Research Article

Passion, Perseverance, and Performance: A Systematic Review of Grit

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ABSTRACT

Background: Grit, defined as perseverance and passion for long-term goals, has emerged as a significant non-cognitive attribute associated with success in academic, professional, and personal domains. Unlike intelligence, which has traditionally been considered the primary predictor of achievement, grit incorporates persistence, sustained effort, and consistent interests that contribute to long-term accomplishment.

Objective: This systematic review aimed to evaluate the predictive role of grit in educational and professional outcomes, examine its association with other psychological variables, identify methodological patterns among published studies, and highlight gaps for future research.

Methods: A systematic search was conducted across Google Scholar, PubMed, Science Direct, and digital libraries between 2013 and 2020. Eligibility criteria included peer-reviewed full-text studies that conceptualized grit according to Duckworth's theoretical Model and used standardized grit scales. Duplicates, non-English papers, dissertations, conference abstracts, editorials, and studies unrelated to Duckworth's construct were excluded. Screening followed PRISMA guidelines, and methodological quality was evaluated using QualSyst criteria. A total of 354 records were screened, 150 titles and abstracts were assessed, and 21 studies meeting the inclusion criteria were retained for review.

Results: Most included studies used cross-sectional or correlational designs, while a few employed longitudinal or mixed-methods designs. Findings consistently indicated that grit positively predicted academic achievement, self-directed learning, retention, psychological wellbeing, and persistence across diverse populations. Subcomponents of grit, such as perseverance of effort, showed stronger associations with academic performance than consistency of interest. Some variability was noted, as a few studies reported limited predictive value when controlling for personality traits such as conscientiousness.

Conclusion: Grit appears to be a critical non-cognitive determinant of success, influencing educational performance, career persistence, and psychosocial outcomes. However, methodological heterogeneity and limited causal analysis weaken generalizability. Future research should focus on longitudinal models, cultural validation, mechanism-based approaches, and experimental interventions that foster grit development and assess its long-term impact.

Keywords: Grit, Systematic Review, Role of grit, Success in academic

INTRODUCTION

In recent years, psychology has shifted its emphasis from a conventional focus on adverse and undesirable life events to one on attributions of "health, motivation, capabilities, potential, and social functioning." (Singh & Jha, 2008). Specifically, terms such as intellect, talent, happiness, and life satisfaction have been addressed in an uncertain effort to gather information and, eventually, comprehend how to make life better. (Arthaud-day et al., 2005). The investigation of success factors has emerged as a significant topic of interest, not only within the field of professional psychology but also within the media and esteemed academic institutions. (Blair & Raver, 2012)(Davis, 2014). Literature shows that intelligence is the most reliable predictor of a student's academic success. (Pascarella et al., 2004, Kidd & Latif, 2003, Poropat, 2009). However, in the late 1900s, psychologists began to establish that success is not solely based on students' intellectual level but on the combination of cognitive abilities and personality traits such as perseverance, self-control, focus, and time-management skills. (Poropat, 2009, Morrison & Schoon, 2013). Several academic endeavors require drive and endurance to achieve long-term objectives. For example, a student in school who aspires to become a health professional must study hard and persevere over time to get a Medical degree. Similarly, a high school student who wishes to deliver the final address must diligently complete all essential academic duties to a high standard. These examples demonstrate the significance of having a burning desire and a strong will to succeed. The earlier research literature suggests that a student's prior academic achievement is a retrospective indicator of success and cannot predict professional success. (Duckworth et al., 2007).

In the early 21st century, educational psychologists recognized the significance of non-cognitive variables and their relation to success. One of the non-cognitive traits identified and attracting considerable attention from researchers was the construct of Grit. Angela Duckworth introduced the notion of grit at the University of Pennsylvania. She defined grit as "Perseverance and passion for long-term goals (Duckworth et al., 2007)." Grit is a higher-order trait with two aspects: perseverance of effort and consistency of effort (Credé et al., 2017). Grit is a personality trait that describes the ability to persist through hardships toward lifetime goals, despite obstacles and failures. Educational Psychologists have accepted the construct of grit as an important antecedent of success (Duckworth & Yeager, 2015). Gritty individuals stay on track to achieve their goals and show higher academic achievement (Hagger et al., 2018; Akos & Kretchmar, 2017; D. Park et al., 2018). Perseverance and consistency are also linked to better career exploration, retention, self-efficacy, and higher work performance (Robertson-Kraft & Duckworth, 2014) (Zhong et al., 2018). Furthermore, it has been argued that students with high grit experience fewer academic maladjustments and burnout (Zhong et al., 2018; Ceschi et al., 2016). Expert examiners have shown that grit is correlated with positive psychological outcomes. The psychological benefits of grit include greater satisfaction, optimism, and coherence (Renshaw & Bolognino, 2016; Lovering et al., 2015).

SYSTEMATIC LITERATURE REVIEW

Objectives of Literature Search

- To find out the efficacy of grit to predict educational outcomes.
- To find the literature gap in previous studies.
- To assist in understanding the methodology of the research.
- To select quality articles for discussion.
- To see the influence of demographics, academics, and personality traits on grit.

Literature Search Strategy
- Searching for relevant research from 2013 to 2019.
- Identification of keywords and synonyms related to research.
- Identification of the databases for search.
- Searching the databases with individual keywords and synonyms.
- Limiting database searches using keywords and Boolean operators.

Literature Search and Selection Criteria
- Selection of relevant Literature using PRISMA 2009 categorization.
- Selection of articles from those previously assessed by PRISMA using Qualsyst.
- Critical review of the selected articles.
- Narrative Literature review related to the research topic.

Identification of Key Terms for Literature Search

Table 1: Keywords for Literature Search

Keywords	Synonyms
Grit/ Resilience	Perseverance, Passion, Effort
Noncognitive Traits and Academic Performance	School/ College achievements/ success, and Perseverance
Grit and long-term goals	Resilience and Long-term Success
Grit and Professional Success	Grit as a predictor of academic success
Grit and wellbeing	Perseverance and happiness

Databases used for the search for Literature
- Google Scholar
- PubMed
- Science Direct
- HEC Digital Library
- UHS Digital Library

Search Results

Table 2. Databases Searched with Keywords

Keywords	Google Scholar	Pub Med	Science Direct	HEC Digital Library
Noncognitive traits	335,000	155	1006	33719
Grit	832,00	3322	91265	4095
Grit and Professional Success	8280	34	1670	2838
Grit and Academic Performance	43	98	1769	777
Grit as a predictor of academic success	39	17	0	432
Grit and Academic Success in Pakistan	29	0	0	219

The following tasks were implemented throughout the selection process:
(a) First, duplicate articles and those published before 2013 were removed
(b) Second, those studies in which the grit term was used with a different meaning than Duckworth's Grit concept were eliminated
(c) The third step involved reading the full text of the selected articles to remove the articles based on exclusion criteria. Flowchart documentation of the complete search and screening procedure is provided in the Prisma Flow Chart (Figure 2.1.9).

Initially, I used Google Scholar and ScienceDirect to identify relevant studies published between 2013 and 2019. Table 2.1 lists the key search terms used. This approach produced an excessive number of results since several sources appeared many times. After removing duplicates and eliminating book chapters, magazine articles, and poster presentations, all remaining literature pertinent to the purpose of the systematic review was collected. Based on titles and abstracts, 150 sources were retained for additional analysis.

Studies were eligible for consideration if they were peer-reviewed journal articles and had an official publication date between 2013 and 2020. The study must be a full-text English article with "Grit" in the title or abstract and a DOI. We rejected working papers, dissertations, conference papers, book chapters, and journal articles. In cases of doubt based on abstracts, the whole text was examined. After applying the inclusion/exclusion criteria to 150 research study articles, we eliminated 91 publications and reduced the number of studies to 59. Additional inclusion criteria were applied, and grit was conceptualized according to Duckworth's theoretical Model (perseverance of effort, consistency of interest) and measured with the Grit Scale. Therefore, the whole texts of the 59 papers were extensively scrutinized. In the end, 21 papers qualified for the systematic review.

Inclusion Criteria

- Original articles
- Full-text articles
- Systematic reviews
- Meta-analysis
- AMEE guides
- Published between 2013 and 2020

Exclusion Criteria

- Abstracts only
- Book chapters
- Magazine Articles
- Editorials
  - Reports
  - Non-English articles
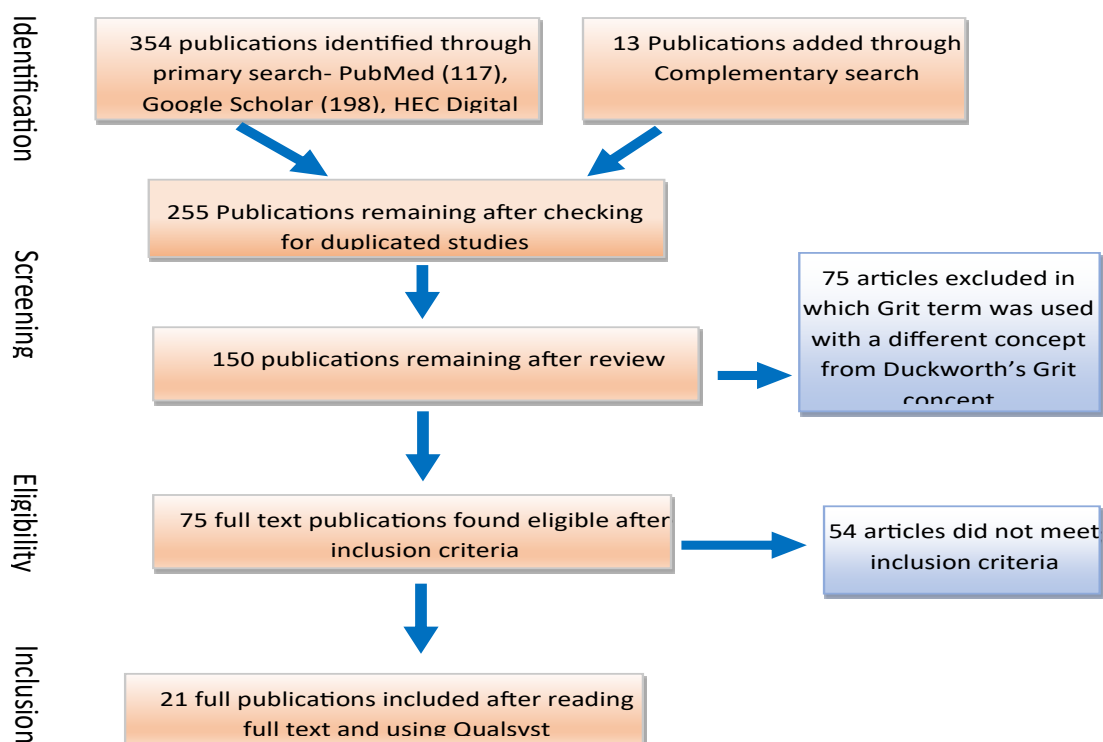
Prisma Flow Chart

Table. 3 Critical Appraisal of Research Publications Included in Review

Title, author name	Objective of the study	Study design	Data Analysis	Findings/ Critical Appraisal
Gritty Students: The Effect of Perseverance on Retention for Traditional and Non-traditional Students. (Lerner, 2013)	To explore the factors associated with the preservation and retention of international students in an engineering program.	Quantitative Research. A longitudinal study was conducted on Engineering students.	The data was gathered through a questionnaire. (the Grit-S scale.)	The study analyzed the factors that lead to the effective retention of non-traditional and transfer students in an engineering program. Students registered at a 2-year school that serves as a feeder program for a 4-year University were surveyed at the beginning of the longitudinal study to assess their grit. No significant differences were observed in the first and second-generation students.
"The Predictive Role of Grit on Metacognition in Turkish University Students" (Arslan et al., 2013)	The study aimed to correlate Grit and metacognition.	Quantitative research, a Correlational study conducted in a Turkish University. The study included 352 students.	It was a correlational study, using a questionnaire. The questionnaire used the Metacognition Awareness Inventory and the Grit Scale. Data were analyzed using SPSS 17. Data were subjected to correlational analysis and multiple regression analysis.	The study showed that Grit is positively correlated with metacognition. Metacognition was positively correlated with the attributes of Grit, i.e., perseverance and consistency of effort.
The Relationship between Achievement Goal Orientations and Grit. (Akin & Arslan, 2014)	To understand the connection between grit and four achievement objectives (learning approach/avoidance, performance approach/avoidance).	A Quantitative cross-sectional study using a survey was conducted on University students in Turkey	A Correlational study in which multiple regression was performed between grit and other variables.	Positive associations were observed between grit and learning-approach objective orientations and negative associations with learning-avoidance, performance-approach, and performance-against

		(60% were male, and 40% were female.		objective orientations.
"What Role does Grit play in the Academic Success of Black Male Collegians at Predominantly White Institutions?" (Strayhorn, 2014)	To examine the significance of Grit in describing the academic success of Black male college students at White institutions.	Quantitative, Cross-sectional study using a survey.	It was a correlational study in which hierarchical regression analysis was performed.	For Black males, Grit was highly correlated with their college grades. Background attributes, academic variables, and grit explained 24% of the variation in school GPA and SAT scores.
"The Grit Effect: Predicting Retention in the Military, The Workplace, School, And Marriage" (Eskreis-Winkler et al., 2014)	The objective of the research was to correlate Grit, individual-difference variables, and retention in the military, the workplace, school, and marriage.	Quantitative research design in which a cross-sectional online survey was conducted.	It was a correlational study in which binary logistic regression and hierarchical logistic regression were performed.	Both academic conscientiousness and school motivation were found to be correlated with Grit in the study and after adjusting for all other variables, grit remained a strong predictor of graduation. Juniors who showed perseverance were more likely to finish high school.
"Grit for Engineering Students". (Choi & Loui, 2015)	To investigate the relation of Grit with persistence and retention among Engineering students.	It was a mixed-method research Design. Quantitative and Qualitative research methods were employed in the study.	Mixed-method study. A questionnaire was used in quantitative research. In the qualitative study, semi-structured interviews were conducted. The Phenomenography theory method was used in the qualitative study.	Grit was tested in retaining first-year engineering students. Research shows that girls are tougher than boys.
"Investigating Grit and its Relations with College Students' Self-Regulated Learning and	To study the association between grit and individuals' self-directed learning and academic success.	Cross-sectional, Quantitative research was conducted on University students.	A Correlational study in which multiple regression was performed to find an association between grit,	Grit-PE was predictive of all SRL measures Grit-CI was solely linked to the two aspects of SRL i.e. perseverance and self-efficacy. Grit-

Academic Achievement.” (Wolters & Hussain, 2015)			self-regulated learning, and academic performance of a student.	PE predicted success before accounting for SRL.
“Assessing the Grit of Incoming Engineering Students” (Bottomley, 2015)	The study aimed to determine whether Grit predicts students' success.	Cross-sectional, Quantitative, Correlational study.	A longitudinal study in which a questionnaire was used to collect data.	Initially, in the Engineering Program, first-year engineering students were invited to participate in a longitudinal study to track their semester-wise performance and perseverance until the graduation semester. Correlations were found between grit scores, gender, race, and semester grade point average (GPA). The research aimed to determine whether grit is more, less, or equally predictive of student performance. The study reported that female students were more hardworking and were more likely to overcome setbacks.
“Keep on Truckin' or Stay the Course? Exploring Grit Dimensions as Differential Predictors of Educational Achievement, Satisfaction, and Intentions (Bowman et al., 2015)	The study aimed to correlate grit dimensions with various student outcomes.	Quantitative, Correlational study, in which Undergraduate students in two universities were selected	The data were collected from two cross-sectional online surveys. Multiple regressions were performed to correlate various student outcomes with grit.	The two grit attributes were linked to a decreased likelihood of changing majors, but only Grit-CI was associated with a decreased likelihood of changing professions. Grit-PE predicted improved academic adjustment, GPA, and sense of belonging. In contrast to Grit-CI, Grit-PE was positively linked with faculty-student interactions, college satisfaction, and college persistence

				intent in both groups. In all samples. Grit-CI was negatively associated with job and significant changes. Grit-PE regression coefficients predicted all continuous outcomes substantially better than Grit-CI regression coefficients.
"Integration of Academic Advising into A First-Year Engineering Design Course and Its Impact on Psychological Constructs " (Guilford et al., 2015)	The study compared psychological constructs quantitatively before and after an instructional intervention.	A quantitative study using a questionnaire was conducted on 75 First-year Engineering students. Thirty-three students were included in the experimental group and 42 in the control group.	This research compared psychological traits such as curiosity, perseverance (grit), creativity, self-efficacy, and innovative design before and after an educational intervention ("intrusive advising"). Experimental (advising) and control (no counseling) groups were compared.	Grit increased in the control group and decreased in the mentor group, as measured by improvement scores (post-test minus pre-test). Contrary to prediction, these disparities widened but were not statistically significant of a tiny but negative link between grit, curiosity, and creativity. Higher grit scores were associated with poorer curiosity and inventiveness.
"Conscientiousness is the Most Powerful Non-Cognitive Predictor of School Achievement in Adolescents" (Dumfart & Neubauer, 2016)	This research aims to examine whether noncognitive qualities have incremental explanatory value beyond IQ and conscientiousness in predicting individual school success.	Quantitative research, in which a questionnaire was used to measure the Grit score. The study was conducted on high school students in Austria.	It was a Cross-sectional study. Data analysis included CFA, bivariate correlations, and hierarchical regressions.	Grit was moderately correlated with GPA, science, and language scores. In addition, the contribution of grit to the prediction of GPA, Intellect, and conscientiousness was not significant.
"Promise and Paradox Measuring Students' Non-Cognitive Skills	The study aimed to examine the links between noncognitive skills and	It was a cross-sectional study. The sample	It was Quantitative Correlational research. Regression	Grit and attendance, behavior, and test results were positively correlated.

and the Impact of Schooling" (West et al., 2016)	academic success among District schoolchildren.	included 8th-grade students from 32 schools in Boston.	analyses were performed to examine the relationship between Grit and academic achievement.	
"Grit and Duress: Strengths, and Academic Success among Non-Citizen and Citizen Latina/o First Generation College Students" (O'Neal et al., 2016)	The study examined Grit, sadness, stress, and academic achievement.	Mixed-method research. The sample included 264 first-generation college students.	In a mixed-methods study, quantitative data were collected using questionnaires. The data was analyzed, and regressions were performed. For qualitative research, student interviews were conducted, and then thematic content analysis was performed.	For non-citizens, grit was significantly connected with accomplishment, and it was adversely correlated with depression for all students. Depression was greater among non-citizens with lower levels of grit. Their families and communities contributed to their perseverance. Non-citizens used perseverance to fund their college educations and achieve academic success.
"Impact of Non-cognitive Factors on First-year Performance" (Senkpeil & Berger, 2016)	The study investigated how non-cognitive elements affect pupils' academic performance.	Quantitative Research Design using a questionnaire for data collection.	A Correlational study in which the Grit-S scale was used to score the grit of the students and then was correlated to academic success.	Conscientiousness was closely associated with academic success among the sample pupils.
"Effects of Grit on Academic Achievement and Career-Related Attitudes of College Students in Korea" (Lee & Sohn, 2017)	The study examined how Grit and diligent practice affect academic success and professional views.	It was a Quantitative study conducted in Korea. The sample included 253 students in a psychology class at a college.	The data were collected via an electronic survey. It was a correlational study, and hierarchical multiple regression was performed during data analysis.	Grittiness and grades were controlled by focused practice. After controlling for the Big Five personality traits, grit strongly predicted professional preparation.
"A Tripartite Taxonomy of	Three separate studies were	The study was	Data was collected, and	Inner personality qualities (grit and

Character: Evidence of Intrapersonal, Interpersonal, and Intellectual Competencies in Children" (Park et al., 2017)	conducted, and each study had a different objective. The first study aimed to determine if interpersonal personality character predicts positive peer relationships, intrapersonal personality character predicts higher academic results, and intellectual personality character predicts class engagement. The purpose of the second study was to validate the three-tiered taxonomy of character based on student feedback. After controlling the baseline outcomes, the objective of the third study was to analyze the predictive value of each character factor and to investigate the convergence between character factors and the Big Five personality traits.	conducted on middle school students studying in the 4th to 8th grades. The study had three parts, and each Part examined different but interrelated objectives. The study design was prospective, and longitudinal analyses were conducted.	EFA and CFA were calculated. Longitudinal multiple regression analyses were performed to examine correlations.	academic self-control) predicted class engagement and academic success. Interpersonal, intellectual, and intrapersonal traits are connected but distinct enough to predict outcomes one year later. In addition to demographic characteristics and cognitive ability, all three character traits were substantially correlated with end-of-year grade point average. A major predictor of GPA development was intrapersonal personality only. Superior intrapersonal character improved grades. Intrapersonal character predicted conscientiousness best.
"Psychosocial Keys to African American Achievement and Psychosocial Variables in High-Achieving African Americans" (Dixson et al., 2017)	The study examined whether four behavioral traits—grit, growth mindset, ethnic identification, and other group orientation—predict and add incrementally to academic achievement	Quantitative data were collect from African-American high school students using a cross-sectional survey.	A survey collected data. Hierarchical multiple regressions were performed to assess correlations among the variables.	Grit-PE and Grit-CI had no predictive power for academic progress.

	beyond socioeconomic status (SES) and other demographic variables.			
"Investigating Grit as a Non-Cognitive Predictor of College Success" (Akos & Kretchmar, 2017b)	To test whether self- and informant-reported Grit predict college outcomes.	Quantitative research, Cross-sectional study	The study was conducted on Undergraduate University students. The data were subjected to hierarchical multiple regression and logistic regression analyses.	Overall grit significantly predicted GPA. Significant changes in the subject are inversely associated with the total self-reported grit score. Grit-PE predicted GPA, but Grit-CI predicted substantial change. Students with lower grit switched majors more often. Grit-CI is the only meaningful predictor of significant change.
"Grit and Academic Performance among First Year University Students. A Brief Report" (Mason, 2018)	The study aimed to correlate Grit and academic performance.	Quantitative research. A longitudinal study was conducted on First-year University students.	The data were collected via a self-reported Grit scale survey, and academic performance was assessed using students' semester results. Simple regression analysis was computed to predict students' academic achievements.	Students with strong Grit scores had higher academic scores. Grit appears to predict academic achievement in students.
"Fostering Grit, Perceived School Goal Structure Predicts Growth in Grit and Grades" (D. Park et al., 2018)	The study assessed how school culture influences middle schoolers' Grit.	It was a longitudinal study that examined grit, perceived goal structures, and academic achievement.	Data was analyzed by fitting a series of path models.	Students who view their school as mastery-goal-oriented are more persistent and successful, the study found. Those who perceived their schools as performance-focused were less hardworking and scored lower.

"Refining Grit in Academic Performance. The Mediational Role of Psychological Capital" (Luthans et al., 2019)	The study aimed to understand the mechanism underlying the association between Grit and academic performance.	It was a Quantitative study. The study was conducted on 176 Undergraduate business students at a Public University in the Midwest.	In the cross-sectional study, data were collected via a survey that included self-reported levels of Grit, Academic PsyCap, and demographic variables. Data were analyzed to examine correlations among control variables, academic performance, and grit.	The findings of the study showed that gritty students who are persistent toward their academic goals can develop psychological strength beyond non-cognitive variables, resulting in positive outcomes.

DISCUSSION

The concept of grit has gained attention as a potential predictor of academic success and persistence among students at various educational levels. Grit, defined as the passion and perseverance for long-term goals, is recognized for its role in enhancing student engagement and achievement. This narrative review synthesizes recent findings from quantitative studies regarding the relationship between grit and academic outcomes, self-regulated learning, and psychological factors such as motivation and self-efficacy.

Several studies illustrate that grit significantly predicts academic success and retention across diverse contexts. For instance, Strayhorn (2014) reported a strong correlation between grit and academic performance among Black male collegians, accounting for 24% of the variance in grade point average (Obeng et al., 2025). Similarly, Eskreis-Winkler et al. (2014) found that grit predicted retention not only in academic settings but also across various life domains, such as the military and the workplace (Bozpolat, 2016). These findings highlight the applicability of grit as a determinant of success across different demographic groups and educational settings.

Furthermore, the interplay between grit and self-regulated learning (SRL) underscores the complexity of predictors influencing academic achievement. Research by Arslan et al. (2013) demonstrated a positive correlation between grit and metacognitive awareness, suggesting that students with higher levels of grit are more likely to employ effective learning strategies (Arslan et al., 2013). Bowman's (2015) study corroborated this by indicating that students' grit dimensions significantly predicted educational satisfaction and academic engagement, linking these variables to self-regulation (Bowman et al., 2015).

The mechanism by which grit influences academic outcomes can be contextualized within the framework of psychological capital and self-efficacy. Luthans et al. (2019) explored how gritty students develop psychological resilience, which positively impacts their academic endeavors (Strunk & Steele, 2017). This assertion is supported by findings from (Caprara et al., 2011), which highlight the combined role of personality traits and self-efficacy beliefs in academic performance, reinforcing the idea that grit operates alongside other psychological

constructs to affect educational success (Caprara et al., 2011).

Moreover, the influence of grit has shown variability across gender and racial demographics. Research by O'Neal et al. (2016) highlighted that grit mediates academic achievement among first-generation college students, with implications for mental health and socioeconomic factors (Teng, 2021). Similarly, Dumfart and Neubauer (2016) found that grit showed a moderate correlation with academic success, though the magnitude of the correlation varied by the demographic composition of the studied cohorts (Tang et al., 2019).

In conclusion, the integration of grit into the framework of academic success underscores the importance of fostering non-cognitive skills in educational settings. This body of research advocates for the systematic evaluation and incorporation of grit into academic curricula and support systems, recognizing its role as a predictor of retention and performance as well as an essential component of students' holistic development.

CONCLUSION

This review concludes that grit is a promising non-cognitive predictor of academic success, persistence, and psychological functioning. Students with stronger perseverance and passion for long-term goals show better educational outcomes, greater adaptability, and reduced burnout. However, evidence also suggests that grit overlaps with constructs such as conscientiousness, and its predictive value is not absolute. Methodological shortcomings in existing studies—lack of longitudinal designs, cultural bias, and reliance on self-report instruments—limit certainty. Therefore, while grit should be recognized as an essential educational trait, it should not be viewed as a singular indicator of achievement. Future research must refine grit measurement, examine contextual moderating influences, and evaluate intervention models that cultivate genuine perseverance in diverse learner populations.

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