

## Research Article

Cite this article: Abdelshafy, E. E., Reiyad, S. A., Aldawsari, H. K., & Helali, M. (2025). Examining the Relationship Between Emotional Regulation and Academic Grit among High-Achieving University Students. *Educational Process: International Journal*, 15, e2025146.  
<https://doi.org/10.22521/edupij.2025.15.146>

Received February 7, 2025

Accepted April 8, 2025


Published Online April 14, 2025

**Keywords:** Academic grit, emotional regulation, high-achieving, university students

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## Examining the Relationship Between Emotional Regulation and Academic Grit among High-Achieving University Students

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### Abstract

**Background/purpose.** Emotional regulation and academic grit significantly influence students' academic success. This study aimed to examine the relationship between emotional regulation and academic grit among high-achieving university students. Additionally, it explored potential gender and academic specialization differences in these constructs. The study also aimed to provide insights that can inform interventions and strategies to support students in achieving academic excellence while maintaining their mental health.

**Materials/methods.** A predictive correlational descriptive study was conducted with a sample of 380 high-achieving students (217 females, 163 males) enrolled in undergraduate programs at Helwan University. They completed an online questionnaire that included the emotional regulation test (ERT) and the academic grit test (AGT).

**Results.** The findings indicated that emotional regulation was positively correlated to academic grit. Additionally, emotional regulation emerged as a significant positive predictor of academic grit. It was also found that female students exhibited higher levels of emotional regulation and academic grit than their male counterparts. Furthermore, there were no statistically significant differences in the scales of emotional regulation and academic grit, nor their sub-dimensions, based on academic specialization.

**Conclusion.** The study results supported previous studies indicating that emotional regulation was significantly and positively correlated with academic grit. Further studies testing this relationship will be crucial in developing interventions and activities aimed at enhancing the emotional regulation of high-achieving university students.

## 1. Introduction

High-achieving university students encounter a range of challenges that impact their psychological well-being, emotional regulation, and academic grit. These challenges can undermine their ability to maintain resilience and sustain motivation, making it essential to investigate the relationship between emotional regulation and academic grit. Emotional regulation and academic grit are two interconnected constructs that play essential roles in the academic success of high-achieving university students. Emotional regulation means the skill to handle and react to feelings in a way that is flexible and suitable. This skill is critical for students navigating the pressures and stresses of academic environments, enabling them to maintain focus, resilience, and composure when facing challenges. Effective emotional regulation encompasses an individual's ability to control and manage their emotions, facilitating adaptive responses to various situations and maintaining psychological balance. For high-achieving students, emotional regulation is essential for coping with the stress associated with academic demands, safeguarding mental well-being, and achieving their goals (McLaughlin et al., 2011; Schraub et al., 2013; McGlinchey et al., 2021; Chen et al., 2022; Fuentealba-Urra et al., 2023; Richard-Sephton et al., 2024; Oliveira et al., 2024).

In educational settings, emotional regulation significantly influences academic performance by promoting academic buoyancy (Nadeem et al., 2023; El-Ahmadi, 2023; Hosseini et al., 2023). While students with strong emotional regulation skills are better equipped to navigate challenging academic situations, maintaining focus and composure under pressure (Oram et al., 2017). Consequently, emotional regulation enhances the ability of high-achieving students to confront academic challenges and difficulties while sustaining a high level of academic performance. It also boosts their self-motivation, perseverance, and academic grit to achieve their academic goals. Furthermore, it aids in promoting their psychological and academic adjustment to the university environment by alleviating negative emotions stemming from academic pressures such as anxiety, stress, and frustration, thereby enhancing better academic outcomes.

In today's competitive educational landscape, academic grit is a vital determinant of student success, influencing not only academic performance but also to the development of life skills, adaptability, and psychological well-being (Li & Lin, 2024; Tang & Zhu, 2024). It signifies a student's perseverance toward long-term academic goals, even in the face of setbacks (Minnigh et al., 2024). Academic grit embodies the internal drive to persist in achieving academic goals despite encountering difficulties or obstacles. It includes commitment to goals, resilience in overcoming challenges, and sustained effort in academic performance. Academic grit serves as a strong predictor of success, reflecting a student's ability to excel in their studies while fostering resilience and adaptability to life's pressures. Thus, grit is a combination of sustained passion and continuous effort toward academic excellence, extending beyond mere achievement to cultivate a mindset capable of handling failures and stress constructively.

Wang (2021) emphasized the importance of grit in academic success, noting that students with higher levels of grit are more engaged in classroom activities and motivated to face challenges. Those who exhibit high grit demonstrate resilience and perseverance, enabling them to excel even when faced with obstacles and setbacks (El-Ahmadi, 2023; Hosseini et al., 2023).

As a psychological trait, grit significantly influences academic adaptation and achievement (Wolters & Hussain, 2015; Lam & Zhou, 2019; Jiang et al., 2021; Tang et al., 2022; Helal & Hassan, 2025). Tomlinson (2013) discussed the connection between grit, creativity, and passion, asserting that creative engagement often stems from deep personal interest and sustained effort. This aligns with Thomas Edison's well-known assertion that success comprises 10% inspiration and 90% effort (in: Reed & Jeremiah, 2017). In another context, grit is considered as a protective factor against behaviours that hinder effective academic performance (Wolters & Hussain, 2015), serving as a

buffer factor for students against the negative effects of stress. However, its effectiveness is influenced by the students' appraisal of academic stressors, perceiving them as positive challenges rather than threats (Kamtsios & Karagiannopoulou, 2015). Academic grit has also been linked to various psychological and academic variables, including motivation, psychological resilience, student engagement, passion, social competence, success, life satisfaction, and executive functions among students across different educational levels (Reraki et al., 2015; Light & Nencka, 2019; Datu et al., 2019; Fillion et al., 2020; Ma et al., 2020; Shamshirian et al., 2021; Liao & Chen, 2022; Caporale-Berkowitz et al., 2022; Lam & Zhou, 2022; Schimschal et al., 2022; Tang et al., 2022).

One of the primary contributions of this study is its ability to inform the design of psychological and academic support programs for university students. These programs, grounded in a comprehensive understanding of the relationship between emotional regulation and academic grit, aim to enhance students' mental health, improve their emotional self-control, and cultivate creativity and resilience. Such interventions can play a crucial role in equipping students with the tools necessary to sustain academic success and navigate constructive challenges. The connection between emotional regulation and academic grit in high-achieving students also carries significant practical implications. Understanding how these two constructs interact can assist educators, counselors, and mental health professionals in developing targeted interventions to optimize students' academic outcomes.

High-achieving students, characterized by their persistence and enthusiasm for long-term goals, are likely to benefit from robust emotional regulation skills, which enable them to manage their emotions, sustain focus, and remain resilient under pressure. In practice, enhancing emotional regulation through cognitive-behavioral techniques, mindfulness practices, and strategies to mitigate academic stress and improve time-management can amplify the effectiveness of academic grit. This may ensure that high-achieving students preserve their well-being while striving for excellence.

The current study aims to address a gap in the empirical literature within the Egyptian context. It seeks to investigate the relationship between emotional regulation and academic grit among high-achieving university students and potential gender and academic specialization differences. This research contributes to a deeper understanding of these constructs and their interplay in fostering academic success.

## **2. Literature Review**

The present research is grounded in the theoretical foundations of emotional regulation and academic grit, which have been extensively studied as predictors of academic success.

### **2.1. Emotional regulation**

As conceptualized by Gross (2002), emotional regulation refers to the ability to monitor, evaluate, and modify emotional responses to meet situational demands. This skill enables students to manage stress and maintain focus in the face of academic challenges, thereby significantly enhancing their performance and overall well-being. Emotional regulation is broadly characterized as the capacity to successfully and effectively modify or manage one's emotional responses to achieve desired outcomes (Gross, 1998). Hoseinzadeh & Asbaghi (2020) also described emotional regulation as the ability to control a wide range of positive and negative emotions and respond to emotional experiences in socially acceptable ways. Meanwhile, Quoidbach et al. (2015) defined emotional regulation as the intentional strategies individuals employ to alter their emotional experiences, aiming to improve mental health and adapt to challenging situations. This ability helps alleviate the impact of negative emotions, such as anxiety and depression.

Lazarus's cognitive-mediational theory posited that the cognitive appraisal of situations shapes emotional responses. This theory suggested that emotional regulation occurs through continuous

appraisal of situations and their effects on personal goals (Lazarus, 1991; Lazarus, 1993). Thompson's emotion regulation theory introduced a framework for emotional regulation that emphasizes the internal and external processes responsible for monitoring, assessing, and modifying emotional responses. Internal processes encompass cognitive and physiological strategies employed by individuals to control their emotions, such as positive thinking and relaxation techniques, which help in modifying emotions in ways that enhance mental health and facilitate achieving goals. External processes pertain to environmental and social influences that influence emotional regulation, including social support or environmental adjustments, which can serve as significant sources of emotional stability (Thompson, 1994).

Furthermore, as noted by Thompson, emotional regulation is a dynamic and ongoing process influenced by various factors such as age, past experiences, and cultural context. This indicates that emotional regulation is not static; it evolves over time and with exposure to new situations and experiences. The theory also highlighted how emotional regulation skills develop across different life stages, reflecting an individual's maturity and ability to manage emotions more effectively over time (Thompson & Meyer, 2007). While Gross (2014) pointed out that emotional regulation is a complex process encompassing several fundamental dimensions that contribute to effective emotion management. These dimensions include emotional awareness, emotion regulation strategies, control of emotional expression, emotional recovery, and understanding of emotional sequences.

As a psychological process, emotional regulation enables individuals to manage and adjust their emotional responses to fit various situations, thereby fostering psychological balance and overall well-being. Emotional regulation can occur both consciously—through learned strategies like cognitive reappraisal or problem-solving—and unconsciously, through defence mechanisms that diminish emotional intensity (Gross, 2002).

Synthesizing these perspectives, emotional regulation can be understood as a set of processes that govern and influence the type and intensity of emotions experienced or perceived. These processes include monitoring, evaluating, and modifying emotional responses to ensure they align with social norms and values. Emotional regulation also entails preventing or controlling emotional experiences and expressions that could disrupt an individual's social relationships or psychological adjustment. At its core, emotional regulation is the ability to harmonize and direct emotions effectively to achieve specific goals, ensuring both individual well-being and socially acceptable behaviour.

## **2.2. Academic Grit**

Psychological research has identified grit as a positive, non-cognitive trait that embodies an individual's passion and relentless pursuit of long-term goals. This trait serves as a crucial motivator, encouraging students to persevere through challenges and obstacles in their academic journeys. The concept of grit is closely linked to other psychological constructs such as persistence, resilience, hardiness, ambition, need for achievement, and conscientiousness. These constructs collectively reflect how individuals approach their tasks and navigate adversity, rather than merely evaluating their cognitive abilities (Duckworth & Yeager, 2015).

Academic grit has been shown to positively influence students' academic behaviours and outcomes by acting as a protective mechanism during periods of frustration, boredom, or setbacks in the learning process (Duckworth et al., 2007). Duckworth et al. (2007) and Zhao & Wang (2023) defined academic grit as a combination of passion and perseverance toward long-term goals, consistently identified as a critical factor in academic success. Studies indicate that students with higher grit are more likely to achieve their academic goals, even when faced with challenges. Clark & Malecki (2019) described academic grit as a personality trait, characterized by persistence and passion for achieving long-term goals. According to their definition, perseverance involves dedication

to hard work and overcoming failures, while passion reflects enthusiasm and commitment to reaching academic objectives.

Grit is a trait that can be learned, acquired and strengthened throughout life. Jaljal & Hindawi (2023) expanded this definition, emphasizing that academic grit encompasses not only sustained effort and perseverance but also enthusiasm for the learning process. It reflects a student's ability to maintain motivation and continue striving toward their desired goals despite the challenges and difficulties they face. Yanling et al. (2024) defined grit as the ability to exert consistent effort to complete demanding tasks, underscoring its significance as a factor in academic success. Collectively, these definitions highlight the multifaceted nature of academic grit, emphasizing its role in enabling students to maintain their focus and determination over prolonged periods. Academic grit serves as a vital psychological resource, empowering students to tackle the challenges of demanding academic environments while nurturing resilience and a passion for lifelong learning.

Furthermore, grit embodies persistence over extended periods as an indicator of long-term success. Students with high grit demonstrate greater engagement and resilience in pursuing their goals, even when confronted with failure (Wang, 2021). Additionally, grit enables students to perceive academic pressures as challenges to overcome rather than threats, thereby mitigating the negative effects of stress (Muhibbin & Wulandari, 2021). Datu et al. (2017) also explained that there are three dimensions of academic grit, perseverance of effort, consistency of interests, and anticipation of challenges. While Clark & Malecki (2019) found that grit comprises two main components: persistence and passion, both of which foster long-term commitment to academic goals.

### ***2.3. Grit and Its Impact on Students' Academic Achievement***

From a mental health perspective, high-achieving students are characterized by their exceptional academic achievement in fields such as humanities, social sciences, natural sciences, and mathematics. They exhibit advanced cognitive abilities alongside specific psychological traits associated to their academic excellence and success, as well as strong creative thinking skills (Jarwan, 1999). Academic grit is acknowledged as a vital factor in explaining students' achievements in higher education. According to Duckworth (2016) and Duckworth & Quinn (2009), grit has a greater impact on academic success than intelligence. Students with high levels of grit exhibit a strong commitment to learning environments that require dedication, making grit a significant predictor of academic success, particularly among high achievers. Some research highlights the importance of grit in shaping academic outcomes. Studies indicate that grit, which encompasses perseverance and passion, serves as a reliable indicator of long-term success. Duckworth's (2016) studies underscored grit as a key determinant of persistence and achievement in demanding academic contexts. Kelly et al. (2014) emphasized the role of grit in fostering resilience and sustained effort, both of which are essential for academic excellence.

There are several studies dealt with emotional regulation and academic grit among university students in relation to some variables. Nadeem et al. (2023) examined the relationship between emotional regulation and academic performance among university students. Its results showed that there was a statistically significant correlation between emotional regulation and academic performance. Oliveira et al. (2024) found that university students with low emotional regulation reported low levels of subjective well-being and high levels of repetitive negative thinking. Isa & Al-Mukhtar (2024) also investigated the difficulties of emotional regulation among university students. The study found that university students showed moderate levels of emotional regulation difficulties depending on gender (male, female) and specialization (scientific, humanities). While Li & Lin (2024) found that there was a relationship between academic emotions and Chinese college students' grit.

Furthermore, several studies have shown that both emotional regulation and academic grit play a pivotal role in enhancing students' academic achievement. For example, De Castella et al. (2018) emphasized the importance of emotional regulation in improving academic performance by reducing negative emotions and enhancing focus, while Walters and Hussain (2015) found that grit acts as a protective factor that reduces behaviours that hinder achievement. Wang (2021) found that academic grit is positively associated with classroom engagement and willingness to face challenges.

There were attempts to examine the relationship between variables related to emotional regulation and grit across various academic settings. Kalia et al. (2022) conducted two studies to identify the correlation between the grit facets and two emotional regulation strategies (cognitive reappraisal and expressive suppression) in two samples: college students and community adults. The results indicated a positive correlation between the intentional aspects (grit consistency and grit perseverance) and the cognitive reappraisal strategy, while expressive suppression was negatively associated with consistency and positively associated with perseverance; this suggests that individuals with a high level of grit may exhibit healthy emotional functioning. The study by Agustina & Widyastuti (2023) aimed to explore the relationship between emotional regulation and grit among 210 student athletes, and its findings revealed no correlation between emotional regulation and grit.

Anto et al. (2023) examined the relationship between both grit, emotional intelligence, and decision-making capacity in emerging adults. There was a positive correlation between emotional intelligence and grit, while no relationship between grit and decision-making; this aligns with the conclusions of Chaudhary et al. (2024). Karvendhan & Jayakumar (2024) also sought to determine the nature of the relationships between emotional intelligence, grit, and academic performance for 320 undergraduate engineering students. The results showed positive correlations between academic performance and both emotional intelligence and grit, with no differences in emotional intelligence and grit based on gender.

However, the impact of grit is not consistent across all contexts or academic disciplines. Some researchers have questioned its universal applicability. Bazelais et al. (2016) found that grit might not be a decisive factor in certain fields or courses, suggesting that its influence could depend on the specific demands and characteristics of the academic context. Conversely, Mason (2018) and Alhadabi & Karpinski (2020) found that grit positively correlates with academic achievement, indicating that its effects may be more pronounced in environments where persistence and sustained effort are crucial to success.

Despite this extensive body of research, a gap remains in exploring the relationship between emotional regulation and academic grit within the Egyptian cultural context, particularly among high-achieving university students. This study aims to contribute to the development of psychological and academic support strategies by providing a deeper understanding of the psychological mechanisms that underpin academic excellence. This understanding will aid in designing effective programs to enhance students' psychological resilience and equip them to manage academic stress more effectively.

Collectively, these studies highlight the interconnectedness of emotional regulation and academic grit, indicating that their combined influence is vital for academic success. The current study builds on this foundation by examining the relationship between these constructs among high-achieving university students in the Egyptian context, where cultural and educational dynamics may pose unique challenges and opportunities for students. This study sought to address the following questions:

1. Q1: Is there a significant positive correlation between emotional regulation and academic grit among high-achieving university students?

2. Q2: Are there significant gender differences in emotional regulation and academic grit among high-achieving university students?

3. Q3: Are there significant differences in emotional regulation and academic grit based on academic specialization among high-achieving university students?

### 3. Methodology

#### 3.1. Methods and Sample

A predictive correlational study was conducted among high-achieving university students enrolled at Helwan university in Egypt. A purposive sampling technique was employed to select study participants based on specific inclusion and exclusion criteria. Inclusion criteria required participants to be aged between 19 and 24 and to have achieved high academic performance in the previous academic year (i.e. those who obtained a very good or excellent grade in all scientific and humanitarian disciplines). The sample size included a larger group of 380 participants, comprising 163 males and 217 females aged 19-23 years ( $M = 20.10$  years;  $SD = 1.172$  years). The following table shows the demographic variables of the study sample.

**Table 1.** Distribution of study participants according to demographic variables

Sample		N	(%)
Gender	Males	163	42.89%
	Females	217	57.11%
Academic specialization	Scientific	158	41.58%
	Humanitarian	222	58.42%
Academic year	Second year	241	63.42%
	Fourth year	139	36.58%
Total		380	100%

#### 3.2. Procedures of data collection

The study tools were utilized from March 4th to May 30th, 2024. All participants completed informed consent forms before data collection, confirming that participation was entirely voluntary, that all information gathered would be kept strictly confidential, and that the data would be used solely for research purposes only. All study procedures followed were in compliance with the declaration of Helsinki (1964) and the ethical standards of the American psychological association (APA, 2010). The survey link included two tools—the academic grit Scale and the emotional regulation scale—described below, along with a questionnaire regarding participant demographics.

#### 3.3. Instruments

Data was collected using emotional regulation and academic grit scale for high-achieving university students (prepared by the researchers). Participants completed the instruments within approximately 15-20 minutes.

##### 3.3.1. Demographic Data Questionnaire

Questions 1-4 relate to demographic information, including age and gender (Males -Females), academic specialization (Scientific / Humanitarian), Academic year (Second year / Fourth year).

### 3.3.2. The emotional regulation scale

The initial version of the emotional regulation scale developed by the researchers comprised a total of 24 items representing life situations designed to measure the ability of high-achieving students to regulate their emotions. The items were categorized into three distinct dimensions: ability to control emotions, awareness of emotions, and accepting emotional response. The scale was presented to 10 students from the study population who were not included in the study sample to ensure that they fully understood the items. The researchers employed Pearson's correlation coefficient to assess the degree of correlation between the items and the total score of the emotional regulation scale within the psychometric research sample, which included 230 students from Helwan University. The results indicated that the correlation coefficients between the items and the total score of the emotional regulation scale ranged from 0.307\*\* to 0.562\*\*, which are statistically significant values exceeding the acceptable limit (0.30), with the exception of the items (5, 15), which showed no correlation with the total score of the scale; thus, the final scale consisted of 22 items.

An exploratory factor analysis (EFA) was performed to evaluate the validity of the instrument. According to the Kaiser–Meyer–Olkin (KMO) test, the sample size was sufficient to conduct the EFA test (KMO=0.812; Bartlett's sphericity  $p=0.000$ ). An initial evaluation was conducted to determine the eigenvalues associated with each data factor. Notably, three components displayed eigenvalues exceeding Kaiser's threshold of (1) and together accounted for 39.937% of the total variance. Factor loading after rotation is presented in Table 2.

**Table 2.** Exploratory factor analysis of the emotional regulation scale

Items	Ability to control emotions	Items	Awareness of emotions	Items	Accepting emotional response
6	0.734	13	0.680	14	0.642
18	0.620	16	0.624	11	0.593
3	0.616	22	0.609	17	0.578
21	0.610	10	0.602	20	0.576
12	0.602	4	0.572	19	0.531
9	0.550	1	0.445	2	0.528
24	0.544			8	0.472
23	0.520			7	0.452
<b>Eigenvalues</b>	3.388	<b>Eigenvalues</b>	2.729	<b>Eigenvalues</b>	2.669
<b>% of Variance</b>	15.40%	<b>% of Variance</b>	12.41%	<b>% of Variance</b>	12.13%
<b>Cumulative%</b>	15.40%	<b>Cumulative%</b>	27.80%	<b>Cumulative%</b>	39.94%

Table 2 shows Cronbach's alpha and McDonald's omega coefficients were calculated for the dimensions and the total score to ensure the reliability of the scale. The scale enjoyed a high degree of reliability, as indicated by the calculated Cronbach's ( $\alpha$ ) and omega ( $\omega$ ) coefficients, which reached 0.729-0.729 for the ability to control emotions, 0.748-0.747 for awareness of emotions, 0.669-0.671 for accepting emotional response, and for the scale (0.842-0.834).



### 3.3.3. The academic grit scale

The initial version of the academic grit scale developed by the researchers comprises 30 items designed to evaluate the capacity of high-achieving students to confront challenges and overcome obstacles in academic contexts. These items were categorized into three distinct dimensions: academic stress tolerance, academic ambition, and academic passion. To ensure its clarity and comprehensibility, the scale was initially administered to a group of 10 students drawn from the study population but excluded from the final research sample. Subsequently, Pearson's correlation coefficient was employed to assess the correlations of items with the total scale score based on a sample of 230 undergraduate students from Helwan University. Items numbered 6, 28, 29, and 30 were excluded from the scale as their correlation coefficients with the total score of the scale fell below the threshold of 0.30. For the remaining items, correlation coefficients ranged from 0.307\*\* to 0.554\*\*, which are statistically significant values and exceeded the minimum acceptable level of 0.30. As a result of this refinement process, the scale consisted of 26 items.

The researchers conducted an exploratory factor analysis (EFA) to validate the academic grit scale. The findings confirmed that the sample size was sufficient for EFA based on the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy (0.795) and Bartlett's test of sphericity ( $p=0.000$ ). An initial evaluation was performed to identify the eigenvalues associated with each factor in the data. Notably, three components stood out with eigenvalues exceeding Kaiser's criterion of 1, collectively explaining 38.928% of the total variance. The Factor loading after rotation is presented in Table 3.

**Table 3.** Exploratory factor analysis of the academic grit scale

Items	academic stress tolerance	Items	academic ambition	Items	academic passion
13	0.689	8	0.701	9	0.712
7	0.614	17	0.647	27	0.652
1	0.611	11	0.636	3	0.560
10	0.583	26	0.621	21	0.549
24	0.582	20	0.533	18	0.548
16	0.541	15	0.527	12	0.529
4	0.528	5	0.505		
22	0.449	23	0.459		
19	0.403	2	0.447		
25	0.356	14	0.375		
<b>Eigenvalues</b>	3.735	<b>Eigenvalues</b>	3.393	<b>Eigenvalues</b>	2.993
<b>% of Variance</b>	14.37%	<b>% of Variance</b>	13.05%	<b>% of Variance</b>	11.51%
<b>Cumulative%</b>	14.37%	<b>Cumulative%</b>	27.42%	<b>Cumulative%</b>	38.93%

Table 3 presents the reliability assessment of the academic grit scale, as determined through the calculation of Cronbach's alpha ( $\alpha$ ) and McDonald's omega ( $\omega$ ) coefficients for its dimensions and the overall scale. The results indicate a high level of reliability, with coefficient values ranging from 0.786 to 0.776 for the academic stress tolerance dimension, 0.800 to 0.798 for academic ambition, 0.691 to 0.682 for academic passion, and from 0.862 to 0.853 for the total scale.

## 4. Results

The study mainly focused on exploring the relationship between emotional regulation and academic grit among a sample of high-achieving students (N= 380). Data analysis was conducted utilizing SPSS software (version 26). Initially, descriptive statistical analyses were carried out, followed by the assessment of psychometric properties to ensure the reliability and validity of measurement tools. Subsequently, inferential statistical techniques were employed to answer the research questions. These included the computation of Pearson correlation coefficients to evaluate associations and the application of independent sample t-tests to compare group differences.

### 4.1. Findings of Descriptive statistics:

The skewness, kurtosis, arithmetic means and standard deviations of the study tools were calculated, and the examination results showed that the data exhibited a normal distribution.

**Table 4.** Descriptive statistics on emotional regulation and academic grit of high-achieving university students (N=380)

Study variables	Min	Max	Mean	Std.	Skewness	Kurtosis
ability to control emotions	10	24	18.12	3.029	-0.009	-0.304
awareness of emotions	6	18	14.15	2.578	-0.385	-0.521
accepting emotional response	10	24	19.90	2.802	-0.887	0.910
total score of emotional regulation	30	66	52.16	7.091	-0.268	0.252
academic stress tolerance	15	30	23.93	3.082	-0.199	-0.524
academic ambition	15	30	24.09	3.016	-0.397	-0.211
academic passion	8	18	14.61	2.225	-0.226	-0.625
total score of academic grit	46	78	62.63	6.257	0.005	-0.319

### 4.2. Analysis of correlation and regression

A correlation analysis was performed to examine the relationship between emotional regulation and academic grit. The findings of correlation analysis indicated a statistically significant positive association between these variables, suggesting that students exhibiting higher levels of emotional regulation tend to demonstrate elevated levels of academic grit. Detailed results are presented in table 5.

**Table 5.** Correlations coefficient between study variables (N=380)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) ability to control emotions	----	0.602**	0.558**	0.867**	0.404**	0.382**	0.296**	0.489**
(2) awareness of emotions		----	0.535**	0.832**	0.440**	0.416**	0.287**	0.519**
(3) accepting emotional response			----	0.828**	0.315**	0.304**	0.242**	0.388**
(4) total score of emotional regulation				----	0.457**	0.435**	0.327**	0.551**
(5) academic stress tolerance					----	0.475**	0.302**	0.829**
(6) academic ambition						----	0.196**	0.786**
(7) academic passion							----	0.599**
(8) total score of academic grit								----

(\*\*) Significant at 0.001

Table 5 presents the results of the correlation analysis, highlighting significant positive correlations between emotional regulation and various dimensions of academic grit. Specifically, emotional regulation demonstrated a strong positive correlation with overall academic grit ( $r = 0.551$ ,  $p < .001$ ), academic stress tolerance ( $r = 0.457$ ,  $p < .001$ ), academic ambition ( $r = 0.435$ ,  $p < .001$ ), and academic passion ( $r = 0.327$ ,  $p < .001$ ). The ability to control emotions also showed positive correlations with academic stress tolerance ( $r = 0.404$ ,  $p < .001$ ), academic ambition ( $r = 0.382$ ,  $p < .001$ ), academic passion ( $r = 0.296$ ,  $p < .001$ ), and overall academic grit ( $r = 0.489$ ,  $p < .001$ ). Similarly, awareness of emotions was positively correlated with academic stress tolerance ( $r = 0.440$ ,  $p < .001$ ), academic ambition ( $r = 0.416$ ,  $p < .001$ ), academic passion ( $r = 0.287$ ,  $p < .001$ ), and overall academic grit ( $r = 0.519$ ,  $p < .001$ ). Additionally, accepting emotional response showed positive correlations with academic stress tolerance ( $r = 0.315$ ,  $p < .001$ ), academic ambition ( $r = 0.304$ ,  $p < .001$ ), academic passion ( $r = 0.242$ ,  $p < .001$ ), and overall academic grit ( $r = 0.388$ ,  $p < .001$ ). These results indicate a clear trend where higher scores in emotional regulation correspond with increased levels of academic grit and its subdimensions.

The researchers posited a predictive relationship between emotional regulation and academic grit. Linear regression analysis was used to examine the relationship between emotional regulation and academic grit, as detailed in tables 6 and 7. Controlling for three demographic variables, the analysis revealed that emotional regulation accounted for 33.3% of the variance in academic grit scale scores ( $R = 0.551$ ;  $R^2 = .755$ ; Adjusted  $R^2 = 0.750$ ;  $F = 67.32$ ,  $p < .05$ ). These findings suggest a moderate prediction capacity of emotional regulation in explaining academic grit.

Table 6. ANOVA analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4500.456	1	4500.456	164.592	.000b
	Residual	10335.7	378	27.343		
	Total	14836.16	379			

a Dependent Variable: academic grit  
b Predictors: (Constant), emotional regulation

Table 7. Linear regression analysis for correlations between emotional regulation and academic grit

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.551a	0.303	0.302	5.229
Constant= 37.284, B=0.486, Beta= 0.551			T= 12.829	at p. value=0.000
Predictors: (Constant), emotional regulation				

### 4.3. Independent sample T Test analysis

#### 4.3.1. Differences in study variables according to gender

Differences in participants' responses on the emotional regulation and academic grit scales according to gender were investigated by using the independent sample t-test, and the results are shown in Table 8.

Table 8. The t-test analysis results according to gender (N= 380)

Study variables	Gender	N	M	SD	Df.	t-value
ability to control emotions	Male	163	17.63	2.912	378	-2.772**
	Female	217	18.49	3.069		
awareness of emotions	Male	163	13.55	2.587	378	-4.018**
	Female	217	14.60	2.483		
accepting emotional response	Male	163	19.20	2.913	378	-4.285**
	Female	217	20.42	2.602		
Overall score of emotional regulation	Male	163	50.37	6.949	378	-4.363**
	Female	217	53.51	6.912		
academic stress tolerance	Male	163	23.52	3.042	378	-2.275*
	Female	217	24.24	3.082		
academic ambition	Male	163	23.55	2.982	378	-3.108*
	Female	217	24.51	2.983		
academic passion	Male	163	14.29	2.354	378	-2.422*

Study variables	Gender	N	M	SD	Df.	t-value
Overall score of academic grit	Female	217	14.84	2.098	378	-3.503**
	Male	163	61.36	6.163		
	Female	217	63.59	6.168		

(\*\*) Significant at 0.01, (\*) Significant at 0.05

Table 8 indicates that female students demonstrate higher levels of overall emotional regulation and academic grit (M = 53.51, 63.59, SD = 6.912, 6.168), as well as higher scores across each specific dimension. In terms of emotional regulation-related factors, females achieved greater mean scores in ability to control emotions (M = 17.63, 18.49, SD = 2.912, 3.069), awareness of emotions (M = 13.55, 14.60, SD = 2.587, 2.483), accepting emotional response (M = 19.20, 20.42, SD = 2.913, 2.602). Similarly, with regard to academic grit, females exhibited higher levels of academic stress tolerance (M = 23.52, 24.24, SD = 3.082), academic ambition (M = 23.55, 24.51, SD = 2.982, 2.983), and academic passion (M = 14.29, 14.84, SD = 2.354, 2.098) in comparison with their male counterparts. These findings collectively suggest that female students display significantly higher abilities for emotional regulation and academic grit when compared with male students.

#### 4.3.2. Differences in study variables according to academic specialization

Differences in participants' responses on the emotional regulation and academic grit scales according to academic specialization were investigated by using the independent sample t-test, and the findings are shown in Table 9.

**Table 9.** The t-test analysis results according to academic specialization (N= 380)

Study variables	specialization	N	M	SD	Df.	t-value	Sig.
ability to control emotions	Scientific	158	17.94	3.065	378	-0.952	Not
	Humanitarian	222	18.24	3.004			
awareness of emotions	Scientific	158	14.22	2.565	378	0.432	Not
	Humanitarian	222	14.10	2.593			
accepting emotional response	Scientific	158	19.85	2.865	378	-0.289	Not
	Humanitarian	222	19.93	2.762			
overall score of emotional regulation	Scientific	158	52.01	7.226	378	-0.363	Not
	Humanitarian	222	52.27	7.008			
academic stress tolerance	Scientific	158	23.80	3.047	378	-0.729	Not
	Humanitarian	222	24.03	3.109			
academic ambition	Scientific	158	23.94	2.926	378	-0.827	Not
	Humanitarian	222	24.20	3.081			
academic passion	Scientific	158	14.51	2.208	378	-0.731	Not
	Humanitarian	222	14.68	2.240			
Overall score of academic grit	Scientific	158	62.25	6.072	378	-1.018	Not
	Humanitarian	222	62.91	6.384			

Table 9 shows that "t" values reached (-0.952, 0.432, -0.289, -0.363, -0.729, -0.827, -0.731, -1.018), all of which are statistically insignificant. This indicates that there are no significant differences attributed to academic specialization (scientific, humanitarian) in the overall scores of the emotional regulation and academic grit scales, including their sub-dimensions.

## 5. Discussion

The findings provide significant insights into the role of emotional regulation in enhancing academic grit, supporting previous studies and shedding light on gender differences in academic grit and emotional regulation.

### 5.1. Associations between emotional regulation and academic grit

The findings revealed a significant positive correlation between emotional regulation and academic grit. This outcome aligns with Gross's (2002) research, which highlighted the pivotal role emotional regulation plays in managing stress and sustaining focus on long-term objectives— an essential component of academic grit. Similarly, Duckworth et al. (2007) characterized grit as a fusion of passion and perseverance, which closely interacts with emotional regulation strategies to enable students to navigate setbacks and persist in their academic pursuits. Seligman (2011) further observed that students with high levels of grit are more adept at exercising self-control and structuring their time effectively to achieve their goals, reflecting advanced self-control skills. In the same context, Muhibbin & Wulandari (2021) demonstrated that emotional regulation helps students to perceive academic pressures as manageable challenges, thereby reducing the negative effects of stress.

After analyzing previous studies and research, researchers believe that emotional regulation is one of the essential tools for reducing academic stress among students. Their ability to effectively regulate and modify negative emotions enables them to reduce the levels of stress and anxiety associated with academic challenges and enhances their ability to focus and self-regulate. This, in turn, fosters achieving academic goals and bolsters academic performance (Gross & John, 2003; Duckworth et al., 2007; Allen et al., 2021; Almegewly et al., 2022; El-Ahmadi, 2023; Shengyao et al., 2024).

The findings also demonstrated that academic grit can be positively predicted (33.3%) based on high-achieving students' performance on the emotional regulation scale. This outcome may be attributed to the fact that high-achieving students are characterized by having clear and high academic goals and ambitions, necessitating the development of skills and abilities such as academic grit and emotional regulation to confront the obstacles and challenges that hinder the achievement of these goals. These results align with the research results of Clark & Malecki (2019), which suggest that emotional regulation enhances perseverance and passion, thereby supporting long-term goal achievement in academic contexts. This underscores the substantial impact of psychological and emotional factors on academic performance, highlighting the critical need to foster such psychological skills in students. Additionally, the results of several studies, including study of Oriol et al. (2017), have supported existence of a positive correlation between self-control— an integral component of emotional regulation — and grit.

Based on these findings, emotion regulation emerges as a fundamental factor that enables students to cope with academic stress and challenges over extended periods. High-achieving students often experience intense pressure due to high expectations and perfectionist tendencies, whether self-imposed or influenced by their environment. Emotion regulation plays a crucial role in reducing anxiety and stress, allowing students to manage negative emotions and lower psychological distress. This, in turn, helps them to maintain focus on their academic goals rather than being preoccupied with fears of failure. Empirical evidence from several studies further substantiates the

statistically significant associations between emotional regulation, academic performance, and grit (Credé et al., 2017; De castella et al., 2018; Mason, 2018; Clark & Malecki, 2019; Alhadabi & Karpinski, 2020; Kalia et al., 2022; Anto et al., 2023; Karvendhan & Jayakumar, 2024; Nadeem et al., 2023; Li & Lin, 2024). However, the study of Agustina & Widyastuti (2023) showed contradictory findings, where no correlation between emotional regulation and grit was reported.

Additionally, emotion regulation contributes to enhancing psychological resilience among high-achieving students. Given the frequent academic challenges they faced, effective regulation strategies—such as cognitive reappraisal—enable these students to adopt more positive perspectives, thereby enhancing their adaptability and increasing their chances of success. Emotion regulation also supports academic performance by reducing academic burnout and enhancing satisfaction with academic life. Studies by Ceschi et al. (2016) and Zhang et al. (2018) suggest that academic grit operates as a protective mechanism for individual's mental health by reducing stress, anxiety and depression through minimizing exposure to stressful life events.

Also, students with high grit are characterized by their exceptional ability to achieve their goals persistently despite encountering various difficulties, obstacles, or limited external reinforcement. Therefore, it is necessary for higher education institutions to pay attention to cultivating academic grit and emotional regulation as integral and essential factors when designing strategies and methods aimed at overcoming negative factors that influence students' educational outcome and academic performance.

### ***5.2. Differences in emotional regulation and grit according to gender***

The study found statistically significant differences due to gender in both emotional regulation and academic grit, with females outperforming males across all measured dimensions. These findings align with prior studies, such as that conducted by Gardener et al. (2013) which suggest that females are generally more adept at recognizing and managing emotions. Similarly, other studies (Garnefski et al., 2001; Rey Peña & Pacheco, 2012; Droulers et al., 2015) have showed statistically significant differences between males and females in terms of emotional regulation and its strategies in favor of females. Moreover, females have been shown to have greater flexibility in employing emotional regulation strategies than males, as evidenced by Kwon et al. (2013) and Goubet & Chrysiou (2019). However, Mazloom (2017) and Isa & Al-Mukhtar (2024) indicated that there was no gender-based differences in emotional regulation.

Also, the findings of this study align with those of prior studies such as (Jaeger et al., 2010; Kannangara et al., 2018; Ruttencutter, 2018; Zaki, 2021; Hassan, 2024; Annisa et al., 2024), all of which indicated that females have higher levels of academic grit compared to males, but these results contradicted those of other studies such as (Duckworth & Quinn, 2009; Ali & Rahaman, 2012; Hodge et al., 2018; Clark et al., 2019; Shah, 2021; Zaki, 2021; Zayed, 2023), which found no significant differences between males and females in academic grit.

Domes et al. (2010) highlighted that females often exhibit higher levels of perseverance and commitment, potentially explaining their elevated grit scores in this study. In the context of Egyptian society, these differences could be linked to females' motivation to prove themselves and challenge societal norms that see them less than males; thus, it pushes them to achieve high academic rates. Furthermore, the rapid technological and cultural advancements and changes in society have provided the opportunity for females to learn, excel, strive and persist through academic obstacles to achieve their academic and social goals.

### ***5.3. Differences in emotional regulation and grit due to Academic Specialization***

No significant differences were found in emotional regulation or academic grit based on academic specialization. This result align with findings by Hodge et al. (2018), which indicated that

grit may influence findings differently across disciplines, but these differences may not often reach statistical significance. These findings suggest that emotional regulation and grit are universal constructs influencing academic success, regardless of the specific field of study. Meanwhile, This suggests that these psychological factors are not specialization-specific but rather reflect essential psychological capacities needed across all academic fields. This supports the notion that academic success is not solely dependent on cognitive skills related to a particular discipline but also on emotional regulation and perseverance in the face of challenges. Given these findings, developing training programs that enhance emotion regulation skills could have a positive impact on all students, regardless of their academic specialization, ultimately promoting mental well-being and academic success. Furthermore, these results are reinforced by studies conducted by Khasawneh (2020), Zaki (2021), Zayed (2023), and Al-Shehri (2024), all of which indicated that there was no statistically significant effect of academic specialization on emotional regulation and academic grit.

The absence of differences in emotional regulation and academic grit across academic specializations could be attributed to the characteristics and abilities of high-achieving students. These abilities and traits include achievement motivation, self-control, perseverance, time management, academic ambition, psychological and academic adjustment with the academic environment, emotional competence, and other characteristics (Horowitz et al., 2009; Cross, 2010; Kuznetsova et al., 2024) that contribute to reducing the impact of academic specialization on the two variables. Additionally, the researchers suggested that these results may stem from the fact that students, regardless of their specialization (scientific or humanitarian), experience similar circumstances and are exposed to the same social and emotional situations in the university environment. This may lead them to adopt almost similar strategies and mechanisms when facing academic challenges and problems, which also influence the high-achieving students' ability of emotional regulation and academic grit, regardless of their academic specialization.

## 6. Conclusion

The study emphasizes the critical role of emotional regulation in fostering academic grit among high-achieving university students. The significant correlation observed between these constructs underscores the need for educational programs and initiatives designed to enhance emotional regulation skills, thereby supporting perseverance and passion in academic pursuits. Additionally, the gender differences observed in this study point to the necessity of tailoring interventions to address the diverse needs of students. Interestingly, the lack of significant differences based on academic specialization emphasizes the universal applicability of emotional regulation and grit in academic settings. This finding advocates for broad implementation of emotional regulation training programs across diverse disciplines.

## 7. Suggestion

- The study highlights the importance of integrating emotional regulation training within academic contexts.
- Findings underline the need for universities to embed emotional regulation skills into their curricula and psychological support services, aiming to promote students' academic grit.
- Educators are encouraged to integrate emotional regulation techniques into courses or workshops aimed at developing students' resilience and perseverance.
- Universities should prioritize the implementation of workshops, seminars, and resources designed to improve students' emotional regulation and academic grit, such as programs focused on mindfulness, emotional reappraisal, and stress management. These programs should be tailored to address academic pressures and improve students' ability to cope with setbacks and failures in their academic journey.



- Academic advisors, counselors, and educators should be encouraged to provide an environment that nurtures both emotional regulation and academic grit.

## Declarations

**Author Contributions.** Conceptualization & methodology, S.R.; validation, investigation & formal analysis, E.A. resources, M.H., and H.A.; data curation, writing—original draft preparation, S.R. and E.A.; writing—review and editing, M.H.; visualization, H.A.; project administration, S.R. and M.H. All authors have read and agreed to the published version of the manuscript. All authors have read and agreed to the published version of the manuscript.

**Conflicts of Interest.** The authors declare no conflict of interest.

**Ethical Approval.** Please Helwan University's College of Education approved the study and allowed the researchers to begin the research. The participants were then required to sign an informed consent form. This was done for the students who joined up to take part in the study.

**Data Availability Statement.** The data supporting the findings of this study are available on request from the corresponding author. The data is not publicly available because they contain information that could compromise the privacy of study participants.

**Acknowledgments.** The authors acknowledge the Deanship of Scientific Research at King Faisal University, Saudi Arabia for financial support under annual research grant number [GrantKFU250848].

## References

- Agustina, N. A., & Widyastuti, W. (2023). Relationship between Emotion Regulation and Grit in High School Athlete Students: Hubungan antara Regulasi Emosi dengan Grit pada Siswa Atlet di Sekolah Menengah Atas. *Indonesian Journal of Innovation Studies*, 21, 10.21070/ijins.v21i.811. <https://doi.org/10.21070/ijins.v21i.811>
- Alhadabi, A., & Karpinski, A. (2020). Grit, self-efficacy, achievement orientation goals, and academic performance in university students. *International Journal of Adolescence and Youth*, 25(1), 519–535. <https://doi.org/10.1080/02673843.2019.1679202>
- Ali, J., & Rahaman, A. (2012). A comparative study of grit between male and female fencers of manipur. *Shield, Research Journal of Physical Education & Sports Science*, 7, 32–36.
- Allen, R. E., Kannangara, C., & Carson, J. (2021). True grit: How important is the concept of grit for education? A narrative literature review. *International Journal of Educational Psychology*, 10(1), 73. <https://doi.org/10.17583/ijep.2021.4578>
- Almegewly, W. H., Rawdhan, A., Saleh, M., Alrimal, M., Alasmari, R., Alhamad, S., Almuqri, R., Aljebreen, M., Alsubaie, H., & Farghaly Abdelalidem, S. M. (2022). Correlation between emotional intelligence and academic achievement among undergraduate nursing students. *International Journal of Africa Nursing Sciences*, 17, 100491. <https://doi.org/10.1016/j.ijans.2022.100491>
- Al-Shehri, S. (2024). Mindfulness and its relationship to emotional regulation among King Saud University students. *Arab Studies in Education and Psychology, Association of Arab Educators*, 152(1), 373-424. <https://doi.org/10.21608/saep.2024.393947>
- Annisa, D., Sutrisno, H., & Laksono, E. W. (2024). Factors underlying student academic grit: Development and validation of the scale. *International Journal of Research in Education and Science*, 10(3), 577–594. <https://doi.org/10.46328/ijres.3418>
- Anto, I., Sebastian, A., Anil, A., & Mathews, K. (2023). The relationship between grit, emotional intelligence and decision making among emerging adults. *International Journal of Engineering*

*Technology and Management Sciences*, 7(4), 580–586.  
<https://doi.org/10.46647/ijetms.2023.v07i04.079>

- APA. (2010). Ethical principles of psychologists and code of conduct. *The American Psychologist*, 65, 493. <https://doi.org/10.1037/a0020168>
- Bazelais, P., Lemay, D., & Doleck, T. (2016). How does grit impact college students' academic achievement in science? *European Journal of Science and Mathematics Education*, 4(1), 33–43. <https://doi.org/10.30935/scimath/9451>
- Caporale-Berkowitz, N. A., Boyer, B. P., Muenks, K., & Brownson, C. B. (2022). Resilience, not grit, predicts college student retention following academic probation. *Journal of Educational Psychology*, 114(7), 1654–1669. <https://doi.org/10.1037/edu0000721>
- Ceschi, A., Sartori, R., Dickert, S., & Costantini, A. (2016). Grit or honesty-humility? new insights into the moderating role of personality between the health impairment process and counterproductive work behavior. *Frontiers in Psychology*, 7. <https://doi.org/10.3389/fpsyg.2016.01799>
- Chaudhary, A. A., Ali, N. Z., Maqsood, N., Nasarullah, A., & Calimlim, R. J. F. (2024). The Influence of Emotional Intelligence in Educational Leadership and School Climate. *Journal of Education and Social Studies*, 5(2), 453–461. <https://doi.org/10.52223/jess.2024.5225>
- Chen, X., Huang, Z., & Lin, W. (2022). The effect of emotion regulation on happiness and resilience of University Students: The chain mediating role of learning motivation and target positioning. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1029655>
- Clark, K. N., Dorio, N. B., Eldridge, M. A., Malecki, C. K., & Demaray, M. K. (2019). Adolescent academic achievement: A model of social support and grit. *Psychology in the Schools*, 57(2), 204–221. <https://doi.org/10.1002/pits.22318>
- Clark, K., & Malecki, C. (2019). Academic grit scale: Psychometric properties and associations with achievement and life satisfaction. *Journal of School Psychology*, 72, 49–66. <https://doi.org/10.1016/j.jsp.2018.12.001>
- Credé, M., Tynan, M. C., & Harms, P. D. (2017). Much ado about grit: A meta-analytic synthesis of the grit literature. *Journal of Personality and Social Psychology*, 113(3), 492–511. <https://doi.org/10.1037/pspp0000102>
- Cross, T. L. (2010). *On the Social and Emotional Lives of Gifted Children* (4th ed.). Prufrock Press, Inc.
- Datu, J. A. D., King, R. B., Valdez, J. P. M., & Eala, M. S. M. (2019). Grit is associated with lower depression via meaning in life among Filipino high school students. *Youth & Society*, 51(6), 865–876. <https://doi.org/10.1177/0044118X18760402>
- Datu, J., Yuen, M., & Chen, G. (2017). Development and validation of the Triarchic Model of Grit Scale (TMGS): Evidence from Filipino undergraduate students. *Personality and Individual Differences*, 114, 198–205. <https://doi.org/10.1016/j.paid.2017.04.012>
- De Castella, K., Platow, M., Tamir, M., & Gross, J. (2018). Beliefs about emotion: Implications for avoidance-based emotion regulation and psychological health. *Cognition and Emotion*, 32(4), 773–795. <https://doi.org/10.1080/02699931.2017.1353485>
- Domes, G., Schulze, L., Böttger, M., Grossmann, A., Hauenstein, K., Wirtz, P., Heinrichs, M., & Herpertz, S. (2010). The neural correlates of sex differences in emotional reactivity and emotion regulation. *Human Brain Mapping*, 31(5), 758–769. <https://doi.org/10.1002/hbm.20903>

- Droulers, O., Lacoste-Badie, S., & Malek, F. (2015). Age-related differences in emotion regulation within the context of sad and happy TV programs. *Psychology & Marketing*, 32(8), 795–807. <https://doi.org/10.1002/mar.20819>
- Duckworth, A. L. (2016). *Grit: The Power of Passion and Perseverance*. New York: Simon and Schuster.
- Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the short grit scale (grit-S). *Journal of Personality Assessment*, 91(2), 166–174. <https://doi.org/10.1080/00223890802634290>
- Duckworth, A. L., & Yeager, D. S. (2015). Measurement matters: Assessing personal qualities other than cognitive ability for educational purposes. *Educational Researcher*, 44(4), 237–251. <https://doi.org/10.3102/0013189x15584327>
- Duckworth, A. L., Peterson, C., Matthews, M., & Kelly, D. (2007). Grit: perseverance and passion for long-term goals. *Journal of personality and social psychology*, 92(6), 1087–1101. <https://doi.org/10.1037/0022-3514.92.6.1087>
- El-Ahmadi, S. E. (2023). Emotion regulation as a predictor of academic buoyancy and optimism among female university students. *Journal of Education Al-Azhar University*, 42(200), 111-157. <https://doi.org/10.21608/jsrep.2023.333524>
- Filion, J., Schellenberg, B., Holding, A., & Koestner, R. (2020). Passion and grit in the pursuit of long-term personal goals in college students. *Learning and Individual Differences*, 83–84, 101939. <https://doi.org/10.1016/J.LINDIF.2020.101939>
- Fuentealba-Urra, S., Rubio, A., González-Carrasco, M., Oyanedel, J. C., & Céspedes-Carreno, C. (2023). Mediation effect of emotional self-regulation in the relationship between physical activity and subjective well-being in Chilean adolescents. *Scientific Reports*, 13(1). <https://doi.org/10.1038/s41598-023-39843-7>
- Gardener, E., Carr, A., MacGregor, A., & Felmingham, K. (2013). Sex differences and emotion regulation: An event-related potential study. *PLoS ONE*, 8(10). <https://doi.org/10.1371/journal.pone.0073475>
- Garnefski, N., Van Den Kommer, T., Kraaij, V., Teerds, J., Legerstee, J., & Onstein, E. (2001). The relationship between cognitive emotion regulation strategies and emotional problems: Comparison between a clinical and a non-clinical sample. *European Journal of Personality*, 16(5), 403–420. <https://doi.org/10.1002/per.458>
- Goubet, K., & Chrysikou, E. (2019). Emotion regulation flexibility: Gender differences in context sensitivity and repertoire. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.00935>
- Gross, J. J. (1998). The emerging field of Emotion Regulation: An integrative review. *Review of General Psychology*, 2(3), 271–299. <https://doi.org/10.1037//1089-2680.2.3.271>
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, 39(3), 281–291. <https://doi.org/10.1017/s0048577201393198>
- Gross, J. J. (2014). Emotion regulation: Conceptual and empirical foundations. In J. J. Gross (Ed.), *Handbook of emotion regulation* (2nd ed., pp. 3–20). The Guilford Press.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348–362. <https://doi.org/10.1037/0022-3514.85.2.348>

- Hassan, S. K. (2024). Academic Grit and its relationship to the need for Cognation and research anxiety among researchers at Al-Azhar University in light of some demographic variables. *Faculty of education journal, Al-Azhar University*, 43(202), 191-253. <https://doi.org/10.21608/jsrep.2024.357823>
- Helal, M. H., & Hassan, E. A. (2025). Research motivation as a mediating variable between system intelligence, academic grit, and academic achievement among postgraduate students, Faculty of Education, Zagazig University. *BMC Psychology*, 13(1). <https://doi.org/10.1186/s40359-025-02374-z>
- Hodge, B., Wright, B., & Bennett, P. (2018). The role of grit in determining engagement and academic outcomes for university students. *Research in Higher Education*, 59(4), 448–460. <https://doi.org/10.1007/s11162-017-9474-y>
- Horowitz, F. D., Subotnik, R. F., & Matthews, D. J. (2009). *Development of giftedness and talent across the life span* (1st ed.). American Psychological Association.
- Hoseinzadeh, A., & Asbaghi, M. (2020). The Role of strategical Cognitive Emotion Regulation and Self-esteem in the Happiness of Mothers with a Mentally Retarded children. *Iranian Journal of Pediatric Nursing (JPEN)*, 6(7). 6 (4) :11-20 URL: <http://jpen.ir/article-1-418-en.html>
- Hosseini, H. M., Derakhshesh, A., Fathi, J., & Mehraein, S. (2023). Examining the relationships between mindfulness, grit, academic buoyancy and boredom among EFL learners. *Social Psychology of Education*, 27(3), 1357–1386. <https://doi.org/10.1007/s11218-023-09860-5>
- Isa, A., & Al-Mukhtar, N. (2024). Emotional regulation difficulties among university students. *International Journal of Religion*, 5(12), 352–363. <https://doi.org/10.61707/sb373245>
- Jaeger, B., Freeman, S., Whalen, R., & Payne, R. (2010). Successful students: smart or tough? *Paper Presented at 2010 Annual Conference and Exposition: Research on the First Year*, American Society of Engineering Education, Louisville, KY.
- Jaljal, N., & Hindawi, I. (2023). Subjective Vitality and its Relationship to Academic Determination and Research Self-Efficacy among postgraduate students at the Faculty of Education, Kafr Elsheikh University. *Educational Journal of the Faculty of Education, Sohag University*, 110(110), 443-493. doi:10.21608/edusohag.2023.305017
- Jarwan, F. (1999). *Talent, giftedness and Creativity*. Al Ain, UAE: University Book House.
- Jiang, L., Zhang, S., Li, X., & Luo, F. (2021). How grit influences high school students' academic performance and the mediation effect of academic self-efficacy and cognitive learning strategies. *Current Psychology*, 42(1), 94–103. <https://doi.org/10.1007/s12144-020-01306-x>
- Kalia, V., Knauft, K., & Smith, A. (2022). Differential Associations between Strategies of Emotion Regulation and Facets of Grit in College Students and Adults. *The Journal of genetic psychology*, 183(2), 122–135. <https://doi.org/10.1080/00221325.2021.2013156>
- Kamtsios, S., & Karagiannopoulou, E. (2015). Exploring relationships between academic hardiness and academic stressors in university undergraduates. *JAEPR*, 1(1), 53-73. <https://journals.charlotte.edu/jaepr/article/view/317>
- Kannangara, C., Allen, R., Waugh, G., Nahar, N., Khan, S., Rogerson, S., & Carson, J. (2018). All that glitters is not grit: Three studies of grit in university students. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.01539>

- Karvendhan, A., & Jayakumar, K. (2024). Emotional intelligence, grit, academic performance across first and continuing generation undergraduate engineering students. *Emerging Trends in Smart Societies*, 81–84. <https://doi.org/10.4324/9781003489412-19>
- Kelly, D., Matthews, M., & Bartone, P. (2014). Grit and hardiness as predictors of performance among West Point Cadets. *Military Psychology*, 26(4), 327–342. <https://doi.org/10.1037/mil0000050>
- Khasawneh, A. H. (2020). Emotional Regulation and its Relationship with Positive Thinking among Yarmouk University Students. *Journal of Al-Quds Open University for Educational & Psychological Research & Studies*, 11(30), 30-46. <https://doi.org/10.33977/1182-011-030-003>
- Kuznetsova, E., Liashenko, A., Zhozhikashvili, N., & Arsalidou, M. (2024). Giftedness identification and cognitive, physiological and psychological characteristics of gifted children: A systematic review. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1411981>
- Kwon, H., Yoon, K. L., Joormann, J., & Kwon, J.-H. (2013). Cultural and gender differences in emotion regulation: Relation to depression. *Cognition & Emotion*, 27(5), 769–782. <https://doi.org/10.1080/02699931.2013.792244>
- Lam, K. K., & Zhou, M. (2019). Examining the relationship between grit and academic achievement within K-12 and Higher Education: A systematic review. *Psychology in the Schools*, 56(10), 1654–1686. <https://doi.org/10.1002/pits.22302>
- Lam, K. K., & Zhou, M. (2022). Grit and academic achievement: A comparative cross-cultural meta-analysis. *Journal of Educational Psychology*, 114(3), 597–621. <https://doi.org/10.1037/edu0000699>
- Lazarus, R. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology*, 44(1), 1–21. <https://doi.org/10.1146/annurev.psych.44.1.1>
- Lazarus, R. S. (1991). Emotion and adaptation. In Pervin, L. A. (Ed.), *Handbook of personality: Theory and research* (pp. 609-637). New York: Guilford.
- Li, Y., & Lin, X. (2024). Research on the correlation between academic emotion and grit among Chinese College students. *Frontiers in Educational Research*, 7(2), 112-119. <https://doi.org/10.25236/fer.2024.07021>
- Liao, Y., & Chen, H. (2022). Happiness takes effort: Exploring the relationship among academic grit, executive functions and well-being. *Personality and Individual Differences*, 199, 111863. <https://doi.org/10.1016/J.PAID.2022.111863>
- Light, A., & Nencka, P. (2019). Predicting educational attainment: Does grit compensate for low levels of cognitive ability? *Learning and Individual Differences*, 70, 142–154. <https://doi.org/10.1016/J.LINDIF.2019.02.002>
- Ma, C. H., Ma, Y. F., & Wang, Y. P. (2020). The mediation model of grit among Chinese college students. *Procedia Computer Science*, 166, 160–164. <https://doi.org/10.1016/J.PROCS.2020.02.040>
- Mason, H. D. (2018). Grit and academic performance among first-year university students: A brief report. *Journal of Psychology in Africa*, 28(1), 66–68. <https://doi.org/10.1080/14330237.2017.1409478>
- Mazloom, M. A. (2017). Emotional Regulation in its Relationship with Alexithymia in a Sample of University Students: Psychometric-Clinical Study. *Arab Studies in Education and Psychology, Association of Arab Educators*, 82 (82), 141-212. <https://doi.org/10.12816/0042119>

- McGlinchey, E., Kirby, K., McElroy, E., & Murphy, J. (2021). The role of emotional regulation in anxiety and depression symptom interplay and expression among adolescent females. *Journal of Psychopathology and Behavioral Assessment*, 43(4), 854–868. <https://doi.org/10.1007/s10862-021-09883-2>
- McLaughlin, K. A., Hatzenbuehler, M. L., Mennin, D. S., & Nolen-Hoeksema, S. (2011). Emotion dysregulation and adolescent psychopathology: A prospective study. *Behaviour Research and Therapy*, 49(9), 544–554. <https://doi.org/10.1016/j.brat.2011.06.003>
- Minnigh, T., Sanders, J., Witherell, S., & Coyle, T. (2024). Grit as a predictor of academic performance: Not much more than conscientiousness. *Personality and Individual Differences*, 221, 112542. <https://doi.org/10.1016/j.paid.2024.112542>
- Muhibbin, M. & Wulandari, R. (2021). The role of grit in Indonesian student. *Psychosophia: Journal of Psychology, Religion, and Humanity*, 3(2), 112–123. <https://doi.org/10.32923/psc.v3i2.1725>
- Nadeem, A., Umer, F., & Anwar, M. J. (2023). Emotion regulation as predictor of academic performance in university students. *Journal of Professional & Applied Psychology*, 4(1), 20–33. <https://doi.org/10.52053/jpap.v4i1.157>
- Oliveira, J., Pedras, S., Inman, R. A., & Ramalho, S. M. (2024). Latent profiles of emotion regulation among university students: Links to repetitive negative thinking, internet addiction, and subjective wellbeing. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1272643>
- Oram, R., Ryan, J., Rogers, M., & Heath, N. (2017). Emotion regulation and academic perceptions in adolescence. *Emotional and Behavioural Difficulties*, 22(2), 162–173. <https://doi.org/10.1080/13632752.2017.1290896>
- Oriol, X., Miranda, R., Oyanedel, J. C., & Torres, J. (2017). The role of self-control and grit in domains of school success in students of primary and secondary school. *Frontiers in Psychology*, 8. <https://doi.org/10.3389/fpsyg.2017.01716>
- Quoidbach, J., Mikolajczak, M., & Gross, J. J. (2015). Positive interventions: An emotion regulation perspective. *Psychological Bulletin*, 141(3), 655–693. <https://doi.org/10.1037/a0038648>
- Reed, L., & Jeremiah, J. (2017). Student grit as an important ingredient for academic and personal success. In *Developments in business simulation and experiential learning: Proceedings of the annual ABSEL conference* (Vol. 44), 252-256. <https://absel-ojs-ttu.tdl.org/absel/index.php/absel/article/download/3099/3047>
- Reraki, M., Celik, I., & Sariçam, H. (2015). Grit as a mediator of the relationship between motivation and academic achievement. *Ozean Journal of Social Science*, 8(1), 19-32. DOI:10.13140/RG.2.2.15063.78240
- Rey Peña, L., & Pacheco, N. E. (2012). Physical-verbal aggression and depression in adolescents: The role of cognitive emotion regulation strategies. *Universitas Psychologica*, 11(4), 1245–1254. <https://doi.org/10.11144/javeriana.upsy11-4>
- Richard-Sephton, P. B., Crisp, D. A., & Burns, R. A. (2024). The emotion regulation strategies of flourishing adults. *Current Psychology*, 43(14), 12816–12827. <https://doi.org/10.1007/s12144-023-05332-3>
- Ruttencutter, G. S. (2018). Getting Gritty with It: An Examination of Self-Directed Learning and Grit Among Doctoral Students. *PhD dissertation*, University of Tennessee, Knoxville, TN. [https://trace.tennessee.edu/utk\\_graddiss/4999](https://trace.tennessee.edu/utk_graddiss/4999)

- Schimschal, S. E., Visentin, D., Kornhaber, R., Barnett, T., & Cleary, M. (2022). Development of a scale to measure the psychological resources of grit in adults. *Nursing & Health Sciences*, 24, 752–763. <https://doi.org/10.1111/nhs.12973>
- Schraub, E. M., Turgut, S., Clavairoly, V., & Sonntag, K. (2013). Emotion regulation as a determinant of recovery experiences and well-being: A day-level study. *International Journal of Stress Management*, 20(4), 309–335. <https://doi.org/10.1037/a0034483>
- Seligman, M. E. (2011). *Learned Optimism*. North Sydney, N.S.W. New York, NY: Random House.
- Shah, M. C. (2021). A comparative and correlational study of self-efficacy, grit, achievement motivation and gender differences on performance. *International Journal of Indian Psychology*, 9(1), 542-552. [dip:18.01.054/20210901, https://doi.org/10.25215/0901.054](https://doi.org/10.25215/0901.054)
- Shamshirian, S., Halldorsson, V., & Sigmundsson, H. (2021). Passion, grit and mindset of Iranian wrestlers: A socio-psychological approach. *New Ideas in Psychology*, 62, 100871. <https://doi.org/10.1016/J.NEWIDEAPSYCH.2021.100871>
- Shengyao, Y., Xuefen, L., Jenatabadi, H. S., Samsudin, N., Chunchun, K., & Ishak, Z. (2024). Emotional intelligence impact on academic achievement and psychological well-being among university students: The mediating role of positive psychological characteristics. *BMC Psychology*, 12(1). <https://doi.org/10.1186/s40359-024-01886-4>
- Tang, H., Zhou, S., Du, X., Mo, Q., & Xing, Q. (2022). Validating the Chinese version of the academic grit scale in selected adolescents. *Journal of Psychoeducational Assessment*, 41(2), 153–174. <https://doi.org/10.1177/07342829221129078>
- Tang, L., & Zhu, X. (2024). Academic self-efficacy, grit, and teacher support as predictors of psychological well-being of Chinese EFL students. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1332909>
- Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. *Monographs of the Society for Research in Child Development*, 59(2/3), 25-52. <https://doi.org/10.2307/1166137>
- Thompson, R. A., & Meyer, S. (2007). Socialization of Emotion Regulation in the Family. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 249–268). The Guilford Press.
- Tomlinson, C. A. (2013). Fairy Dust and Grit. *Educational leadership: journal of the Department of Supervision and Curriculum Development*, N.E.A. 70. 85-86.
- Wang, L. (2021). The role of students' self-regulated learning, grit, and resilience in Second language learning. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.800488>
- Wolters, C., & Hussain, M. (2015). Investigating grit and its relations with college students' self-regulated learning and academic achievement. *Metacognition and Learning*, 10(3), 293–311. <https://doi.org/10.1007/s11409-014-9128-9>
- Yanling, L., Sulong, R. M., Ahmad, N. A., & Ruihua, L. (2024). Grit relates to academic performance among college students: a five years systematic literature review. *Journal of Institutional Research South East Asia*, 22(1), 47-69. [http://www.seairweb.info/journal/articles/JIRSEA\\_v22\\_n01/JIRSEA\\_v22\\_n01\\_Article03.pdf](http://www.seairweb.info/journal/articles/JIRSEA_v22_n01/JIRSEA_v22_n01_Article03.pdf)
- Zaki, H. (2021). The mediating role of attentional control in the impact of academic grit on engagement in online learning and achievement among a university students. *Journal of Education Sohag University*, 92(92), 1253-1347. Doi: 10.21608/edusohag.2021.208705

- Zayed, A. M. A. (2023). Self-directed learning, digital competence, and academic grit among college education students considering some demographic variables. *Journal of the Faculty of Education*, 20(119), 361-425. Doi:10.21608/jfe.2023.337363
- Zhang, M., Mou, N., Tong, K., & Wu, A. (2018). Investigation of the effects of purpose in life, grit, gratitude, and school belonging on mental distress among Chinese emerging adults. *International Journal of Environmental Research and Public Health*, 15(10), 2147. <https://doi.org/10.3390/ijerph15102147>
- Zhao, X., & Wang, D. (2023). Grit in second language acquisition: a systematic review from 2017 to 2022. *Frontiers in psychology*, 14, 1238788. <https://doi.org/10.3389/fpsyg.2023.1238788>

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