

Exploration on High School Students' Grit: Its Effects on the Students' Potential Development

(Eksplorasi Grit Siswa Sekolah Menengah: Implikasinya dalam Pengembangan Potensi Peserta Didik)

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Article received: July 2nd 2021; revised: August 14th 2021; accepted: September 17th 2021

Abstract: The education process in Indonesia has been implemented using a variety of modern tools, but it should be understood that the quality of learning activities in the classroom is also influenced by the interactions that occur in the classroom. Teachers must understand that to create interaction in the classroom, they must first understand the grit level that can help make learning fun. The purpose of this study was to determine the grit level of high school students in Bangka Belitung Province, Indonesia. This research is survey research conducted in Bangka Belitung Province and involves 770 respondents. The results showed that: (1) 25% of respondents were distracted by a new idea or activity, (2) 47% of respondents who did not give up in achieving their goals even though they experienced failure, (3) 23% of respondents did not pursue other goals after setting goals, (4) 39% of respondents are persistent in their business or work, (5) 25% of respondents cannot maintain their focus when carrying out long activities, (6) 46% of respondents always try to complete each of their activities, (7) 35% of respondents have interests that change every year, (8) 32% of respondents is diligent and do not give up easily, (9) 23% of respondents were obsessed with activity but it did not last long, (10) 41% of respondents have experienced failure in conquering important challenges.

Keywords: education; students; grit; survey

Abstrak: Proses pendidikan di Indonesia telah dilaksanakan menggunakan berbagai alat yang modern, tetapi perlu dipahami bahwa kualitas aktivitas belajar di dalam kelas juga dipengaruhi oleh interaksi yang terjadi di dalam kelas. Para guru harus memahami bahwa untuk menciptakan interaksi di dalam kelas, mereka harus terlebih dahulu memahami tingkatan grit yang dapat membantu menciptakan pembelajaran yang menyenangkan. Tujuan penelitian ini adalah untuk mengetahui tingkatan grit peserta didik sekolah menengah atas Provinsi Bangka Belitung, Indonesia. Penelitian ini merupakan penelitian survei yang dilaksanakan di Provinsi Bangka Belitung dan melibatkan 770 responden. Hasil menunjukkan bahwa: (1) 25% responden yang perhatiannya teralihkan oleh ide atau aktivitas baru, (2) 47% responden yang tidak menyerah dalam mencapai tujuan mereka meskipun mereka mengalami kegagalan, (3) 23% responden tidak mengejar tujuan yang lain setelah menetapkan tujuan, (4) 39% responden gigih dalam berusaha atau bekerja, (5) 25% responden tidak bisa mempertahankan fokus mereka ketika melaksanakan aktivitas yang lama, (6) 46% responden selalu berusaha menyelesaikan setiap aktivitas mereka, (7) 35% responden memiliki minat yang berubah setiap tahun, (8) 32% responden memiliki sifat yang rajin dan tidak mudah menyerah, (9) 23% responden pernah terobsesi pada suatu aktivitas tetapi tidak berlangsung lama, (10) 41% responden pernah mengalami kegagalan dalam menaklukkan tantangan penting.

Kata kunci: pendidikan; siswa; grit; survey

INTRODUCTION

A greater education system represents better countries (Sartono et al., 2021; Sartono & Karso, 2020). In Indonesia, the education system consists of three types, namely: formal, nonformal, and informal education. Each of the education track carries a different learning process. Therefore, modern learning activities and interactions do not always result in a better and more fun learning process.

In establishing fun learning, a number of educational psychology theories can be adopted, such as the flow, grit, and growth mindset theories (Hochanadel & Finamore, 2015; West et al., 2016). Flow theory explains the motivation of individuals facing a number of challenges, that lead to both high cognitive or decreased interest (Wang et al., 2019; Westera, 2018). Someone who experiences flow will attain contentment during the learning process as flow is an integral part of happiness (Csikszentmihalyi, 2014).

Grit theory explains that an individual's character is divided into the consistency of interest and perseverance. Consistency of interest refers to the extent of someone's focus in obtaining their long-term aspiration. Meanwhile, perseverance correlates with someone's ability to face challenges and inconveniences, while still maintaining their struggle to get their long-term ambition (Datu et al., 2017). The growth mindset theory refers to someone's ability to grow and develop following his capacity, and his non-innate skills (Hanson et al., 2016). Due to the limited research period, this study focuses only on grit theory.

Substantially, grit concepts come from the perception that desire and tenacity are more crucial than innate skills. Perkins-gough and Duckworth (2013) describe that the grit concept is originated from an idea that tenacity and perseverance are more vital than innate skills and ability. Duckworth (2016) places grit as one of the most critical parts of psychology that should be the focus of educational literature development. Recently, grit is one of the compelling discussions in educational studies (Schreiner, 2017). Grit focuses on human thinking and behavior stability, so that humans with great grit tend to not easily give up in facing a challenging problem. A high level of grit directs humans to attain their life purposes.

Students' grit development is affected by the provision of stimulus. Duckworth (2016) mentions four aspects affecting students' grit development, namely: interest, practice, purpose, and hope. Two studies carried out in Bandung, Indonesia (Andrian & Ilfiandra, 2020) and in Purwakarta, Indonesia (Rosalina, 2016), have investigated grit in the Indonesian education field. Both studies signify that students' grit can be different, build upon their area. These findings indicate that grit varies as a situational context function and carries a substantial effect on students' academic achievement and life.

Grit measurement on students' and education system (personal, social, academic, and career) is essential since it has a close correlation with the students' success. Therefore, investigation on students' grit is also substantial. Thus, this study seeks to investigate the level of high school students' grit in Bangka Belitung, Indonesia. The findings of this study are expected to be a reference for the policymakers in formulating policies that enhance students' potential and maintain students' educational character.

METHOD

As this present study was carried out during the Covid-19 pandemic, a survey method was used. This study uses various statements responded to by the respondents. The statements were distributed through WhatsApp group, Facebook group, and so forth. This study involved 770 high schools (senior high school/Islamic senior high school/vocational high school) students in Bangka Belitung, Indonesia. The respondents consisted of 244 male and 526 female students. A questionnaire developed using Google Form that had been examined by the relevant experts was used as an instrument to collect the data. The questionnaire consisted of ten statements to be responded to by the respondents following their beliefs and experience. This method was selected to ensure the genuineness of the obtained data. Those ten statements were presented with a five range of answers, as presented in Table 1.

The respondents were asked to respond to those statements following the provided ranges and their experience. Their answer was presented in the form of a graphic illustrating their grit level. The questioner's reliability and validity had been examined before it was handed out.

Table 1. The Category of Response Range

No	Statement	Category				
		Does not represent me at all	Does not represent me	Slightly represent me	Represent me	Exceedingly represent me
1	New ideas and activities divert my attention from the old ideas or activities	5	4	3	2	1
2	Failure does not discourage me since I am not easily give up	1	2	3	4	5
3	I frequently formulate a purpose, but ended up chasing different purposes	5	4	3	2	1
4	I am a hard worker	1	2	3	4	5
5	I can barely focuses on an activity that last in a longer period	5	4	3	2	1
6	I always finish what I have started	1	2	3	4	5
7	My interest changes in every year	5	4	3	2	1
8	I am a hard worker who have never given up	1	2	3	4	5
9	I have been obsessed into an idea or activity for a moment, then that interest just goes away	5	4	3	2	1
10	I have experienced a failure in resolving an important challenge	1	2	3	4	5

Validity

The validity test was carried out using the Rasch model through Winstep application, version 3.73. The test was completed following a number of validity tests in the Rasch model, consisting of (1) Outfit MNSQ score of $0.5 < \text{MNSQ} < 1.5$ to examine the respondents' answers consistency with the level of items' difficulty; (2) Outfit ZSTD score of $-2.0 < \text{ZSTD} < +2.0$ to describe how much (column of measurement results) is the outlier item which is not too difficult or easy; (3) Point Measure Correlation score of (Pt Measure Corr.) $0,4 < \text{Pt Measure Corr} < 0,85$ describing how good (SE), the uncomprehended item, item with different response, or ambiguous response; (4) Unidimensionality, to evaluate if the developed instrument is capable of measuring the elements intended to be measured, with prerequisite minimum unidimensionality of 20% (Sumintono & Widhiarso, 2014). The criteria of the instrument's validity are presented in Table 2.

Table 2. Category of the Construct Validity

Construct Validity	Criteria
> 60%	Very great
40-60%	Good
20-40%	Sufficient
< 20%	Poor
< 15%	Unexpected variance

Referring to the instrument validity criteria in the Rasch model, the instrument tried out results on 769 respondents suggest that all ten items are valid since they have fulfilled the outfit MNSQ value and PT measure Corr. Meanwhile, the raw variance data result is 34.9%, signifying that the prerequisite unidimensionality criteria of 20% have been met. The detailed results of the validity test are presented in Table 3. On Table 3, if $N < 300$, all criteria must be achieved (1), if $N \geq 300$, ZSTD is ignored (2).

Table 3. Summary and Interpretation of the Instrument Try Out Results Using Rasch Model

No. Item	Outfit		Pt. Mean Corr (0.4 < Pt. Corr < 0.85)	Interpretation			Decision		
	MNSQ (0.5 < MNSQ < 1.5)	ZSTD (-2.0 < ZSTD < 2.0)		MNSQ	ZSTD	Pt. Corr.	Adopted	Revised	Thrown away
P7	1.26	4.9	0.46	√	×	√	√		
P10	1.22	3.6	0.37	√	×	√	√		
P2	1.19	3.1	0.50	√	×	√	√		
P5	1.12	2.5	0.43	√	×	√	√		
P3	1.07	1.5	0.51	√	√	√	√		
P1	1.03	0.7	0.40	√	√	√	√		
P9	0.99	-0.2	0.53	√	√	√	√		
P6	0.87	-2.2	0.54	√	√	√	√		
P4	0.82	-3.4	0.51	√	×	√	√		
P8	0.70	-6.2	0.54	√	×	√	√		

Reliability

In the reliability test based on the Rasch model, the person reliability, item reliability, and Cronbach Alpha (item-person correlation) should be higher than (0.60). Meanwhile, the item-person grouping (separation) should be higher than 3.0 (Sumintono & Widhiarso, 2014). The complete and detailed results of the reliability test are presented in Table 4.

Table 4 shows a person reliability score of 0.63, categorized as sufficient respondents consistency with grouping (separation) of 1.30. Meanwhile, the obtained reliability score is 0.99, showing that the item consistency is in the exceptional category with a grouping (separation value) of 11.54. The obtained Cronbach Alpha of 0.65 represents the sufficient person-item interaction. The obtained data from the questionnaire were analyzed quantitatively, while its results were presented in a percentage and discussed descriptively.

Table 4. Summary of Reliability Test Results

	Mean Measure	Separation	Reliability	Alpha Cronbach
Person	0.22	1.30	0.63	0.65
Item	0.00	11.54	0.99	

RESULTS

After the questionnaire was disseminated, the obtained results were analyzed to investigate the students' level of grit.

New Ideas and Activities

Figure 1 illustrates that 11% of the total respondents are not distracted by new ideas or activities, while 30% of respondents admit that they frequently get diverted by new activities, neglecting the old activity. The remaining respondents describe that they get distracted by new ideas and activities, leaving their old activities. Therefore, most of the respondents are diverted by new ideas and activities, ignoring their old ideas.

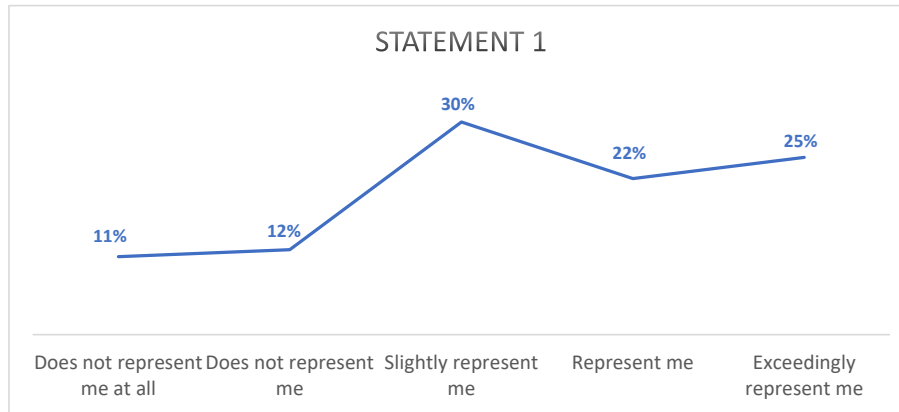


Figure 1. Respondents' Grit on Statement 1

Encountering Challenges

Figure 2 shows that 11% of respondents will not give up and keep struggling to achieve their purposes. Thirteen percent of the respondents convey that they generally will keep fighting even after experiencing failure. The other respondents explain that they will just give up if they face failures in attaining their purposes. The respondents' answers signify that the majority of them continue to fight even after encountering failures. Their passion deserves great appreciation in the form of support.

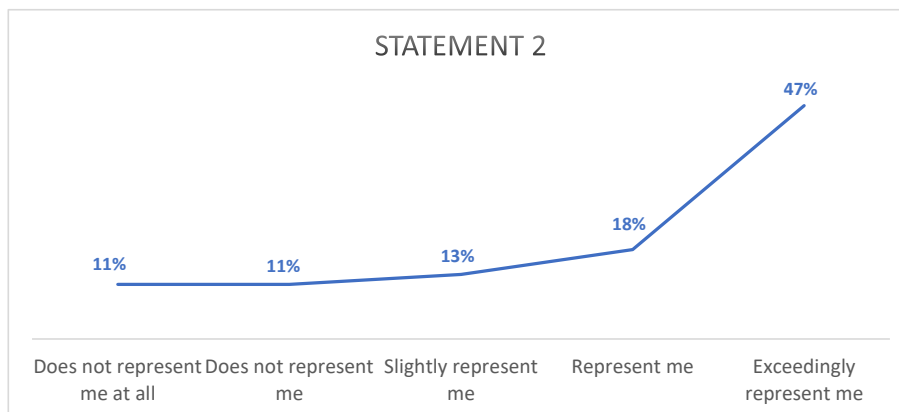


Figure 2. Respondents' Grit on Statement 2

Perseverance in Determining Purposes

The third statement concern the respondents' perseverance in establishing purposes. Figure 3 shows no significantly protruding answer. All categories attain a similar percentage, 23% of the respondents describe that they are not affected by new purposes once they have set their goals. Meanwhile, 13% of respondents (100 people) admit that they are not easily influenced by the new objective. Twenty percent of respondents state that sometimes they chase different purposes even if they have formulated another purpose before. The remaining respondents admit that they are easily affected by new purposes, even after they established their purposes. Therefore, the majority of respondents are easily influenced by new objectives even after they set their purposes, previously.

Persistence in Achieving Purposes

This statement seeks to disclose the respondents' attitude in completing tasks or chasing purposes. Figure 4 illustrates that more than half of the respondents work hard to achieve their purposes. One hundred seventy five respondents (23%) state that they sometimes work hard in attaining their goals, while the remaining respondents state that they generally do not work hard to complete their tasks in achieving their goals. Thus, most of the respondents strive hard to achieve their goals.

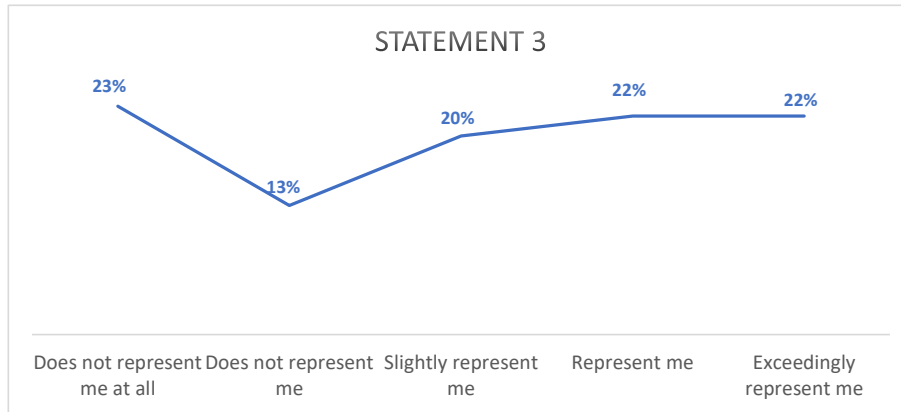


Figure 3. Respondents' Grit on Statement 3

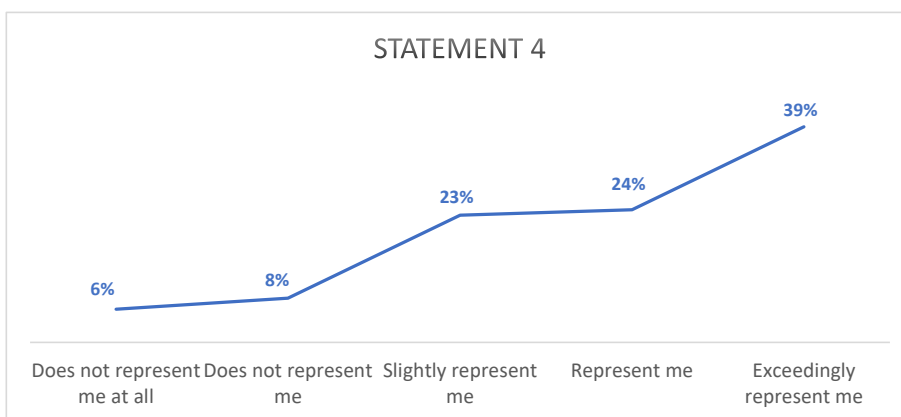


Figure 4. Respondents' Grit on Statement 4

Determination to Maintain Focus

The fifth question deals with respondents' determination to preserve their focus in carrying out an activity lasting for a long time. Figure 5 presents that 25% of respondents face a challenge in maintaining their focus and completing activities that take a relatively long time. Meanwhile, 20% of respondents commonly experience difficulties in completing tasks lasting for a long time and keeping their focus. Only 130 respondents (23%) admit rarely having the ability to retain focus in completing activities that require a long time. The remaining respondents stated that they are capable to preserve focus in doing an activity that requires a long time.

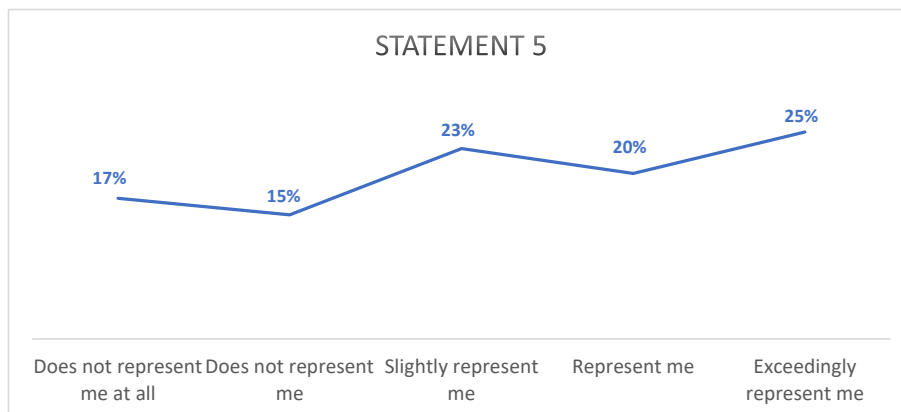


Figure 5. Respondents' Grit on Statement 5

Tenacity to Complete the Activities

The sixth statement relates to the respondents' behavior on completing an activity. As presented in Figure 6, more than half of the respondents state that they will always try finishing what they have started. One hundred twenty seven respondents (16%) admit that they sometimes finish the activity they have started. The remaining respondents answer that they generally do not complete what they have started. The obtained data on this statement suggest that majority of respondents attempt to finish the activities they have started.

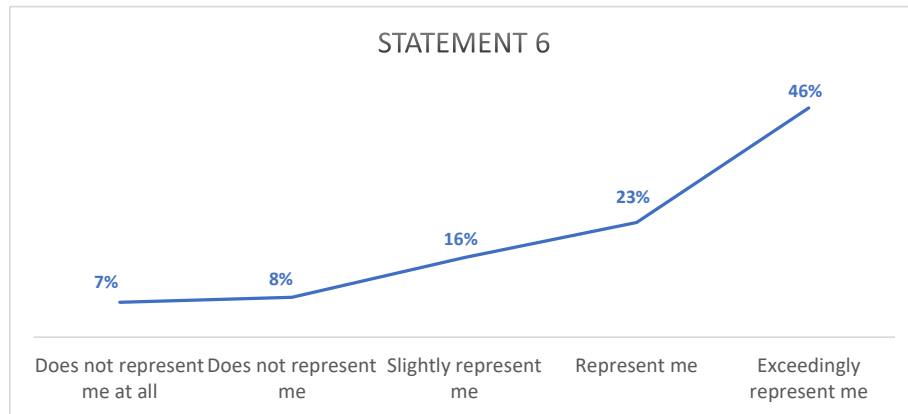


Figure 6. Respondents' Grit on Statement 6

Persistence of Interest

The seventh statement correlates with the respondents' interest. The data illustrated in Figure 7 shows that 150 respondents (19%) state that their interest has never changed every year. Eighty nine respondents (12%) mention that they always have the same interest every year, while the other 118 respondents (15%) state that their interest sometimes changes every year. One hundred forty five respondents (19%) admit that generally their interest change every year and the remaining 268 (35%) respondents answer that their interest always changes every year.

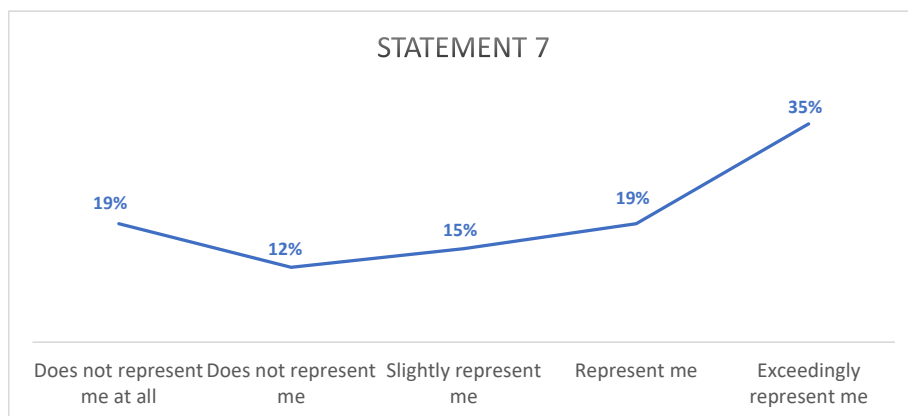


Figure 7. Respondents' Grit on Statement 7

Tenacity in Maintaining Attitudes

The eighth statement discusses the respondents' perseverance in keeping their behavior. Figure 8 illustrates more than half of the respondents are studious students persistent to attain their purposes. The other 214 respondents (26%) stated that they sometimes are a diligent and hard workers, while the remaining of the respondents are not persevering and easily give up.

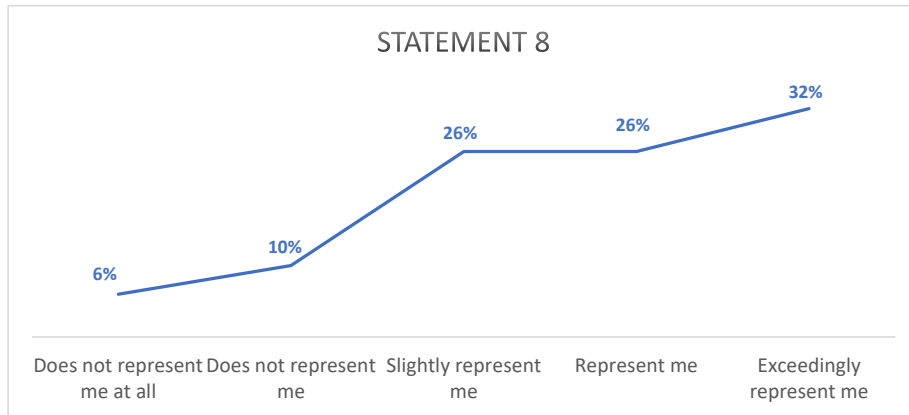


Figure 8. Respondents' Grit on Statement 8

Obsession

Statement ninth deals with respondents' obsession with certain activities. Figure 9 illustrates 163 respondents (21%) are always obsessed with a particular activity. One hundred and two respondents (13%) admit that they can get obsessed with certain activities for a long time. Meanwhile, 162 respondents (12%) admit that they have ever gotten obsessed with the activity, but the obsession only lasts for a short period. The remaining respondents explain that their obsession generally lasts in only a short period.

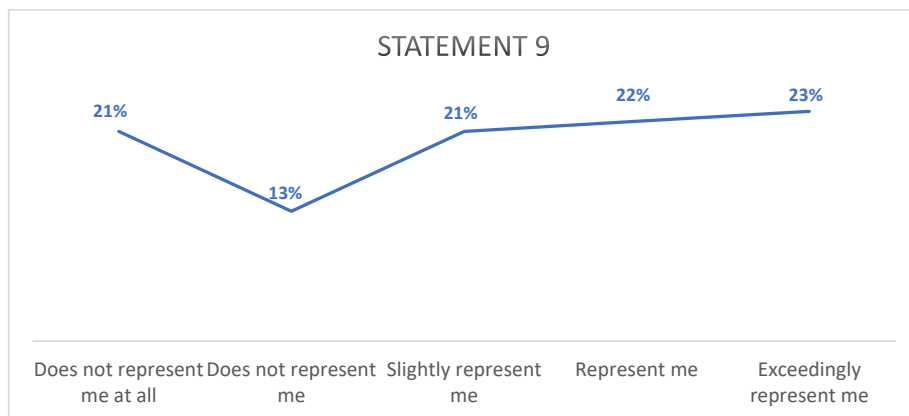


Figure 9. Respondents' Grit on Statement 9

Failures on Essential Challenges

The tenth statement deals with the respondents' failures in facing crucial challenges. Figure 10 illustrates 315 respondents (41%) who have ever experienced failures in important life issues. Twenty percent of respondents admit that they generally have experienced failures in handling essential

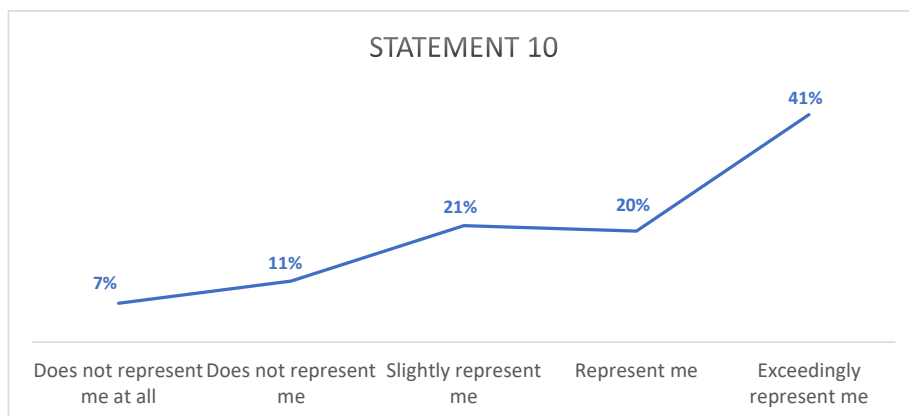


Figure 10. Respondents' Grit on Statement 10

challenges, while 164 respondents (21%) answered that they sometimes fail to resolve important life challenges. Meanwhile, the remaining respondents mention that they commonly face no failures in resolving crucial challenges.

DISCUSSION

Students' perseverance in resolving an issue becomes one of their key aspect in achieving future success. Higher perseverance in keeping their interest represents a higher opportunity to be successful in the future. The results of this study indicate that many students get easily distracted by new ideas or activities, ignoring their old activities. Maintaining purposes and ideas is the greatest challenge for humans during the appearance of new ideas that are perceived to be better (Davidson & Berninger, 2016; Montgomery & Chirrot, 2016; Ohler, 2018). Therefore, students have to attain the ability to keep their existing old ideas and activities, even when new ideas are coming up.

Persistent students will not easily give up even after facing failures. It places persistence to be an important characteristic for students because they will face greater challenges, primarily during the 4.0 industry and pandemic era. Chew and Cerbin (2021) describes that someone's ability to face challenges presents a higher opportunity to be successful. Thus, students have to work really hard in facing challenges to achieve their purposes. Robust determination and hard work are the keys for a human to achieve their purposes (Czesli & Murzi, 2018; Glueck, 2020; Güzeller & Özkal, 2013; Tokatligil et al., 2021).

In addition, the respondents face difficulties in maintaining their focus to complete an activity that requires a longer period. Activity that needs longer time to complete carries boredom, as Gary (2019) explains that the longer someone works on an activity, he will surely face boredom. However, the students have to prepare themselves and get used to dealing with this problem since they have to face a lot of problems that require a long time to complete (Mitchell et al., 2020). Therefore, students have to always finish every activity they have started.

Many respondents in this study also report changing interests every year. This interest transformation can be affected by various elements (Fulmer & Tulis, 2013; Hoff et al., 2018). One of the possible causes is the students' living environment. Lambie and Vaccaro (2011) describes that someone's surrounding environment may transform his interest. For instance, if the students live in an area where many people love sports activities, then their love for the sport will also grow. Thus, students' tenacity in keeping their interests is essential since it is a crucial element in achieving their life purposes and success (Tap et al., 2019).

Additionally, the respondents also admit that they have experienced obsession with a particular idea or activities. Even if obsession is normal for a human, but it is temporary, resulting in someone's change of interest. Obsession carries enthusiasm, but once the obsession is gone, then they will also no longer have the passion to complete the activities. Therefore, students are expected to maintain their interest in ideas or activities that they have started to attain success.

CONCLUSION

The findings confirm that the respondents' interests are easily distracted, while the majority of them have good tenacity. The 20% of respondents are observed to focus only on achieving the purposes that they have set, while 30% of respondents are persistent in struggling to achieve their success, but some of them face difficulties in maintaining focus in completing an activity that requires a long time to complete. Besides, most of the respondents finish the activities they have started, even if many of them experience changes of interest. Besides, only some respondents report that they are persevering and persistent in completing an activity. Also, more than one-third of the respondents admit that they do not give up even after facing failures.

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