
Say No to Setbacks: Grit & Growth Mindset Have Got Your Back

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Abstract: *Historically, a lot of emphasis has been laid on intellectual capacities of individuals as predictors of accomplishment (Mayer, 2011). With recent developments in psychological literature, several non-cognitive super-powers have emerged that offer equally promising prospects for success. The present study aims to assess two such non-cognitive traits, Grit and Growth Mindset, in students and teachers. It has two parts- the first involves school students, and the second school teachers. In the first part of the study, the relationship between Grit and Growth Mindset, and Grit and Academic Performance are explored. The sample consists of 262 middle and high school students from various schools in Delhi-NCR. Grit is assessed using Grit Scale (Duckworth, Peterson, Matthews and Kelly, 2007), and Growth Mindset using Implicit Theories of Intelligence Scale-General version (Dweck, 1999). Academic Performance is measured by taking the final exam scores of a sub sample of students for the last 2 years. The quantitative data is analysed using inferential statistics. Results show that Grit is a significant predictor of both Growth Mindset and Academic Achievement. The second part of the study explores Growth Mindset of teachers using Mindset Survey (Dweck & Henderson, 1989) and a set of qualitative questions prepared by the authors. The sample consists of 30 middle and high school teachers. The data is analysed using descriptive statistics and content analysis, for the quantitative and qualitative data respectively. Results for this study show that teachers' responses predominantly reflect Growth Mindset. Given the importance of Grit and Growth Mindset in the existing academic literature, this study has the potential to contribute towards understanding how significant these constructs are for students and teachers alike, and will add to the knowledge base of the field in the Indian context.*

Keywords: *Grit, Growth Mindset, Students, Teachers, Academics*

"What if I fall?"

"Oh, but, what if you fly?" - Erin Hanson

Throughout history, human beings have had the notion that achievement is always a product of one's intellectual abilities. We have always tried to weigh our successes and failures with the amount of intellectual ability that we possess. Psychologists, until a few decades back, were pre-occupied with all the various ways in which different levels of intelligence go on to shape people's lives differently (Tomprowski, Davis, Miller & Naglieri, 2008). In fact, Intelligence is the best-documented predictor of achievement (Gottfredson, 1997; Hartigan & Wigdor, 1989). This is not without good reason; a wide range of achievement outcomes are affected by IQ, including college and graduate school grade point average (GPA; Bridgeman, McCamley-Jenkins, & Ervin, 2000; Kuncel, Hezlett, & Ones, 2001). Yet while a lot of studies have emphasized on the supremacy of intellect, many early researches have also documented the vital role of non-cognitive traits in an individual's achievements in life. In his work with eminent scientists, judges, poets, writers, artists, statesmen, musicians, etc., Galton (1892) concluded that ability alone is not the indicator in any field but ability along with zeal and capacity for hard work accounts for achievement. Moreover, Terman after studying intellectually gifted children, found out that what is more predictive of success than IQ are several noncognitive traits including Perseverance, Self-Confidence, and Integration towards goals (Terman & Oden, 1947).

Non-cognitive traits cover a range of abilities such as conscientiousness, perseverance, and teamwork. These are critically important to student achievement, both in and beyond the classroom. Research shows that there are concrete benefits to non-cognitive traits in education and other important arenas in one's life. In the recent times, persistence and effort have attracted a lot of attention from researchers in psychology (Zimmerman, 1990). This has provided significant empirical support for the old adage "Practice makes a man perfect." Effort is hence now empirically proved to be an important ingredient in the recipe of accomplishments. The importance of persistence and hard work for achievement have particularly been highlighted by the new non-cognitive construct of Grit.

Grit, simply put, is the combination of passion and perseverance for long-term goals (Duckworth, Peterson, Matthews, & Kelly, 2007). Grit encompasses two facets- the perseverance of effort facet and the consistency of interest facet (Duckworth et al., 2007). Gritty individuals are distinguished, from the less gritty, by their propensity to maintain “effort and interest over years despite failure, adversity, and plateaus in progress” (Duckworth et al., 2007, p. 1088). What also makes gritty individuals stand out is their stamina that enables them to not change their trajectory amidst challenges and setbacks. Duckworth et al. (2007) proposed that individuals who possess a drive to tirelessly work through challenges, failures, and adversity to achieve set goals are uniquely positioned to reach higher achievements than others who lack similar stamina. Talent alone does not account for achievement but putting effort and making that talent thrive does. Grit has been summarized in the following psychological formula (Duckworth, 2016);

-Talent x effort- Skill

-Skill x Effort- Achievement

Academic achievement is important because it opens doors for future prospects in life. Given the essence of Grit, it would appear that it serves an important role academic achievement. Duckworth et al. (2007) conducted some of the earliest studies depicting relationship between grit and academic achievement. In one study with undergraduate students, a positive and significant correlation was established between grit scores and GPAs of students (Duckworth et al., 2007). Eskreis-Winkler, Shulman, Beal & Duckworth (2014) concluded that Grit was strongly correlated with both academic conscientiousness and school motivation in high school; and graduation was predicted by Grit as well as academic conscientiousness, school motivation, and standardized achievement test scores. Chang (2014) declared that scores on perseverance sub-scale of grit-S (shortened version of the Grit Questionnaire) significantly predict first year GPA of college students. Hence, it can be said that Grit appears to play a vital role in academic achievement.

To summarize, Grit is passion and perseverance for long- term goals, and not letting setbacks and challenges overpower us. A somewhat related non-cognitive trait, or another non-cognitive superpower so to say, is Growth Mindset. Growth Mindset fosters the belief that setbacks and challenges are means of learning. Both Grit and Growth Mindset believe in the superiority of effort.

Carol Dweck (2006) popularized the idea of Mindset and proposed that our mindset may take either of two forms. One is Fixed Mindset- the belief that our abilities are carved out in stone, these are something that we are born with and that remain fixed and cannot be changed or improved. People with this mindset are in a constant hurry to prove themselves and fear criticism, even if it is healthy, and rejection in their work. Whereas, people with Growth Mindset hold the belief that their abilities are not fixed and can be changed and improved with effort, time, and strategies that they use.

People may differ in their current skill levels, but people with a Growth Mindset believe that their underlying ability can be improved (Dweck, 1999). Growth Mindset fosters the power of learning from mistakes and not fearing setbacks. As in the words of Dweck (2006), “*Becoming is better than being*”. Being here connotes the stagnant Fixed Mindset and Becoming refers to learning from the process, and thereby the Growth Mindset. Dweck (2006) has shown that Growth Mindset can do wonders for people. It is one of the key factors in academic achievement as evidenced by many studies (e.g. Blackwell, Trzesniewski, and Dweck, 2007; Grant and Dweck, 2003). Interventions done to inculcate or increase Growth Mindset in students have been shown to be highly successful when it comes to improvement in indicators of academic success. Aronson, Fried and Good (2002) looked at the impact of a Growth Mindset intervention on college students in which it was shown that the intervention led to a clear gain in achievement. Blackwell et al. (2007) performed a Growth Mindset intervention with minority students in the USA (African American and Latino) making the transition to 7th grade. They concluded that this intervention had a significant positive impact on their classroom achievement.

The role of parents and teachers cannot be overstated in shaping the Mindset of a child. They play a vital role in the holistic development of the child. Given the primary role of teachers in a child’s life, their Mindset certainly plays a very important part of how the child perceives himself and his setbacks and challenges. A Fixed-minded teacher

overly emphasizes intelligence, fixed traits and perfection, and views her students from that lens. Those students that fail to fit into her mould of an intelligent/talented/good student end up being the victims of Fixed-minded approach. In fact, research shows that praising children's intelligence actually harms their motivation and performance (Henderlong, & Lepper, 2002); Koestner, Zuckerman, and Koestner, 1987). Contradictory to this, a Growth-minded teacher values commitment and effort. She holds the belief that abilities in students can be inculcated and improved through hard work and dedication. While keeping up this belief, these teachers strengthen the idea that there is no magical formula to achieve success but the magic of commitment and dedication that helps through the journey. She helps the students set high standards for themselves and provides a nurturing environment to achieve those high standards. "Great teachers believe in the growth of the intellect and talent, and they are fascinated with the process of learning" (Dweck, 2006).

The present study

While there is very limited psychological literature on the two non-cognitive constructs aforementioned in India, the present study aims to fill that gap and study Grit and Growth Mindset amongst school students and school teachers in the Indian context. The study consists of two parts- first involves school students and the second involves school teachers. In the first part of the study, the relationship between Grit and Growth Mindset, and Grit and Academic Performance are explored in students. Both Grit and Growth Mindset are assessed using standardized psychological questionnaires. Grit is assessed using Grit Scale (Duckworth, Peterson, Matthews and Kelly, 2007) and Growth Mindset using Implicit Theories of Intelligence Scale-General version (Dweck, 1999). Academic Performance is measured by taking the final exam scores of past two years. The second part involving school teachers explores Growth Mindset using a Mindset Survey (Dweck and Henderson, 1989) and a set of qualitative questions prepared by the authors.

This paper explores the significance of Grit and Growth Mindset in students and teachers alike and how they can contribute to their development.

STUDY 1

METHOD

Participants. For the first part of the study involving students, the sample consists of 262 middle and high school students from various schools in Delhi-NCR. The participants were recruited through convenience sampling and informed consent was taken.

Measures. Grit was assessed using *Grit Scale* developed by Duckworth, Peterson, Matthews and Kelly, (2007). The scale consisted of 12-items divided into two parts-Consistency of Effort and Perseverance of Effort. Scale demonstrated high internal consistency (α .85) for the overall scale and for each factor (Consistency of Interests, α .84; Perseverance of Effort, α .78). Items were rated on a 5-point scale from 1 = not at all like me to 5 = very much like me. Items in the Perseverance of Effort are reverse scored. The maximum score on this scale is 5 for extremely gritty. The lowest score on this scale is 1 for not at all gritty. Neither factor is consistently more predictive of outcomes than the other, and in most cases, the two together are more predictive than either alone. Therefore, total scores from the full 12-item scale were used as measures of Grit.

Implicit Theories of Intelligence (General Scale) was used to measure students' Growth Mindset using the 8-item Implicit Theories of Intelligence Scale (Dweck, 1999). The complete scale contained 4 incremental and 4 entity theory items that assess general beliefs about the fixedness vs. malleability of intelligence. The four incremental scale items were reverse scored and all eight items were summed with higher scores indicating greater endorsement of entity beliefs about intelligence. The scale has good internal consistency (α = .82 to .97) and test-retest reliabilities, 2 weeks (α = .80 to .82, Dweck, Chiu & Hong, 1995). The scale has also demonstrated good construct validity with scores predicting theoretically meaningful relationships with a range of variables (Dweck et al., 1995). The scale indicates good discriminant validity against a range of potentially confounding variables (Dweck et al., 1995).

Academic achievement records were obtained from the school administration and final exam scores of the past 2 years were considered for this study.

Procedure. The participants were presented with the questionnaires and they took 20-30 minutes to complete it. The measures were presented in the following order: Grit Scale, Implicit Theory of Intelligence Scale (General version). The participants were informed that their participation is voluntary and that the responses would be kept confidential. They were also informed that there are no right or wrong answers. The data obtained was then analysed. The quantitative data was analysed using inferential statistics using SPSS.

RESULTS

The data were analysed using SPSS (version 21) and Pearson’s correlation coefficient was computed to examine the relationship between Grit & Growth Mindset and Grit & Academic Achievement. Further, simple linear regression analysis was carried out to investigate the relationship between Grit & Growth Mindset and Grit & Academic Achievement.

Table 1 shows values for Pearson’s correlation coefficient and Table 2 shows values for simple regression analysis.

Table 1: Pearson’s Correlation Coefficient for Grit, Growth Mindset and Academic Achievement

Variables	Grit	Growth Mindset	Academic Achievement
Grit	1	.478**	.699**
Growth Mindset	.478**	1	-
Academic Achievement	.699**	-	1

**Correlation is significant at .01 level

Table 2: Simple Regression Analysis

Predictor	Criterion	R	R ²	Adjusted R square	F	Sig.
Grit	Growth Mindset	.478	.228	.225	76.835	.000
	Academic Achievement	.699	.489	.475	35.384	.000

DISCUSSION

The study was undertaken to explore the relationship between Grit and Growth Mindset. The sample comprised of 262 middle and high school students from various schools in Delhi-NCR. It can be said that there is a significant relationship between Grit and Growth Mindset.

Challenges and setbacks are inevitable. A gritty person is more likely to *plod on* and persevere when faced with challenging tasks or events. What makes that gritty person persevere is his/her perception of that challenge- the mindset he/she carries with him. This mindset is the Growth Mindset that is conveying to that individual ‘Challenges shall not discourage me, they should not serve as an impediment in achieving my goal, these challenges are helping me learn and grow and hence, I will persevere’. Grit is an extremely important asset when we have to achieve something significant in our lives where Growth Mindset acts like a facilitator. It can be said that Grit is the outcome and Growth Mindset is the means through which that outcome can be obtained.

Gritty individuals are hopeful about the fact that they can do it- no matter how difficult the task is. They tend to not abandon the tasks in the face of adversities. This is again coming from their Mindset because this mindset, which is the Growth Mindset, is telling them to embrace these adversities. *These adversities are the stepping stones to achieving the goals.* The importance of Grit and Growth Mindset is evident in the existing literature (Duckworth et al., 2007; Dweck, 2006). Grit is not only about persevering but having a deep sense of commitment towards one’s goals. This commitment gives one a sense of responsibility towards our goals. Then come what may, gritty individuals will not leave their trajectory of achieving goals because they have a desire to learn and develop from whatever comes in their pathway of performance. Hence, Grit and Growth Mindset serve as fuels that ignite individuals to keep going and not getting discouraged by adversities and it can be said that these non-cognitive superpowers are complementary to each other!

Another aspect of the same study aimed to explore the relationship between Grit and Academic Achievement. A sub-sample was drawn from the larger sample of 262 students. This sub-sample comprised of 40 students. A statistically significant relationship was found between Grit and Academic Achievement.

Academic achievement is important because it helps individuals to fulfil their potential. Certainly, Grit has been found to play an important facilitator in academic achievement. While talent is important to an extent, it works more efficiently when an individual possesses Grit. Effort and stamina are required to accomplish anything worthwhile in life. The essence of Grit conveys the fact that effort and practice are important in attaining academic success (Duckworth et al., 2007). The mechanisms that help to attain educational attainment account for love of learning, resilience, and a deep sense of commitment to one's goals.

Grit is all about running the race we committed to rather than choosing a different, new pursuit, after stumbling and losing ground. It is easy to give up in the face of setbacks. But when one possesses Grit, it comes to the rescue. It picks us up and takes us to the finish line of the race. An individual's course of action in achieving their goals must reflect deep commitment to those goals and courage that helps us rise above and beyond the adversities. It is the fearless attitude that the individual possesses that helps him/her take risks. Gritty individuals do not fear risks. They are more likely to view every challenging task and event as an adventure and something that offers learning. Grit helps students persist in the face of adversity (Hochanadel & Finamore, 2015), thereby, serving as an important factor in their academic achievement.

However, this study is not without its limitations. It utilizes self-report measures which has a major disadvantage of social desirability. Further, the scales have been developed in the western context and they are in English.

STUDY 2

METHOD

Participants. The sample consisted of 30 school teachers from various schools in Delhi-NCR. The participants were recruited through convenience sampling and their consent was taken before they agreed to be a part of the study.

Measures. Growth Mindset was assessed using the *Mindset Survey* developed by Dweck & Henderson (1989). The survey consisted of 3-items with a scale ranging from 1 (strongly disagree) to 6 (strongly agree). This scale has high internal reliability (alpha ranging from .94-.98) and high test-retest reliability ($r = .80$). The items were reverse scored. As noted by Hong et al. (1999), "only three items are included because the items are intended to have the same meaning and continued repetition of the same idea becomes somewhat bizarre and tedious to the respondents" (p.590)

A set of qualitative questions prepared by the authors were also administered to assess Growth Mindset (Sample items: 'Who is a good teacher?', 'Who is a good student?', and 'Do you think you as a teacher have an influence on the intellectual capacity of your students? Give reasons for your answers.')

Procedure. The participants were administered the questionnaires online. They were informed that their participation is voluntary and the responses would be kept confidential. They were also informed that there are no right or wrong answers. The data obtained was then analysed. The quantitative data was analysed using descriptive statistics using SPSS and the qualitative data was analysed using Content Analysis.

RESULTS

This study was aimed to explore the Growth Mindset in school teachers using a Mindset Survey. For the quantitative data gathered, descriptive statistics was run and Table 3 shows the mode values for the responses on each item. Mode was calculated to find out the most frequently occurring number in the responses of each item. For item one, which says 'You have a certain amount of intelligence and you cannot really do much to change it', response number 2 has the highest number of occurrences ('Disagree'). For item two, which says 'Your intelligence is something about you that you cannot change very much', response number 3 has the highest number of occurrences ('Sort of Disagree'). For item number three, which says 'You can learn new things but you cannot change your basic intelligence', item number 3 ('Sort of Disagree') has the highest number of occurrences.

DISCUSSION

This study was undertaken to explore Growth Mindset in school teachers. 30 school teachers from various schools in Delhi-NCR formed the sample and were administered Mindset Survey and a set of qualitative questions. It can be argued that the teachers comprising the sample seem to possess Growth Mindset. The teachers appear to believe that intelligence of an individual is not static and can be developed, changed and improved. As is evident in their responses for a good student, they believe that a good student has a yearning for learning, is curious, is brave to accept his flaws, and is open minded, committed, motivated, and hard working. These responses reflect the essence of Growth Mindset. It is exciting to know that these teachers believe in commitment, perseverance and love of learning as important facets of a good student. Similarly, they believe a good teacher is someone who caters to individual needs, is nurturing, passionate and zealous.

Mindset is highly communicable. While possessing Growth Mindset, teachers can make their students believe in the magic of Growth Mindset. The kind of messages that teachers convey through their words and actions has a significant impact on students. When teachers send messages about growth and the process of learning through effort, they are likely to generate a growth minded approach in the students. When they view their students' intelligence as a fixed entity, they are then harping on the fixed mindset that is very likely to blur students' perceptions on growth, learning, development and commitment. Telling students that they are smart generates a fixed mindset. When faced with challenges these students are fearful of performing poorly and thus underplay the role of challenges. Mistakes are likely to dull their image of a smart student. Students who are placed in top set or top track classes, frequently suffer from the idea that they are smart and need to maintain the image of smartness, leading to fear of challenge and inability to cope with failure (Boaler, 1997). Appreciating the fact that mistakes are not bad but they foster growth and learning strengthens Growth Mindset. Mistakes should be viewed as resources that should be capitalized in the best manner. The role of a teacher and her Growth Mindset thus becomes extremely important here.

Growth Mindset in teachers is thus an asset for the education system in particular and the society in general. It is a teacher's responsibility to create Growth Mindset friendly environment where students feel safe from judgement and where teachers believe in their potential to grow. It is imperative that teachers act as collaborators in the learning process of their students where they thrive, grow and develop.

IMPLICATIONS

Given the significance of Grit and Growth Mindset, this study has implications for students and teachers. It shall help them build confidence, set their goals systematically, and achieve them.

CONCLUSION

To summarize, recognizing the role of effort in achievement is nothing new; in every culture, hard work is given due importance and in many is hailed as an important virtue. Yet in every culture, we also find that the idea of talent is very compelling. The mystical idea of success being the result of mostly people being naturally good at something is ubiquitous. Though we may realize that perseverance is crucial for achievement, it's easy to get blinded by the brilliance of 'talent' and go down the slippery slope of attributing our failures to lack of talent.

"The separation of talent and skill is one of the greatest misunderstood concepts for people who are trying to excel, who have dreams, who want to do things. Talent you have naturally. Skill is only developed by hours and hours and hours of beating on your craft" (Smith, as quoted in Grit: Power of Passion and Perseverance by Duckworth).

Through this paper, the authors wish to make a call for fighting self-doubt through Grit and Growth Mindset. We propose that students need to be taught as part of their curriculum how to increase academic tenacity, and we propose that the chief way to accomplish that would be to teach students two things: that intelligence is not fixed, and that there's a critical difference between talent and skill. To quote the formula given by Grit pioneer Angela Duckworth (2016),

$$\text{Talent} \times \text{effort} = \text{Skill}$$

$$\text{Skill} \times \text{Effort} = \text{Achievement}$$

It's easy to question our capabilities and give up because we don't seem to have enough talent, but if we understand that no achievement comes out of talent alone, and that talent is malleable, perhaps we would have a better chance of staying the course. The belief that a certain amount of energy, intention and intensity can be enough without extraordinary inborn talent can be life-affirming for many struggling with self-doubt. Thus, Grit and Growth Mindset can come together to transform lives if we let them. To quote Duckworth (2016), "Greatness is doable. Greatness is many, many individual feats, and each of them is doable."

"What if I fall?"

"Oh, but, what if you fly?" - Erin Hanson

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