WHETHER GRIT AND ACADEMIC ACHIEVEMENT ARE RELATED: AN EXPLORATION AT SECONDARY SCHOOL LEVEL IN KHYBER PAKHTUNKHWA, PAKISTAN

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Abstract

This descriptive research study aimed to determine the relationship between students' grit and their academic achievement at the secondary school level in, Pakistan. Using the multi-stage random sampling procedure, a sample of 798 students was chosen, of whom 400 were boys and 398 were girls. The data was collected using the Grit-O scale, created by Duckworth et al. (2007) while academic achievement score was obtained from the SSC Annual Examination by BISE Peshawar. The majority of the students displayed a high degree of grit. It was revealed that Students' grit showed a significant and strong positive linear association with students' achievement. Similarly, the students' grit significantly, strongly predicted and favorably contributed to students' achievement. There were some gender differences also found in the study and girl students had a higher degree of grit as compared to boy students. Teachers should use strategies to improve students' grit for better academic achievement. Further, personalized strategies and interventions should be developed to address the unique needs of all the students regardless of gender.

Keywords: Grit, Achievement, Secondary School level, Khyber Pakhtunkhwa Pakistan

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Introduction

The main concern of the article was to find out the relationship between students' grit and academic achievement. Educationists and policymakers have always given a high priority to getting excellent student achievement. Researchers in the field of education are trying to discover factors that affect students' success. For example, Gottfried, et al. (2009) have stressed probing the causes influencing secondary school students' academic performance because at this stage of life, they frame their course of study for the future. Stark, Noel, and McFarland, as cited in Tiandem-Adamou (2019) argued that secondary school years are vital for learners because at this stage they move from childhood to adulthood. Lack of enthusiasm to learn is one of the biggest challenges at this time, causing numerous learners to fall behind or drop out of school.

School leadership characteristics, pedagogical and socioeconomic may explain a significant 90.1% of academic achievement (Atchia, & Chinapah, 2019). Ullah and Almani (2022) similarly noted that inadequate classrooms, a lack of teaching and reading resources, a learning atmosphere, inexperienced teachers, poor school management, and a shortage of teachers are significant issues that affect students' performance. Academic achievement is measured by complex scores that depend on a number of criteria, including personal characteristics and personality qualities (Batool, 2019).

Interestingly, although different characteristics have been connected with students' achievement, studies on internal factors like grit remained rare in the country. This presented a contextual gap in conducting the study since the population with its many sociocultural and linguistic backgrounds has not gained ample attention in the past, so as to advance the knowledge already existing on grit.

Grit is the capacity to overcome obstacles with fervor and persistence in order to accomplish a long-term objective. Those with grit are determined to see their objectives through to completion (Saleh, Ashari, Kosnin, Rahmani, & Zainudin, 2019). Grit is the capacity to overcome obstacles with passion and perseverance in order to accomplish a long-term objective. Gritty individuals are tenacious in ensuring that their objectives are met (Duckworth, Peterson, Matthews, and Kelly, 2007).

According to Gross, Balestra, and Gellner (2018), grit and intelligence play equal roles in achieving goals and succeeding in life. Higher-grit students do better academically and are more likely to finish high school and pursue further education in college. Some of the main reasons that made it necessary to conduct the study in Pakistan were the ongoing efforts by the government and society to provide high-quality education, the conflicting results of earlier research, and the fact that the previous study had not been done from the perspective of a specific geographic location or school culture. It is argued that by using the knowledge of grit, schools can help learners in molding their behavior to enhance their academic achievement. Knowledge about students' grit can benefit schools and students amid various academic struggles.

Objective and Hypothesis

This study set out to investigate the relationship of student's Grit and academic achievement. It was hypothesized that:

H_{01}: There is no significant difference in students' grit with regard to gender.

H_{04}: There is no significant relationship between students' grit and their academic achievement.

Literature Review

This section explains achievement and grit. The review looks at the possible connection between the study variable and academic achievement and gives background information on grit research.

Concept of Grit

Duckworth et al. (2007) presented the concept of grit in academic discourse, characterizing it as an individual's firm perseverance and passion towards a long-term goal. Grittier learners work harder and more persistently, do not let failures deter them from their goals, and are held to higher standards of performance. Less-gritted learners are not as driven or persistent, are more easily diverted by new perceptions, are not attentive to long-term objectives or projects, lack motivation, and are not held to higher standards of performance (Bazelais, Lemay, & Doleck, 2016).

Additionally, according to Keown (2017), "a person with grit may have conscientiousness, a component of achievement." Despite the failure, grit requires ongoing attention to detail, perseverance, goals, criticism, and stagnation. Learners who consistently strive toward their long-term goals are likely to experience contentment, motivation, and fulfillment, but it is still necessary to have motivation (Khan, & Khan, 2017). This is due to the fact that they would not be continuously striving to meet their goals if they were unhappy or dissatisfied. According to Jang (2018), when all other factors are equal, grit—a potent non-cognitive skill—determines people's success. Grit's theoretical foundation is found within the confines of personality theory. Furthermore, according to Lacera (2019), grit is a quality shared by those who do not allow obstacles to deter them from accomplishing their objectives and is the willingness to work hard toward a goal even if it takes years to achieve. These individuals typically have prosperous lives and possess a high level of grit are passionate about what they do, will stop at nothing to accomplish a goal, and don't give up. Moreover, grit has been identified by Asavisanu and Vinitwatanakhun (2019) as a crucial element of success and excellence held by top achievers possess in addition to cognitive or intellect skills. Learners having grit may withstand persistent goals and interests over a long period of time and accomplish what work they start. On the basis of the literature reviewed above, it is concluded that grit influences academic achievement in some way or another and grit offers students motivation to persist through difficulties. Students with grit can overcome hurdles and recognize their goals, while students with less grit may give up, be disinterested, or find other activities.

Grit and Achievement

This section of the study looks at the relationship—both positive and negative—between grit and academic success, accounting for a number of factors such as socioeconomic status, gender, and ethnicity. Grit emphasizes a long-term goal and desire and has an inverse relationship with the number of employment transitions. Students exhibiting strong grit outperformed their contemporaries, and their grit was predictive of finishing courses (Duckworth & Quinn 2009). In the same way, Eskreis-Winkler et al. (2014) found that, after adjusting for individual differences, situational and demographic variables, and standardized achievement test results, grit significantly predicted graduation and had an association with academic conscientiousness and school motivation. Hardworking students were less likely to drop out of school and were more likely to finish their studies. Furthermore, Blanchard (2018) proposed that grit, in addition to

other factors, was crucial to students completing their programs because it needed them to stay focused and persevere through difficult assignments. In contrast, grit was found to have a low but substantial link with other educational outcomes by Ivcevic and Brackett (2014), although not significantly correlated with GPA or course completion. Other academic results that were predicted by emotional control skills and conscientiousness were not significantly influenced by grit. Aside from personality, grit did not account for variation in academic results. Likewise, Washington (2016) found no connection between students' grit and their GPA or rate of advancement. Additionally, it was revealed that for Hispanic/Latino and African-American learners, there was little to no association between grit and achievement. but a high and favorable association for White learners.

Conversely, research by Wolf and Jia (2015), Lee and Sohn (2017), and McFarlane (2018) showed a connection between grit and higher grades, emphasizing the value of intentional practice and punctuality. Likewise, in the context of medical school, Miller-Matero, Martinez, MacLean, Yaremchuk, and Ko (2018) investigated the relationship between improved academic achievement and higher levels of grit; however, Murphy (2019) exposed no obvious link between GPA and grit of undergraduate students.

The sub-components of grit were examined by Jang (2018), Credé, Tynan, and Harms (2016) as well as Akos and Kretchmar (2017), who emphasized the significance of persistence in predicting academic achievement. More support for the idea that grit alone can predict exceptional achievement came from Pate et al. (2017). Yamashita (2018) revealed diverse findings regarding the association between grit and achievement in different courses, assigning these differences to extrinsic and instructional factors. Further, West et al. (2016) and Tiandem-Adamou (2019) supported the use of grit in education by providing evidence of grit's positive link with test scores and academic achievement. Mamah et al. (2022) and Tang, Wang, Parada, and Salmela-Aro (2021) maintained the connection between grit and academic success while highlighting the importance of commitment to academic goals. Conversely, Salud (2022) emphasized the impact of several variables and presented divergent conclusions about the connection between perseverance and scholastic success.

Additionally, Temel, Temel, and Çevik Kansu's (2023) research demonstrated a strong and positive correlation between students' achievement and grit. The study also revealed that there were significant differences in grit with respect to the father's socioeconomic situation, gender, preschool education, and level of education. When comparing male and female students, the grit levels of the former were higher. This section provided a comprehensive overview of the research on grit and its correlation with academic success, emphasizing both the variable nature of its effects across different populations and contexts as well as its potential as a predictor of success. When discussing the role that grit plays in education, it is important to consider the different outcomes and factors that influence this relationship.

Research Design

The goal of the descriptive correlational research study, which used a quantitative research methodology, was to determine the connection between students' academic success and grit. District Peshawar and District Charsadda, two districts in Khyber Pakhtunkhwa, were chosen as the study's population centers. There were 199 Government Boys' and 135 Government Girls'

secondary schools in these two districts, with a total enrollment of 157297 (62727 girl students and 94570 boy students). Using a multi-stage random sampling procedure, 798 students—400 boys and 398 girls—were chosen as a sample. The data was collected using the Grit-O scale, which was created by Duckworth, Peterson, Matthews, and Kelly (2007) and uses a 5-point Likert scale with 1 denoting strongly disagree and 5 denoting strongly agree. Six of the twelve items on the scale indicate consistency of interests, and the remaining six indicate persistence of effort. Reverse coding was used to bring negative statements Nos. 2, 3, 5, 7, 8, and 11 to align them with the other items.

After adding up all of the item scores, the total was divided by 12. The 12-item total score serves as a proxy for grit. The greatest number on the scale,05, indicates a high degree of grit, and the lowest,01, indicates a low degree of grit. The scale was translated into Urdu which was given along with the English statements. The results of the Secondary School Certificate (SSC) Annual Examination 2021, which was administered by the Boards of Intermediate and Secondary Education Peshawar, were used to calculate the achievement scores of the students.

Analysis and Interpretation of Data

Testing of Hypothesis 1

H_{01}: There is no significant difference in students' grit with regard to gender.

Table 1:

Comparing the grit of students by gender (males = 397, girls = 383,), N = 780.

	Boys		Girls		Independent Sample T-Test statistics			
Variable	**M**	**SD**	**M**	**SD**	**t**	**Df**	**M. Diff.**	**Sig.**
Students' Grit	3.41	1.01	3.63	0.90	-3.255	778	-0.22	.001

Sig. < .05

Table 1 demonstrates that there was a statistically significant mean difference (-0.22) in grit responses between male and female students (M=3.63) and girls (M=3.41) (t=-3.255, Sig. =.001). It made clear that male students' grit differed from that of female students.

Table 2

Frequency and percentage of grit among students by gender, N = 780.

		Boy (f_M=397)		Girl (f_F=383)	
Variable	**Level**	**f**	**%**	**F**	**%**
Students' Grit	Low	54	13.6	62	16.2
	Medium	138	34.8	63	16.4
	High	205	51.6	258	67.4

Sig. < .05

Table 2 demonstrates that a greater proportion of female students (f=258, 67.4 percent) than boy students (f=205, 51.6 percent) have a high degree of grit.

The conversation above makes clear that boy students' grit differed greatly from girl students'. Grit levels were higher among female students than male students. Consequently, the null hypothesis H_{01} was refuted, and it was established that there was a notable disparity in the students' grit related to gender.

Testing of Hypothesis 2

H_{02}: There is no significant relationship between students' grit and academic achievement.

Table 3

The Relationship between Students' Grit and their Academic Scores by employing the Pearson Correlation Coefficient, N=780

	Students' Academic score	**Sig.**
Students' Grit	.759	.000

Sig. <.05

According to Table 3, there was a highly significant and positive linear relationship (r=.759, Sig. =.000) between students' academic score and their level of grit. It implies that a student's academic score would rise by 759 units if their Grit grew by one unit (100%)

Table 4

The Relationship between Students' Grit and their Academic Scores by employing Linear Regression, N=780

Model	**R^2**	**F**	**Beta**	**t**	**Sig.**
3	.576	1056.526	.759	32.504	.000

Sig. <.05

a. Predictor: Students' Grit
b. Dependent Variable: Students' Academic Score

Based on the observed data, Table 4 shows that linear regression model-3 was considerably and moderately fitted (R2=0.576, F =1056.526, Sig. =.000). This indicates that 57.6% of the considerable variation in the students' academic achievements may be explained by their grit. Additionally, Table 4.4.4.2 demonstrates that academic scores were positively correlated with and significantly and strongly predicted by the students' grit (Beta=.759, t=32.504, Sig. =.000). Students' grit and academic scores demonstrated a statistically significant and strong positive linear association, according to a Pearson correlation analysis. In a similar vein, the results of the linear regression analysis showed that the students' grit positively and statistically significantly influenced their academic scores. Thus, it was determined that there was a substantial association between students' grit and academic achievement, and the null hypothesis H_{o2} was refuted.

Discussion

The study found that female students had a higher level of grit than male students, despite the initial hypothesis' assertion that there is no discernible difference in students' grit regarding gender. This conclusion is similar to prior studies (Salud, 2022, &Temel, Temel, & Çevik Kansu, 2023) which indicated girl students were grittier than boy students and found girl students less confident than boy students. According to Kuptsova & Ivanova, as cited in Kannangara et al. (2018) a possible explanation for this could be that girls perform certain tasks better than boys, like multitasking, which requires a lot of perseverance. The results are at odds with other research (Asavisanu & Vinitwatanakhun, 2019; Ryan & Beamish, 2017), which did not discover any differences in grit levels between genders. The sociocultural variations that the female students' upbringing in various countries and societies may be a contributing factor to this.

The study's findings contradicted the second hypothesis, which held that there was no connection between students' grit and academic success. Instead, it revealed a significant positive association, with students' grit both positively and significantly predicting their academic success. This connection contrasts with prior research (Washington, 2016; Asavisanu & Vinitwatanakhun, 2019; Murphy, 2019) which found no correlation between students' grit and achievement in those past investigations, grit shown a statistically significant association with academic ability (Buller, 2012; West et al., 2017; Hodge et al., 2018). It is inferred that by setting high expectations and creating a supportive learning atmosphere where students must work hard to achieve their goals, instructors can help learners build grit. It's critical to instill confidence in students in their capacity to succeed. This is particularly crucial to make sure low achievers are motivated rather than disheartened and continue working without giving up.

Implications

This study adds to the body of knowledge on grit and student achievement by providing some theoretical and empirical insights. Given the strong relationship between grit and achievement, students who possess this personality trait are more likely to succeed in secondary education. Schools need to give students the tools they need to succeed academically as well as to survive in a complex and ever-changing world. Teachers must determine each student's level of grit so that those who don't have it can be taught to develop persistence and long-term resolve. Using a variety of teaching and learning strategies, students can develop the skills necessary to persevere through more difficult tasks over time by being assisted in resisting temptations and maintaining focus on learning activities. By making improvements to the classroom and learning environment in schools, teachers can help their students develop grit. This will help the students understand their life goals, learn the values of learning, and stop viewing education as a passing fancy (Saleh et al., 2019). Tang et al. (2019) claim that grit has gained popularity and attention in academia and that several national and international organizations have incorporated grit into their evaluations of students' learning. These reports suggest that grit and other psychological skills ought to be encouraged in educational settings. Teachers ought to be aware that a lot of instructional techniques encourage grit. Among these are direct intervention programs, which teach students that they can increase their IQ and skill set by working hard. Instructors ought to provide their students with a reason to learn and a feeling of direction. The study's conclusions underline how important it is for educators to be aware of developments in the field of education that pertain to students' skill development and adaptability.

Recommendations

According to the study, girls' grit levels were higher than boys'. To address the unique needs of both male and female learners, tailored strategies and interventions must be developed. All students should be given the opportunity to be empowered, regardless of gender. Additionally, the study found a high and positive correlation between students' academic success and their grit. Consequently, educators should employ strategies that help students become more resilient, persistent, and determined. It is necessary to provide learners with access to mentoring or coaching programs in order to help them overcome challenges.

Directions for Future Research

Future research can examine the ways in which schools, families, and societal factors shape students' academic achievement and their grit, providing insight into their impact on academic achievement. Additionally, the results of this study showed a strong relationship between students' academic achievement and their grit. However, further progress in academic achievement requires a comprehensive intervention plan implemented throughout all schools.

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