
RELATIONSHIP BETWEEN GRIT AND GENDER ON ACADEMIC ACHIEVEMENT
OF UNDERGRADUATE STUDENTS IN GOMBE STATE UNIVERSITY

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Abstract

The purpose of this study was to examine the relationship between Grit on academic achievements of education undergraduate students in Gombe State University. The objective was to determine the relationship between grit and academic achievement of education undergraduate students in Gombe State University. From a population of 912 level 200 students of the faculty of education in the 2019/2020 academic session, 183 samples were drawn through a multi stage sampling. Data was collected using adapted Grit scale developed by Duckworth and Quinn (2009) and CGPA of the students obtained from the record office of the academic secretary of the university. The validity of the instrument were ascertained by conducting a pilot test on the (20) sample from another population. The results showed a significant relationship between grit and academic achievement of the undergraduate students. The result also shows that there was no significant relationship between grit and gender of undergraduate students in Gombe state university It was recommended that Gombe State University should provide students with opportunities to work hard by placing them in rigorous classes to help increase their opportunities to deal with setbacks, overcome obstacles, and focus on long-term goals, which are important components of grit. Gombe state university lecturers should encourage and mentor students to work hard toward developing grit and other skills needed to succeed and not to rely on tests and as a way to assess outcomes. The findings of this study provide an important contribution to expanding the body of literature and knowledge of how grit and mindset influence the academic achievement of undergraduate students in Gombe State University.

Keywords: Grit, Gender, Academic Achievement, Undergraduate, Education

Introduction

A lot of researches have been conducted on factors that influence a student's academic achievement. Most of these researches focused on the role of cognitive factors such as intelligence (Kuncel, Hezlett, & Ones, 2001). Researchers' attention has tilted toward noncognitive factors that could be responsible for higher academic achievement. Non-cognitive skills are academic and occupational relevant traits and skills not exclusively intellectual (Rosen, Glennie, Dalton, Lennon & Bozick, 2010). Non-Cognitive skills noted in the literature include persistence, grit, resilience, self-efficacy, mindsets, effort, motivation, cooperation, and work habits (Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson, & Beechum, 2012).

Duckworth and Quinn (2009) as cited in Gough (2013) defined grit as a quality of individuals who passionately work hard towards long-term goals. Duckworth informed that a high intelligence quotient (IQ) did not guarantee success. The researcher found this to be true through her experience with her son, who was identified as gifted (high IQ) in the fourth grade who has failed to achieve the success of obtaining a college degree. Perkins (2014) opines that being gifted is no guarantee of being hardworking or passionate about something. Duckworth (2016) found that grit is a better predictor of high school graduation and grade point average than IQ.

In high school, the Duckworth son had a grade point average (GPA) of 2.5 despite his high IQ. In 2015, 1.92 million students took the American College Test (ACT) to determine qualification for college entrance (Roell, 2015). Duckworth son obtained a score of 31 out of 36 on the ACT. Perkins (2014) informed that a student's high-school GPA predicted college completion better than a student's ACT score. The ACT score of 31 that the researcher's son obtained was high enough that some colleges accepted him into a respected four-year university program. Because he did not grit, while in college, he struggled to maintain an acceptable college CGPA. The Duckworth's son did not have passion nor work hard (did not grit) and after two years of college, he quit school without obtaining a college degree.

Concept of Grit

The ideals of persistence and tenacity have existed as virtues since Aristotle. According to Yvonne (2017), the concept of Grit can be traced back to Galton who wrote that the most eminent individuals in society are typically blessed with talent, zeal, and a capacity for hard labour. Awareness regarding the impact of Grit is at the forefront of education in recent years due to Angela Duckworth's ongoing research at the University of Pennsylvania. Duckworth (2009) maintains perseverance (grit) may be as important as intelligence in determining success.

Duckworth, Peterson, Matthews, and Kelly (2007) researched a wide range of students from West Point cadets to the Scripps National Spelling Bee finalists; she concluded that Grit significantly contributed to successful outcomes more than I.Q. and that there was no correlation between Grit and I.Q. Duckworth (2016) opines that someone must first be interested in the topic, then that person needs to have a period of prolonged skill development and dedicated practice. Spending hours on developing skills and continuously improving will develop grit. Much feedback is necessary for the process of dedicated practice, which can build grit". That person must identify the purpose of what he or she is doing and must have hope (Duckworth, 2016).

Grit is an individual's passion for a particular long-term goal, coupled with powerful motivation and perseverance to achieve their objectives. Duckworth defines grit as sticking with things over the very long term until you master them. According to Duckworth and Eskreis-Winkler (2013), gritty individual approaches achievement as a marathon, and therefore his or her advantage is stamina. A key aspect of grit is the ability to continue despite obstacles or failures which may arise. Duckworth, Peterson, Matthews, and Kelly (2007) define grit as perseverance and passion for long-term goals.

Grit entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress. Whereas disappointment or boredom signals to others that it is time to change trajectory and cut losses, the gritty individual stays the course, deliberately set extremely long-term objectives, and do not serve from them, even in the absence of positive feedback. It is of two dimensions: consistency of interests and perseverance of effort. The consistency of interests refers to the proclivity of individuals to espouse a similar array of interests for a long period (Duckworth, Peterson, Matthews, & Kelly 2007).

Perseverance of effort, on the other hand, pertains to the extent to which people would exert durable effort in facing challenges. These hypothesized dimensions of grit were found to be closely associated with trait conscientiousness. Grit and growth mindset stems from the belief that intelligence can "grow like a muscle." Students with this set of beliefs, attitudes, and dispositions: believe that intelligence is the malleable feature and to learn new concepts and material Value their efforts to achieve academic and learning goals.

Perkins-Gough (2013) opines that when you consider individuals of equal talent, the grittier ones do better. Individuals who had talent could do things quickly and easily but did not necessarily stay with a task and work harder to improve (Matchar, 2016). A person with grit also demonstrated resilience. A gritty individual was resilient when he or she faced a challenge or became frustrated (Bashant, 2014). Resilience involved developing a positive response to hardship or failure (Perkins-Gough, 2013). According to Perkins-Gough (2013), gritty students are those who are

resilient when faced with failure or adversity.

Research also established a correlation between perseverance and grit with student success (Pappano, 2013). Perseverance was the capability to persist to accomplish a goal regardless of obstacles, difficulty, or delay (Seider, 2013). Advanced levels of achievement in school required continued effort on complicated tasks; this is why grit was a significant predictor for remaining in and thriving in school (Dweck et al., 2014). Individuals with grit wanted to improve and put in a daily effort to get better (Matchar, 2016). Grit incorporated a variety of traits, such as motivation, positive mindset, goal-focused, and self-control (Goodwin & Miller, 2013).

There was a strong correlation between self-control and grit, but the two traits were not the same concept (Duckworth and Gross, 2014). Self-control involved making sure actions aligned with a goal, regardless of more appealing choices. In contrast, grit involved working diligently toward a single goal through good and bad times, for years or even decades (Duckworth and Gross, 2014). Individuals with self-control were able to delay gratification and resisted distraction, which led to better academic success (Bond, 2014). Schools understood teaching grit and self-control was as important as teaching academic content (Tough, 2016). "If you have grit, you have the toughness and tenacity to see a goal through, with an added dash of resourcefulness and pluck to help overcome the setback, you have stamina and persistence" (Stains, 2014).

Duckworth (2016), in response to a question, asked during an interview with a business professor on how can grit be developed by an individual, stated that someone must first be interested in the topic, then that person needs to have a period of prolonged skill development and dedicated practice. Much feedback is necessary for the process of dedicated practice, which can build grit. Next, the person must identify the purpose of what he or she is doing. Finally, the person must have hope.

Duckworth also gave credit to Dweck and the concept of a growth mindset. Duckworth stated if one is stuck in a fixed mindset where he/she believes things are not going to change, and this individual continues to look for evidence that nothing will change, then he or she will end up proving themselves right. This is because the individual will be stuck in a fixed mindset instead of having hope and finding evidence that one can change and subsequently making the change (Duckworth, 2013).

Academic Achievement

According to Bruce and Neville (1979), academic achievement is measured by the standardised achievement test developed for school subjects. What this means is that academic achievement is measured in relation to what is attained at the end of a course, since it is the accomplishment of medium or long term objectives of education. It has been observed that achieving well in school had a significant influence on employment and learning outcomes for young people many years after leaving

school.

According to Yusuf (2012), students' academic achievement includes their accomplishment at the senior secondary certificate of education (SSCE), junior secondary certificate of education (JSCE), among others. It is also observed that people often refer to school academic achievement as students' graduation rate. Probably that is why it is rare to see school academic performance in relation to national education norms (Yusuf, 2002). In other words, achievement can be measured as stagnating, falling, or improving over a long period.

Relationship between Grit and Gender

The relationship between grit and gender was studied by different scholars and the results obtained were not the same. For instance, Natalie and Isabella (2017) in a study titled *Personality and Gender: Grit Differences in Undergraduates* involving 44 females and 22 males' students total ($N = 66$), and of ages 18-25. The students were recruited mainly from one private university campus in the Midwest. Where they completed slightly modified versions of the grit scale. The result indicated that the gender difference for grit was only marginally significant $M = 19.38$, $SD = 1.50$, $t(64) = 1.75$, $p = .09$, $d = 0.45$.

Amy (2017) in a study titled "The Relationship Between Student Grit and Student Achievement" sample was collected from the population of 6th-8th grade students residing in the Kansas City of Missouri, who attended Urban Community Charter School for the entire 2013-2014 school year. The second purpose of the study was to determine whether the relationship between students' grit scores and their academic achievements was affected by student gender, race, and first language. Before conducting the Fisher's z test for two correlations to test H_0 , the data were disaggregated by gender. A correlation coefficient was calculated for male students to assess the strength and direction of the relationships between students' grit scores, student GPA, and gender. A second correlation coefficient was calculated for female students to assess the strength and direction of the relationship between students' grit scores, students' GPA, and gender. The two sample correlations were compared. The level of significance was set at .05. The Results indicate that the grit score was not affected by the student gender of the respondents.

Stacyann (2015) in a study of grit and self-control as predictors of first-year student SUCCESS Male and female students had somewhat different results in terms of Grit, Self-Control, and academic performance. The predictors of academic performance for male students were HSGPA, Self-Control, and SAT scores. Female student's predictors were HSGPA and SAT scores. For female students, the variance shared between HSGPA, SAT scores, and FA14GPA was very low (13 percent and 17 percent), and for male students, it was moderately high (33 percent and 26 percent). Although both gender's HSGPA and SAT scores presented as correlating and shared

variance with students' fall GPA, the differences based on gender were rather unequal. Because of those gender differences, traditional academic predictors may not be the best tools to determine academic performance. Additionally, for female students, other predictors of academic performance outside HSGPA, SAT, Grit, and Self-Control may exist. The biggest difference between genders was Self-Control; it predicted academic performance only for male students and not female students before the fall GPA split, suggesting that what may be a good predictor for male students may not be for female students.

Statement of the Problem

There seems to be an achievement gap among newly admitted students of the faculty of education in Gombe State University. There is an achievement gap between gender and social class of students. This has manifested in the number of students placed on probation or withdrawn from the school by the end of their first academic year. For instance, the record obtained from the office of the academic secretary indicated that 460 students were placed on probation and 18 other students were withdrawn from the faculty of education of Gombe State University in the 2017/2018 academic session as a result of their previous year academic achievement. The trend was a source of concern and the need for a study to identify some of the factors that could be responsible for the problem. It is against this background that this study examined the relationship between grit, mindset, gender, and how these variables relate to the academic achievement of education undergraduate students in Gombe State University.

Objectives

The Objectives of the study are:

1. To determine the relationship between grit and academic achievement of education undergraduate students in Gombe State University.
2. To determine the relationship between grit and gender of education undergraduate students in Gombe state university.

Research Questions

1. What is the relationship between grit and the academic achievement of education undergraduate students in Gombe State University?
2. What is the relationship between the grit and gender of education undergraduate students in Gombe State University?

Research Hypothesis

H₀1: There is no significant relationship between grit and academic achievement of education undergraduate students in Gombe State University.

H₀2: There is no significant relationship between grit and gender of education undergraduate students in Gombe State University.

Methodology

The correlational design was employed to cover the range of research objective and question on a population of 912 200 level undergraduate students from the Faculty of Education in the 2019/2020 academic session. Multi staged sampling of 183 students representing 20% of the population was used for the study.

In determining the academic achievement of the students, their examination records for two semesters were obtained from the Academic record of the University from which their cumulative grade point average (CGPA) was extracted for analysis. Duckworth and Quinn (2009) scale was adapted to captures individual Grit while the second instrument that captures the mindset of the students was adapted from a survey scale developed by Dweck (2006). To ascertain the construct validity and reliability of the grit scale, the researchers conducted an exploratory factor analysis on a twenty (20) sample population of postgraduate students from the faculty of education in the university. Pearson product-moment correlation was used to analyse the data on SPSS 2.1

Results

Research Hypothesis 1 (H₀1): There is no significant relationship between grit scores and academic achievement of undergraduate students in Gombe State University.

Using Pearson Product Moment correlation (PPMC). The technique was employed to determine if there is a viable positive and significant degree of correlations between Grit and academic achievement of education undergraduate students in Gombe state University. The result from the analysis is presented in the table below.

Table : Relationship between grit and academic achievement of undergraduate students

Variables	N	Mean	S.D	r- value	Sig. value	Decision
Grit	183	1.1585	.36375	0.187	.011	Rejected
Academic achievement	183	3.1913	.75100			

The result for this hypothesis as presented in Table 1 indicated that there is a significant relationship between grit and academic achievement of undergraduate students in Gombe state university. The total number of students that participated in the research is 183 and is represented by N. The independent variable Grit has mean

(M) of 1.1585 and standard deviation (SD) of 0.36375 while 3.1913 was the mean of the dependent variable academic achievement, which had a standard deviation of 0.75100. The value of r indicates .187 percent of shared variance between grit and academic achievement while the relationship is sig-value at 0.011. The result shows a significant positive correlation between Grit and academic achievement. Therefore, the null hypothesis is rejected.

Research Hypothesis 2 (Ho2): There is no significant relationship between grit and the Gender of undergraduate students in Gombe State University.

Analysis of Hypothesis no 2 was conducted using point biserial correlation. The technique was employed to determine if there is a viable positive and significant degree of correlations between Grit and Gender of education undergraduate students in Gombe state University. This technique is chosen because it is appropriate when a researcher seeks to find a relationship between a continuous variable and a dichotomous. The result from the analysis is presented in table 3 below.

Table 2: Relationship between grit and gender of undergraduate students

Variables	N	Mean	S.D	r- value	Sig. value	Decision
Grit	183	1.1589	.36375	.064	.387	Accepted
Gender	183	1.4098	.49315			

Table 2 shows the relationship between grit and gender of undergraduate in Gombe State University. A point biserial correlation was run to determine the relationship between Grit and gender. Grit has Mean (M) of 1.1589 and standard deviation (SD) of 0.36375 while 1.4098 was the mean of the t variable gender, which had a standard deviation of 0.49315. There was a negative correlation between Grit and gender of undergraduate students and their gender in Gombe State University ($r=.064, n=183, p=.387$).

Findings

Based on the analysis the study found out that there was a significant relationship between grit and academic achievement of education undergraduate students of Gombe state University. In other words, the more the grit develops, the more academic achievement improves positively. The finding from the result obtained indicated that there was no significant relationship between grit and gender of undergraduate students of Gombe State University. This means that developing grit has nothing to do with the gender of students in Gombe state university whether male or female, a student can have high or low grit depending on the effort he or she put in.

Discussion of Findings

Grit a non-cognitive factor was used in a Pearson product-moment correlation analysis (PPMC) to predict the academic achievement of undergraduate students of Gombe state university. Preliminary analyses were performed to ensure no violation of the assumption of normality, linearity, and homoscedasticity. There was a significant relationship between the Grit and Academic Achievement of undergraduate students. This means as the Grit students of Gombe state increases, so also their academic achievement. In other words, the more the grit develops, the more the achievement is affected positively.

The finding is in agreement with the finding of Strayhorn (2014) who was interested in determining if grit could explain the academic success of black male students at predominantly white institutions in America. The finding is also consistent with the finding of Beyhan & Dilmac (2016) who studied the relationship between university students' grit level and academic achievement in Turkey. He analyses the data was using Spearman's correlation analysis and the result revealed that there was a significant positive relationship between grit and academic achievement. One explanation for this finding is because of what Bandura (1997) has argued that self-perception variables relate more strongly to outcomes when they are measured at the same level; given that class grades were our outcome measure, effort regulation provides this match. Also, the effort regulation items describe both effort itself and continuing one's effort even when tasks are uninteresting; being able to do this may be particularly important for outcomes such as grades.

This finding is in agreement with the finding of Angela and Patrick (2009) in their study titled "Development and Validation of the Short Grit Scale" where they found out that Grit scores did not differ significantly by gender, $t(1552) = 1.50, p = .13$. But Cross (2013) in a study titled "Staying the course: Grit, academic success, and non-traditional doctoral students" found out a significant and positive relationship between grit and GPA for females but not for males. Furthermore, the finding is in agreement with the finding by Kannangara, *et,al* (2018) in their study "All That Glitters Is Not Grit: Three Studies of Grit in University Students" where In order to accurately determine the effect of gender on grittiness, a randomised gender sample was used, where 150 randomly selected males and 150 randomly selected females were used in further analysis. *T*-test analysis found that females ($M = 41.54, SD = 7.17$) were significantly grittier than males ($M = 39.26, SD = 6.74$), $t(281) = 2.748, p < 0.01$. Mia (2014) conducted a study on Grit and Different Aspects of Well-being: Direct and Indirect Effects via Sense of Coherence and Authenticity and Preliminary analyses were performed to investigate whether gender, educational level and age

were related to grit, Significant gender differences were found on grit scores, indicating that women reported significantly higher scores ($M = 3.64, SD = .57$) than men did ($M = 3.42, SD = .59, t(388) = 3.59, p < .001, d = 0.38$). Having found out that there was no significant positive relationship between the grit and gender of undergraduate students therefore, the null hypothesis is therefore accepted.

Conclusion

The study was an effort to find the relationship between Grit on academic achievement among undergraduate students Gombe State University. The variables of the study gave us a clearer picture of their relative predictive power just like Duckworth and colleagues (2007) reported that academic achievement are predicted by grit.

Recommendations

The following recommendations were made based on the finding of the study.

1. Gombe State University should provide students with opportunities to work hard by placing them in rigorous classes to help students increase their opportunities to deal with setbacks, overcome obstacles, and focus on long-term goals, which are important components of grit.
2. It is also recommended that the counselors should have the knowledge of grit and its importance to achieving high academic excellence that will help them assist especially their clients who are battling with low academic outcome in the schools to improve through hard work, having more passion and perseverance they can improve their academic out and can become high achievers. And for most talented students, the counselors can encourage them to work even harder to maintain their high academic excellence and to warn them not to relent in their effort as intelligence alone is not a guarantee for success in life.
3. Gombe State University should help in fostering grit in students by providing opportunities that are engaging because students will not become grittier just because the teacher has a high degree of grit but can be developed and grown through experiences.
4. Gombe State University lecturers should encourage and mentor students to work hard to develop grit and other skills needed to succeed and not rely on assessments as an easy way to assess outcomes. Even though a teacher teaches content to their students, they should allow students to develop the necessary non-cognitive skills to be successful, because both cognitive and non-cognitive skills are needed to be

successful.

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