacy. This, in the end, will show the implementation of a positive learning goal orientation which results in a higher GPA (Alhadabi & Karpinski, 2020).

Academic success correlates with GPA and students who can easily understand the subject matter being taught (Palisoc et al., 2017). Whether a student is successful or not depends on the level of mastery relative to the difficulty of the questions and the amount and quality of guidance and support sought. This is measured by mastery as a predictor of expectations of success, and when students succeed, mastery of knowledge increases, resulting in increased emotionality and grit, and ultimately in success and mastery (Kooken et al., 2021). The mastery and performance goals increase academic performance, while avoidance goals can have a negative impact on GPA (Alhadabi & Karpinski, 2020), so the goal of academic performance must also be directed at clear goals as a reference in improving academic performance even though in increasing it there are increasing difficulties. .

Adversity tends to lead to poor overall academic performance. Additionally, students with higher levels of academic burnout report lower resilience, and thus may find it more difficult to "bounce back" from the negative experience of academic failure and the increased pressure in the learning process can overwhelm them and lead to poor academic performance (Wu et al., 2022). Poor student performance can have an impact on decreasing academic performance, where students will consider themselves incapable and have failed in achieving their goals. Khajavy et al (2021) stated that for a student with a fixed mindset, failure indicates a lack of intelligence or ability, and that a student does not have the skills necessary to be a successful learner. For someone with a growth mindset, on the other hand, failure is an important component of learning and serves as a potential opportunity to improve and progress (Wu et al., 2022).

Academic performance has an attachment to grit. Students with grit show persistence and interest in achieving their goals. In line with this, grit-persistence was found to be more important for academic achievement than grit-interest (Hernández et al., 2020). Exercise in achieving success in college requires commitment to long-term goals, correlated with higher Grit-S (Grit-Scale) scores and student academic success. Higher Grit-S scores are also strongly associated with achievement in graduate school (Palisoc et al (Palisoc et al., 2017). Within the scope of higher education, grit is also needed to be able to pursue and achieve academic targets.

academic performance can predict student success in the future, namely with a commitment to persevere in achieving goals (J. Liu, 2021). Apart from that, increased performance, and evaluation of perceptions of academic performance in evaluating success and failure show that this can influence students to be able to put forth effort to show perseverance. Perseverance (grit) has an important role for students in achieving their long-term goals. With grit, it can be seen how high the performance is exerted in achieving the final academic outcome target even though there are obstacles or difficulties in the process of achieving it.

Duckworth et al. (2007) defines grit as behaving with passion and persistence to achieve long-term targets despite difficulties. People with higher levels of fortitude are more determined when trying to overcome obstacles (Alhadabi & Karpinski, 2020). Grit is defined "as passion and persistence for long term goals". Grit refers to the level of drive shown by students to achieve their long-term goals and reflects the trait-level persistence and passion for

long-term goals. Grief therefore involves working hard towards challenging goals and maintaining effort and interest over the years, despite failures, setbacks and unstable progress (Hernández et al., 2020).

The form of grit in several studies that have been conducted previously mostly used grit in general as the main discussion with a total of seven articles (A. Buzzetto-Hollywood & C. Mitchell, 2019; Alzerwi, 2020; Lee, 2017; Mason, 2018; Miller-Matero et al., 2018; Palisoc et al., 2017; Wolf & Jia, 2015). Another form of grit is effort performance with a total of six articles (Alhadabi & Karpinski, 2020; Hernández et al., 2020; Kooken et al., 2021; Pate et al., 2017; Pulkkinen & De La Ossa, 2021; Terry & Peck, 2020), Consistency of consistency of interest with a total of six articles (Alhadabi & Karpinski, 2020; Hu et al., 2022; Kooken et al., 2021; Pate et al., 2017; Wu et al., 2022; Xu et al., 2022), and passion with three articles (Hernández et al., 2020; Pulkkinen & De La Ossa, 2021; Terry & Peck, 2020).

Grit has been understood as a highly stable, domain-general tendency to maintain consistent and focused interest and effort toward important and challenging personal goals (Kooken et al., 2021). Grittiness can be linked to student (Pate et al., 2017), this shows that grit is an important factor for academic success (Mason, 2018). There are six personality attributes of grit where self-regulation is the ability to guide one's behavior to achieve goals, self-discipline is the ability to control weaknesses and apply oneself towards achieving goals, resilience is the ability to recover from setbacks, obedience is having a sense of obligation to complete goals, rigor is the vigilant desire to settle obligations (A. Buzzetto-Hollywood & C. Mitchell, 2019)

Grit is one of many potential tools that can assist educational institutions in further evaluating and clarifying students' self-control or non-cognitive domains (Pate et al., 2017). One dimension of grit can be positively correlated with student self-efficacy, which is hypothesized to influence student goal orientation and academic performance. Self-efficacy is defined as a supporting role with a positive impact on mastery goals and performance approaches and a protective role by reducing the negative impact of avoidance goals on academic performance indirectly (Alhadabi & Karpinski, 2020). The importance of having directed goals is for students to be able to exert their efforts towards the goal of academic performance with confidence in their own ability to improve academic performance to a better level. The strength between grit and perceived performance both academically and clinically makes grit a valuable factor for student development as a means for success in study programs (Terry & Peck, 2020). Grit is a stronger predictor of subject class than student intelligence (Wolf & Jia, 2015). Although cultivating grit in new students can produce a positive influence, grit alone is not enough. Students with grit but a lack of clear goals, a positive self-state, and a growth mindset may not direct their energy and goals appropriately (A. Buzzetto-Hollywood & C. Mitchell, 2019). As students' grit measures increase, so do their perceived levels of performance (Terry & Peck, 2020).

Higher grit and expectations of success can lead to greater success, success leads to greater mastery, and then mastery leads back to greater expectations of success and emotions, ultimately leading to mechanisms of change in grit, which measured to have increased (Kooken et al., 2021). Higher grit scores may be associated with less repetition by a year or more among college students, although follow-up studies are needed to compare grit scores with completion status (Alzerwi, 2020). Students with higher grit achieve better (Xu et al., 2022) in line with this, students who show high grit are proven to have a higher level of success in academic and non-academic performance, they have a higher level of motivation. higher when they seek meaning to achieve goals (Terry & Peck, 2020).

Grit is known to be based on Grit-S to have a positive correlation with the pursuit and successful achievement of postgraduate residency or student training (Palisoc et al., 2017). Many students in medical school may be able to learn and memorize information easily, which may not require the same level of persistence. Alternatively, a high level of persistence may be required when working directly with clinical scenarios as students need to apply their knowledge which is often more challenging and requires more practice than memorizing information. Therefore, personality factors such as grit can predict who will be more successful (Miller-Matero et al., 2018). Perseverance can predict academic success, showing that students who are encouraged to appreciate their hard work are more likely to demonstrate higher academic grades (Hernández et al., 2020). Grit-S may be useful for distinguishing students who perform well from those who are at risk of lower grades (Pulkkinen & De La Ossa, 2021). Such is the case in graduate training, which requires commitment to long-term goals, correlated with higher Grit-S scores and student academic success. Higher Grit-S scores are also strongly associated with achievement (Palisoc et al., 2017). Meanwhile, medical students will have a high level of grit because they have completed and excelled in undergraduate education, achieved high performance on the Medical College Administration Test (MCAT), and were accepted as medical students (Miller-Matero et al., 2018), this is because Achieving academic success in undergraduate programs that have been completed with superior results shows that academic performance continues to improve. As for the dimensions of grit that play an important role in academic achievement, in the grit dimension, grit-perseverance was found to be more important for academic achievement than grit-interest (Hernández et al., 2020). By investigating students' grit scores, it is possible to identify students who are at risk of underachieving or dropping out of school (Pulkkinen & De La Ossa, 2021).

Duckworth (2016) explains that the presence of grit is strongly associated with success in life in various domains. However, recent findings also show that grit can decrease when people are exposed to adverse life events (Mason, 2018), that only perceived academic failure is positively related to stress, whereas academic performance and perceived academic failure are not correlated. The two dimensions of grit (interest and persistence) are negatively related to stress (Lee, 2017). Apart from that, grit can moderate the mediating pathway from learning stress to academic performance, students with a high level of grit show better academic performance than students with a low level of grit; however, this difference was greater when they reported lower levels of academic burnout (Xu et al., 2022). Low grit learners give up easily when they learn a foreign language (Wu et al., 2022). It was also shown that grit mediates the relationship between growth mindset and learning English as a foreign language (ELP) indicating that students who believe that their English skills can be improved are more likely to have higher levels of grit and persistence in learning English, which in turn contributes to higher language attainment (Hu et al., 2022).

Grit as a part of positive psychology that is currently widely researched, is also linked to academic performance, especially in the scope of tertiary education. This can be known in more detail based on several studies that were reviewed in this study. Grit and academic performance are known to have

varying relationships which can be grouped into 4 relationships, namely significant positive (A. Buzzetto-Hollywood & C. Mitchell, 2019; Alhadabi & Karpinski, 2020; Hernández et al., 2020; Hu et al., 2022; Lee, 2017; Mason, 2018; Pate et al., 2017; Pulkkinen & De La Ossa, 2021; Terry & Peck, 2020; Wolf & Jia, 2015; Wu et al., 2022)al (Hernández et al., 2020; Kooken et al., 2021; Mason, 2018; Miller-Matero et al., 2018; Pate et al., 2017)as a moderator (Xu et al., 2022), so there is no relationship between the two (Alzerwi, 2020; Palisoc et al., 2017). In each relationship that has been mentioned, grit has its own role in the dynamics of academic performance.

Grit and academic performance are known to have a significant and positive relationship. This shows that the grit possessed by someone, especially as a student, can play a role in improving academic performance. Grit is also known to be a determinant of higher value rankings compared to intelligence (Wolf & Jia, 2015). Apart from that, grit is also mentioned as an important part that can determine high (Pate et al., 2017). In this case, it is known that students who have a high Grit-S score also have a high GPA, namely above 3.5. Grit and academic performance, which have a positive and significant relationship, also means that grit is a valid concept for understanding students' inner resources (Mason, 2018). This statement certainly makes clear again that grit is part of the success of learning in higher education, including determining graduation (A. Buzzetto-Hollywood & C. Mitchell, 2019).

Grit, which is a form of individual quality, is able to have a significant influence on academic performance, including achieving desired goals (Alhadabi & Karpinski, 2020). The learning process and efforts made by students can improve academic performance to be even better. This is clearly stated in previous research that high and flexible grit can make student academic performance that was initially good become even better (Terry & Peck, 2020). Apart from that, students with high academic performance can also show good final grades and have a low tendency to fail exams (Pulkkinen & De La Ossa, 2021). Successes that are realized in academic performance can be obtained based on the same high level of grit. A competitive environment is also one of the driving factors that can provide an increase in grit so that it has an impact on academic performance (Hu et al., 2022).

Students who have high grit can also improve their academic performance. High grit can enable students, apart from obtaining high academic performance, to also improve performance in other forms (Miller-Matero et al., 2018). Some of them can include the ability to use a foreign language, for example English. Higher grit and expectations of success can lead to even greater success (Kooken et al., 2021), Success leads to greater mastery, and then mastery leads back to greater expectations of success and emotions, which in turn ultimately leading to mechanisms of change in grit. Therefore, it can also be said that between grit and academic performance there is a two-way relationship, where high grit can improve academic performance and high academic performance can make grit improve more than before.

Students with low grit will have a tendency to give up (Wu et al., 2022). This is known based on the behavior of students who lack persistence in learning and achieve less than optimal academic performance. Students who have low grit also tend to experience high levels of academic fatigue more easily (Xu et al., 2022). In the end, this fatigue makes students easily give up on their goals, including in terms of academic performance. This problem certainly needs to be of deeper concern to many parties, especially to the students themselves. Grit as persistence in achieving goals must continue to be improved so as to achieve optimal academic performance.

Grit in general according to Duckworth (2016)consists of two dimensions, namely the persistence of effort and the consistency of interest. The role of grit in academic performance has been described previously, but there are several studies that provide novel findings. Based on the results of several studies, it is stated that between the two dimensions grit is able to provide a different portion of the role. Perseverance of effort is known to have a higher significance than consistency of interest in its effect on academic performance (Alhadabi & Karpinski, 2020; Hernández et al., 2020; Lee, 2017; Mason, 2018; Pulkkinen & De La Ossa, 2021). Perseverance of effort as a business persistence appears to be an important component of grit that can help students improve academic achievement. Researchers have demonstrated that the capacity to persevere in the face of ongoing challenges, such as those experienced in an academic setting, can be demonstrated through persistence (Lee, 2017; Mason, 2018). Therefore, it can be said that the persistence of effort is a significant predictor of success in an academic context and beyond. Perseverance of effort can also provide an explanation that grit is an effort that has an impact on student academic goals and regulated learning strategies so as to increase academic performance (Alhadabi & Karpinski, 2020).

The dimensions of grit are often shown in persistence of effort compared to consistency of interest (Hernández et al., 2020). Furthermore, in one study it was stated that persistence of interest had an influence of 9% in variations in academic performance, while consistency of interest was only 3% (Mason, 2018). The two dimensions of grit are not equally important, persistence of effort is a significant predictor of academic performance but is different from consistency of interest. Perseverance of effort appears to predict academic success through the behavior of students who are encouraged to value hard work, so they are more likely to display higher academic grades. Previous research also stated that grit through perseverance of effort is able to increase students' academic grades through their GPA (Pulkkinen & De La Ossa, 2021). Based on the known results, it can be said that persistence of effort provides a larger portion. This means that in understanding grit, students need to focus more on the dimension of perseverance of effort so that they can provide a form of grit that increases.

5. Conclusion

Academic performance is an important predictor of performance at the educational level which can be known through the final results in academic testing. The most widely used form of academic performance at the tertiary level is the GPA. Academic performance has an attachment to grit in students who show persistence and interest in achieving their goals. Grit refers to the level of drive students demonstrate to achieve their goals over the long term and reflects trait-level persistence and passion for long-term goals. The most widely used form of grit in research is grit in general. Grit and academic performance are known to have varying relationships which can be grouped into four relationships, namely positive significant, as a predictor, as a moderator, and as having no relationship between the two. In each relationship that has been mentioned, grit has its own role in the dynamics of academic

performance. Based on the two dimensions of grit, persistence of effort is known to have a higher significance than consistency of interest in its influence on student academic performance.

References

- A. Buzzetto-Hollywood, N., & C. Mitchell, B. (2019). Grit and Persistence: Findings from a Longitudinal Study of Student Performance. *Issues in Informing Science and Information Technology*, 16(June), 377–391. <https://doi.org/10.28945/4375>
- Adisty, N. (2022a, April 13). *Jumlah Mahasiswa Indonesia Kian Meningkat Tiap Tahun - GoodStats*. GoodStats. <https://goodstats.id/article/terjadi-peningkatan-intip-jumlah-mahasiswa-di-indonesia-dari-tahun-ke-tahun-viRWK>
- Adisty, N. (2022b, April 13). *Jumlah Mahasiswa Indonesia Kian Meningkat Tiap Tahun - GoodStats*. GoodStats. <https://goodstats.id/article/terjadi-peningkatan-intip-jumlah-mahasiswa-di-indonesia-dari-tahun-ke-tahun-viRWK>
- Akin, A., & Arslan, S. (2014). Başarı yönelimleri ile kararlılık arasındaki ilişkiler. *Eğitim ve Bilim*, 39(175), 267–274. <https://doi.org/10.15390/EB.2014.2125>
- Alhadabi, A., & Karpinski, A. C. (2020). Grit, self-efficacy, achievement orientation goals, and academic performance in University students. *International Journal of Adolescence and Youth*, 25(1), 519–535. <https://doi.org/10.1080/02673843.2019.1679202>
- Alzerwi, N. A. N. (2020). Effects of grit on the academic performance of medical students: A cross-sectional study at Majmaah university. *Advances in Medical Education and Practice*, 11, 419–425. <https://doi.org/10.2147/AMEP.S256152>
- Badan Pusat Statistik. (2022). *Jumlah Perguruan Tinggi, Tenaga Pendidik dan Mahasiswa(Negeri dan Swasta) di Bawah Kementerian Riset, Teknologi dan Pendidikan Tinggi/Kementerian Pendidikan dan Kebudayaan Menurut Provinsi, 2021*. Badan Pusat Statistik. https://www.bps.go.id/indikator/indikator/view_data_pub/0000/api_pub/cmdTdg5vU0IwKzBFR20rQnpuzEYzdz09/da_04/1
- Duckworth, A. (2016a). *Grit: The Power of Passion and Perseverance*.
- Duckworth, A. (2016b). *Grit: The Power of Passion and Perseverance*.
- Elliott, J. G., Hufton, N. R., Willis, W., & Illushin, L. (2005). Motivation, engagement and educational performance: International perspectives on the contexts for learning. *Motivation, Engagement and Educational Performance: International Perspectives on the Contexts for Learning*, 1–272. <https://doi.org/10.1057/9780230509795>
- Fenollar, P., Román, S., & Cuestas, P. J. (2007). University students' academic performance: An integrative conceptual framework and empirical analysis. *British Journal of Educational Psychology*, 77(4), 873–891. <https://doi.org/10.1348/000709907X189118>
- Heckhausen, J., & Heckhausen, H. (2008). *Motivation and Action*. Springer-Verlag.
- Hernández, E. H., Moreno-Murcia, J. A., Cid, L., Monteiro, D., & Rodrigues, F. (2020). Passion or perseverance? The effect of perceived autonomy support and grit on academic performance in college students. *International Journal of Environmental Research and Public Health*, 17(6). <https://doi.org/10.3390/ijerph17062143>
- Hochanadel, A., & Finamore, D. (2015). Fixed And Growth Mindset In Education And How Grit Helps Students Persist In The Face Of Adversity. *Journal of International Education Research (JIER)*, 11(1), 47–50. <https://doi.org/10.19030/jier.v11i1.9099>
- Hu, X., Sidhu, G. K., & Lu, X. (2022). Relationship Between Growth Mindset and English Language Performance Among Chinese EFL University Students: The Mediating Roles of Grit and Foreign Language Enjoyment. *Frontiers in Psychology*, 13(July). <https://doi.org/10.3389/fpsyg.2022.935506>
- Husna, N., Arif, L. S., & Wahid, M. (2022). HUBUNGAN ANTARA SELF-EFFICACY TERHADAP PRESTASI AKADEMIK PADA MAHASISWA KEDOKTERAN GIGI (TINJAUAN PUSTAKA). *Cakradonya Dent J*, 14(2), 112–121. <https://doi.org/10.3176/chem.geol.1975.2.10>
- Jach, E. A., & Trolan, T. L. (2020). First-Year Undergraduate Employment and Students' Academic Motivation. *Journal of College Student Retention: Research, Theory and Practice*. <https://doi.org/10.1177/1521025120947350>
- Kookan, J. W., Zaini, R., & Arroyo, I. (2021). Simulating the dynamics of self-regulation, emotion, grit, and student performance in cyber-learning environments. In *Metacognition and learning* (Vol. 16, Issue 2, pp. 367–405). <https://doi.org/10.1007/s11409-020-09252-6>
- Lee, W. W. S. (2017). Relationships among grit, academic performance, perceived academic failure, and stress in associate degree students. *Journal of Adolescence*, 60, 148–152. <https://doi.org/10.1016/j.adolescence.2017.08.006>
- Liu, J. (2021). The Role of Grit in Students' L2 Engagement in the English as a Foreign Language Classroom. In *Frontiers in Psychology* (Vol. 12). <https://doi.org/10.3389/fpsyg.2021.749844>
- Liu, Y. (2022). Investigating the Role of English as a Foreign Language Learners' Academic Motivation and Language Mindset in Their Grit: A Theoretical Review. *Frontiers in Psychology*, 13(May), 1–7. <https://doi.org/10.3389/fpsyg.2022.872014>

- Luthans, K. W., Luthans, B. C., & Chaffin, T. D. (2019). Refining Grit in Academic Performance: The Mediation Role of Psychological Capital. *Journal of Management Education*, 43(1), 35–61. <https://doi.org/10.1177/1052562918804282>
- Maghfiroh, N., & Akbar, Z. Y. (2021). the Effect of Grit and Learning Motivation on Academic Procrastination Through Online Learning on Students of Mts N 1 Banyumas. *Psimphoni*, 2(1), 39. <https://doi.org/10.30595/psimphoni.v2i1.11396>
- Maharaj, C., Blair, E., & Chin Yuen Kee, S. (2018). The motivation to study: an analysis of undergraduate engineering students at a Caribbean university. *Journal of Further and Higher Education*, 42(1), 24–35. <https://doi.org/10.1080/0309877X.2016.1188901>
- Mahdi, M. I. (2022, March 8). *Jumlah Mahasiswa Indonesia Mencapai 8,96 Juta pada 2021*. Data Indonesia. <https://dataindonesia.id/ragam/detail/jumlah-mahasiswa-indonesia-mencapai-896-juta-pada-2021>
- Marentes-Castillo, M., Castillo, I., Tomás, I., Zamarripa, J., & Alvarez, O. (2022). Understanding the antecedents of healthy and unhealthy weight control behaviours: Grit, motivation and self-control. *Public Health Nutrition*, 25(6), 1483–1491. <https://doi.org/10.1017/S1368980021004791>
- Mason, H. D. (2018). Grit and academic performance among first-year university students: A brief report. *Journal of Psychology in Africa*, 28(1), 66–68. <https://doi.org/10.1080/14330237.2017.1409478>
- Miller-Matero, L. R., Martinez, S., MacLean, L., Yaremchuk, K., & Ko, A. B. (2018). Grit: A predictor of medical student performance. In *Education for health (Abingdon, England)* (Vol. 31, Issue 2, pp. 109–113). https://doi.org/10.4103/efh.EfH_152_16
- Palisoc, A. J. L., Matsumoto, R. R., Ho, J., Perry, P. J., Tang, T. T., & Ip, E. J. (2017). Relationship between grit with academic performance and attainment of postgraduate training in pharmacy students. *American Journal of Pharmaceutical Education*, 81(4), 1–10. <https://doi.org/10.5688/ajpe81467>
- Pate, A. N., Payakachat, N., Harrell, T. K., Pate, K. A., Caldwell, D. J., & Franks, A. M. (2017). Measurement of Grit and Correlation to Student Pharmacist Academic Performance. In *American journal of pharmaceutical education* (Vol. 81, Issue 6, p. 105). <https://doi.org/10.5688/ajpe816105>
- Pulkkinen, E. A., & De La Ossa, P. P. (2021). Grit and chiropractic students' academic performance: A cross-sectional study. *Journal of Chiropractic Education*, 35(1), 124–130. <https://doi.org/10.7899/JCE-19-8>
- Scifres, E. L., Cox, M., Crocker, R. M., Mishra, R., & Scott, G. W. (2021). Academic motivation and the undergraduate business major. *Journal of Education for Business*, 96(8), 510–515. <https://doi.org/10.1080/08832323.2020.1869680>
- Sigmundsson, H., Haga, M., Elnes, M., Dybendal, B. H., & Hermundsdottir, F. (2022). Motivational Factors Are Varying across Age Groups and Gender. *International Journal of Environmental Research and Public Health*, 19(9). <https://doi.org/10.3390/ijerph19095207>
- Syarifuddin, N. A. S., & Siregar, S. M. (2022). Relationship between Grit and Achievement Motivation for University Student During Online Learning. *Psikologia : Jurnal Psikologi*, 5(1), 1–10. <https://doi.org/10.21070/psikologia.v5i1.1400>
- Terry, D., & Peck, B. (2020). Academic and clinical performance among nursing students: What's grit go to do with it? *Nurse Education Today*, 88(September 2019), 104371. <https://doi.org/10.1016/j.nedt.2020.104371>
- Vivekananda, N. L. A. (2017). studi deskriptif mengenai Grit pada Mahasiswa Fakultas Psikologi Universita Kristen Maranatha Bandung. *Psikologi*, 1, 183–195.
- Volodina, O. V. (2021). Formation of meaning-making motivation of undergraduate students in the process of foreign language education. *Perspektivy Nauki i Obrazovania*, 52(4), 220–227. <https://doi.org/10.32744/pse.2021.4.14>
- Werner, K. M., Milyavskaya, M., Klimo, R., & Levine, S. L. (2022). Examining the Association of Grit Profiles With Big Five Personality and Achievement Among Iranian Foreign Language Learners. *Frontiers in Psychology*, 13(3), 1–9. <https://doi.org/10.3389/fpsyg.2022.1032675>
- Wolf, J. R., & Jia, R. (2015). The Role of Grit in Predicting Student Performance in Introductory Programming Courses : An Exploratory Study. *SAIS 2015 Proceedings*, 1–8.
- Wu, Y. T., Foong, L. Y. Y., & Alias, N. (2022). Motivational and Grit Affects Undergraduate Students English Language. *European Journal of Educational Research*, 10(3), 1075–1088.
- Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, 39(1), 93–112.
- Xu, L., Wang, Z., Tao, Z., & Yu, C. (2022a). English-learning stress and performance in Chinese college students: A serial mediation model of academic anxiety and academic burnout and the protective effect of grit. *Frontiers in Psychology*, 13(November), 1–10. <https://doi.org/10.3389/fpsyg.2022.1032675>
- Xu, L., Wang, Z., Tao, Z., & Yu, C. (2022b). English-learning stress and performance in Chinese college students: A serial mediation model of academic anxiety and academic burnout and the protective effect of grit. *Frontiers in Psychology*, 13(November), 1–10. <https://doi.org/10.3389/fpsyg.2022.1032675>