



## Assessing the Relationship between Grit and Academic Resilience among Students

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### ABSTRACT

The purpose of the present study was to assess relationship between Grit and Academic Resilience among school students. The sample consisted of 120 school students with equal number of males and females (Male=60 & Female=60) from various private schools of Chandigarh, Ludhiana and Phagwara. Short Grit Scale, Grit- S (Duckworth & Quinn, 2009) and Motivation and Engagement Scale-High School (MES-HS) 12th edition (Martin, 2012) were used to gather data. It was hypothesized that there will be a positive correlation between self-belief, persistence and control components of Academic Resilience and Grit; and negative correlation between anxiety component of Academic Resilience and Grit. Males were hypothesized to score higher on Grit scale than females. Pearson Product Moment correlation was used to analyze the data and t-test was used to determine the gender differences. The results of the analysis showed a positive correlation between self-belief and persistence components of Academic Resilience and Grit and a negative correlation between control and anxiety components of Academic Resilience and Grit. T-test indicated no significant differences in Grit amongst male and female participants. The findings of the present study have very important implications for Indian education system. It paves a way for further exploration of Academic Resilience and Grit amongst school students and their contribution to student efficiency.

## 1. Introduction

Educators all over the world focus on leading their students towards success and achievements. It has become a challenge for teachers to identify what causes some students to succeed more in comparisons to others. Over the years, multitude factors like talent, practice, prerequisite knowledge, confidence, etc. have emerged pertaining to effect success of students. The basic focus of teachers is to enhance factors that alleviate student's learning process. For years, success and achievement has been attributed to cognitive factors such as intelligence or IQ, however with passing of time it was discovered that people with comparatively lower IQs were able to attain equal or in some cases even higher levels of success (Duckworth, Peterson, Matthews & Kelly, 2007). A diversion in research from cognitive traits lead the researches towards non cognitive traits leading to successful outcomes. Non-cognitive factors entailing to success further led researchers to look for traits that might help them predict future performance. A recently developed personality characteristic GRIT

is identified as a valid predictor of success (Robertson & Duckworth, 2014).

## 2. Grit

According to Angela Duckworth (2007), "Grit is passion and perseverance for very long term goals". In other words Grit is time, efforts and interest consistently invested towards a goal sustaining any monotony and plateaus in progress. With technological advancement and world wide access, education system is going through a big transition; Indian education system has persistently highlighted the importance of talent and intelligence for achievement in school. Personality trait Grit on the other hand has shown that successful individuals are not always the most talented or intelligent when compared to their competitors (Duckworth & Kelly, 2007).

Intellectual ability and talent are well known in educational and professional settings; Grit lays emphasis on the individual differences leading to success. It sways from the generic measures of

attainment. It explains how individuals with lower intellectual ability become more successful. It gives educators an opportunity and direction to help their students reach their full potential.

Theoretically, being part of the conscientiousness traits Grit is divided into two components a) consistency of interest and b) perseverance of effort over time (Bowman et al., 2015). Grit is separated from the big five trait of conscientiousness as Grit displays long-term commitment instead of intensity for a short-term (Duckworth & Quinn, 2009). The first component 'Consistency of Interest' refers to steady and consistent maintenance of interest of an individual for a goal over a long duration and the second component 'Perseverance of effort' refers to tendency of an individual to put their time and energy consistently into a long term goal. Grit as a personality trait has had its associations with various facets of success and has been correlated with higher education, academic performance, military retention and spelling bee success (Duckworth et al., 2011). However its association with resilience in education is yet to be explored in Indian setting.

### 3. Academic Resilience

Resilience, is defined as a tendency to recover from adversity or a depressing process. It allows people to optimistically look at overwhelming situations. It can be illustrated that resilient people can change for the better through complexity. It has a reactional character that affects a person to orient to all kinds of situations faced in their life. Psychological resiliency is characterized as an ability for bouncing back, focusing on the goals and success. Resilient people are able to succeed and learn something in mischance. They can easily keep up with the changes in life. Development of resilience as a character begins early in an individual and the platform offered to an individual that early in life is school.

Academic Resilience means accomplishing positive educational results or outcomes despite hardships. A.J. Martin (2002) defined, "Academic Resilience as students' ability to deal effectively with academic setbacks, stress, and study pressure". Academic Resilience is not just important to yield good valuable academic results; it is important for an individual to develop an attitude required in real world as a thriving and successful adult.

Failure at school is one of the major concerns for any community, as school is one of the basic tools for economic evolution and development of a society. Like most non-cognitive traits resilience is also not innate, it is rather developed and acquired by an individual through different situations and control of emotions (Trigueros, Padilla, Aguilar-Parra, Mercader, Lopez-Liria & Rocamora, 2020).

Over the years the competition and pressure has significantly increased for students, to have an access to their desirable career path (Verma, Sharma & Larson, 2002) and this competition is only increasing with ongoing development. Therefore, Academic Resilience is an asset that positively impacts students' educational and professional journey.

### 4. Review of Literature

Researches done with new found personality traits agree with GRIT being a positive influence and a reliable predictor of performance and persistence in educational context. Grit has proven to be a valid predictor of academic success over other traditionally measures of academic success (Strayhorn, 2014). In series of studies conducted Grit predicted successful academic outcomes in terms of higher GPA and retention in military (Duckworth, Peterson, Matthews & Kelly, 2007). Apart from predicting performance in academics, Grit has also proven to predict success in academically inclined competitions like National Spelling Bee (Duckworth & Quinn, 2009; Duckworth, Tsukayama, Kirby & Ericsson, 2011). Keeping Former academic achievement and ambitions under control Grit successfully helped predict academic achievement (Stayhorn, 2013). Factors such as gender have a major impact on personality development and academic outcomes of students across the globe. Significant gender differences were found amongst American engineering freshman students where females scored higher on Grit as compared to their male counterparts (Jaeger et al., 2010).

Angela Duckworth explains the difference between resilience and Grit as "not just having resilience in the face of failures, but also having deep commitments that you remain loyal to over many years" (Perkins-Gough, 2013). Resilience is often used and explained variedly by different people, it is a multidimensional concept and is used at various arenas of life. Resilience is one

quality often found commonly amongst successful people. Research in Academic Resilience states that it brings about positive educational outcomes despite of adversities present in the environment of a student (Wang, Haertel & Walberg, 1997). Despite being capable enough academic gains can be lost in absence of Academic Resilience in a student (Martin, 2002). In a study conducted on dental students it was found that students with high Grit and resilience achieve better GPA and class ranks (Montas, Rao, Atassi, Shapiro, Dean & Salama, 2020).

Grit and resilience together have been associated with mental wellbeing of students (Jin & Kim, 2017). On one hand resilience is stated as a predictor of well-being and on the other hand Grit has been associated with professional and academic success (Epstein & Krasner, 2013; Duckworth, Peterson, Matthews & Kelly, 2007). These traits are often used as aspects of a student's personality that helps them cope with health and study pressures (Waxman, Gray & Padron, 2003). Performance and mental well-being of at risk students can be understood and improved with the help of gaining insight into Grit and resilience (Stoffel & Cain, 2018). In a study conducted on nursing students it was found that there was a moderate correlation between the effort component of Grit and a comparatively higher correlation between the interest component of Grit and resilience (Meyer, Shatto, Kuljeerung, Nuccio, Bergen & Wilson, 2020). In comparison to Caucasian and Hispanic students, Asian students have reportedly lower scores of Grit and resilience (Montas, Rao, Atassi, Shapiro, Dean & Salama, 2020). If not directly, Grit and resilience have also indirectly been associated with aspects that determine educational success and mental well-being. In a study conducted on college students it was found that physical activity is positively associated with resilience and effort component of Grit and negatively related with interest component of Grit, where physical activity was implied as important factor to enhance determinants of student success (Dunston, Messina, Coelho, Christ, Waldrip, Vahk & Taylor, 2020).

## 5. Need of the Study

Grit and resilience are emerging concepts that are gaining popularity amongst researchers. They are often used together because of subtle difference in their definitions in spite of being different constructs. Grit

is a drive that doesn't particularly need failure for an individual to bounce back from, it is a commitment to stay engaged with a long term passion or goal on the other hand resilience is considered to be a quality of an individual to bounce back after a certain setback experienced in the journey of achievement of a long term goal. However, Grit and resilience both traits have been associated with success.

Similar to Grit, resilience is often looked at as an answer to the questions educators around the globe strive to solve; why some students perform better than others? why some students deal with pressure and failure better as compared to others? Why some students improve more and benefit more from school? In this present study we take the research forward by finding correlation between non cognitive traits Grit and Academic Resilience. Being distinctively unlike other personality traits, Grit has been related to yielding positive outcomes (Duckworth & Quinn 2009; Maddi et al., 2012; Strayhorn, 2014), but its relation with Academic Resilience is yet to be investigated.

In higher secondary education there is limited evidence to support relationship between Grit and Academic Resilience directing us to analyse the correlation between these two variables.

**Given this context the objectives and hypothesis of this study are as follows:**

**Objective 1:** To assess the relationship between Grit and Academic Resilience among school students

**Objective 2:** To determine whether male and females differ in their average Grit scores.

**Hypothesis 1:** There will be a positive correlation between Grit and Self-Belief, Persistence and Control components of Academic Resilience

**Hypothesis 2:** There will be a negative correlation between Grit and Anxiety component of Academic Resilience

**Hypothesis 3:** Males would score higher on Grits Scale than females.

## 6. Method

**SAMPLE** – The present study comprised a total of 120 school students with equal number of males and females (Male=60 & Female= 60). The age range of participants was 13-18 years studying in class 8 to 12 of various private schools of Chandigarh, Ludhiana and Phagwara.

Participants gave written informed consent and were also presented with a choice to withdraw from the study. Participants were also informed about the maintenance of confidentiality in the study i.e. Data would be strictly used for research purpose and would not be disclosed or linked to any student's personal information.

**DESIGN:** The present study was designed to analyse the relationship between non cognitive traits; Grit and Academic Resilience (self-belief, persistence, uncertain control and anxiety) amongst Indian high school students using correlational analysis. To determine gender difference amongst Grit scores t-test was used. A list of private senior secondary schools in Chandigarh, Ludhiana and Phagwara was made. The school principals were contacted and explained the purpose of the study. Those who agreed to allow data collection from their school were asked for a list of students studying in classes 8 to 12. From those lists the students were selected. The schools were approached again and the names of the selected students was shared. These students were approached in a group on the days scheduled by the schools. The schools made one in charge who looked after all the arrangement and communicated with the investigators. It took two sessions of approximately 40 minutes each for rapport building and administration of tools. Participants gave written informed consent and were also presented with choice to withdraw from the study.

**TOOLS USED:** Following tools were used in the present study

#### **Grit:**

Grit was measured using Short Grit Scale, Grit- S (Duckworth & Quinn, 2009). It is a self-reporting 8 item, 5 point Likert type scale (Grit-S). The Short Grit Scale (Grit-S; Duckworth & Quinn, 2009) is an instrument that measures dispositional tendency to endorse persistence for long-term goals. It has two dimensions; consistency of interests and perseverance of effort.

#### **Academic Resilience:**

To measure Academic Resilience, we used Motivation and engagement Scale High - School (MES-HS) 12<sup>th</sup> edition (Martin, 2002). It is based on Martin's Student motivation wheel which is divided into two factors; enhanced motivation i.e. boosters and

reduced motivation i.e. Mufflers and Guzzlers (Martin & Marsh, 2006). It measures 6 motivation and engagement boosters (Self-belief, Study management, Persistence, Learning focus, Planning and Value of school), three mufflers (Anxiety, Failure avoidance and Uncertain Control) and two guzzlers (Self-sabotage and Disengagement). It is a 44 item Likert scale ranging from 1-7 with eleven subscales comprising of 4 items each. High score on enhanced motivation and low score on reduced motivation determines resilience of a student in adversity. For the present study Four components (Self-belief, Persistence, Control and Anxiety) of this scale were used to assess Academic Resilience (Martin, 2003).

## 7. Results

In order to analyse the association between Grit and Academic Resilience, Pearson Product Moment correlation was applied. To determine gender differences in Grit, t-test was used. The results obtained were as follows:

**Table 1:** Correlation between Self-belief and Grit.

Correlations			
		GRIT	SELF BELIEF
GRIT	Pearson Correlation	1	.329**
	Sig. (2-tailed)		.000
	N	120	120
SELF BELIEF	Pearson Correlation	.329**	1
	Sig. (2-tailed)	.000	
	N	120	120

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 2:** Correlation between Persistence and Grit.

Correlations			
		GRIT	PERSISTENCE
GRIT	Pearson Correlation	1	.366**
	Sig. (2-tailed)		.000
	N	120	120
PERSISTENCE	Pearson Correlation	.366**	1
	Sig. (2-tailed)	.000	
	N	120	120

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 3:** Correlation between Control and Grit.

Correlations			
		GRIT	CONTROL
GRIT	Pearson Correlation	1	-.034
	Sig. (2-tailed)		.711
	N	120	120
CONTROL	Pearson Correlation	-.034	1
	Sig. (2-tailed)	.711	
	N	120	120

**Table 4:** Correlation between Anxiety and Grit.

Correlations			
		GRIT	ANXIETY
GRIT	Pearson Correlation	1	-.204*
	Sig. (2-tailed)		.025
	N	120	120
ANXIETY	Pearson Correlation	-.204*	1
	Sig. (2-tailed)	.025	
	N	120	120

\*. Correlation is significant at the 0.05 level (2 tailed).

Correlation matrix (Table: 1) depicts correlation between Grit and Self- Belief. Grit shares a positive correlation with Self-belief dimension of Academic Resilience. The correlation came out to be  $r = .329$  ( $p < 0.01$ ). Correlation matrix (Table: 2) depicts correlation between Grit and Persistence. Grit shares a positive correlation with Persistence dimension of Academic Resilience. The correlation came out to be  $r = .366$  ( $p < 0.01$ ). Correlation matrix (Table: 3) depicts correlation between Grit and Control. The correlation did not come out to be significant.

Correlation matrix (Table: 4) depicts correlation between Grit and Anxiety. Grit shares negative correlation with anxiety dimension of Academic Resilience. The correlation came out to be  $r = -.204$  ( $p < 0.05$ ).

**Table 5:** Mean, Standard Deviation and Standard error of Grit scores of Male and Female participants.

Group Statistics					
	GENDER	N	Mean	Std. Deviation	Std. Error Mean
GRIT	FEMALE	60	27.20	5.021	.648
	MALE	60	25.12	5.660	.731

**Table 6:** Independent Sample t test , Mean difference between Grit scores of male and female participants.

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
F								Lower	Upper	
GRIT	Equal variances assumed	1.078	.301	2.133	118	.035	2.083	.977	.149	4.018
	Equal variances not assumed			2.133	116.347	.035	2.083	.977	.149	4.018

**There were no Gender disparities in average Grit of students (Table: 6)** Objective 2 of the study was to determine whether there was any gender difference present in the average Grit scores of male and female

students. However, the findings of the independent t test show that there is insignificant and a very subtle difference in means of both groups. Though the difference was not significant, average mean score

of females turned out to be higher (Mean =27. 20) as compared to their male counterparts (Mean = 25.12).

## Discussion

The aim of present study was to further assess the relationship between Grit and Academic Resilience among school students. The current culture and definition of success directs individuals to make an impact and grow maximum in one's field. With expansion of career options to explore, it has become evident that importance of just academic results is becoming insignificant in determining one's success in future. Every nation ultimately dreams to adequately prepare their citizens to face challenges offered by the global market. The first step towards learning to overcome challenges in any society is considered to be a school, as it offers to mold the individual to his/her full potential. However, in this current continuously changing world it is becoming difficult to determine what suits best for the mantra of success offered by the education system.

The findings of the study indicate that most of the components of Academic Resilience are indeed significantly correlated with Grit and hypothesis 1 has been partially accepted. Grit significantly correlated with self belief, persistence and anxiety. These findings are well supported by the researchers conducted in the past (Meyer, Shatto, Kuljeerung, Nuccio, Bergen & Wilson, 2020). In a study, Dale, Sampers, Loo and Green (2018), found a positive relationship between belief in ability and Grit. Students who believe in themselves persist to stay with their goals. Evidence from a study conducted by Celik and Saricam (2018) found a positive correlation between internal locus of control and Grit. Students with high academic locus of control also tend to have high Grit. Those with internal locus of control usually have greater confidence and efficacy beliefs. They believe in their abilities and that encourages them to take challenging tasks and persist in those.

The findings of the study showed a negative correlation between Grit and anxiety and was supported by study conducted on university students (Ozan & Boyaci, 2018). The findings can be explained on the basis of researches that show that higher Grit is associated with greater mental well-being (Musumari

et al., 2008), This leads us to infer that having lower Grit may lead to more self doubt, fear of failure and high anxiety.

Hypothesis 3 has not been supported by the findings as there were no significant gender differences. The findings are endorsed by research conducted by Ali and Rahman (2012) where they found no significant difference between Grit of male and female subjects. The findings can also be justified on the basis of the nature of the sample. Since the participants were students of private schools, both boys and girls probably come from similar type of social backgrounds. The socialization practices followed in their homes are also probably similar. Hence, there was no significant gender difference in Grit scores.

## Implications

Grit and resilience tend to serve the same purpose in an individual's journey for attainment of goals, however there is a subtle difference between both interconnected higher order personality traits. On one hand where resilience is considered to be an ability to bounce back from unfavorable situations, Grit does not necessarily need a setback, it is considered to be a drive in an individual to stay with one goal for a longer duration of time. Numerous research studies use Grit and resilience in one capacity to determine academic success, but there is limited research to determine their internal relationship.

In conclusion this study was aimed to extend the research in Grit construct developed by Duckworth et al., (2007) in India. Findings of the present study has significant additional value to the current data on academic excellence and counselling.

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