The Effect of Parenting Style on Learning Engagement of High School Students: The Mediating Role of Grit

Ran Xia

School of Materials Science and Engineering, Zhengzhou University, Zhengzhou, 450000, China

Renataxia@stu.hebmu.cn

Abstract. Learning engagement is a prominent concern in the current education sector. Extensive research has been conducted by scholars both domestically and internationally, exploring various perspectives on learning engagement. Among these studies, the investigation of factors influencing learning engagement primarily focuses on family environment, individual characteristics, academic achievement, and other related aspects. The findings suggest that parental rearing style plays a crucial role in determining the learning engagement of high school students. The mediating role of grit between parenting style and learning engagement, however, requires further investigation. Through the questionnaire survey method, this study concludes that parenting style positively influences the learning engagement of high school students, and establishes the mediating role of grit, which aligns with our research hypothesis. This preliminary exploration sheds light on the influencing factors affecting learning engagement among high school students and provides valuable insights for researchers seeking to comprehend its underlying mechanisms.

Keywords: Parenting style, high school students, learning engagement, grit, psychology, mediating role.

1. Introduction

1.1. Research Background

In recent years, the issue of learning engagement has garnered significant attention in academic circles. Learning engagement encompasses the temporal, physical, and cognitive efforts exerted by students during the learning process, encompassing time allocation, energy expenditure, cognitive involvement, and emotional commitment. This multifaceted construct serves as a pivotal indicator of students' learning disposition. Learning engagement not only impacts students' academic performance, but also has significant implications for their mental health, future career prospects and social adaptability [1]. Therefore, research on learning engagement plays a crucial role both theoretically and practically.

Parenting style refers to the attention, care, and support provided by parents to their children; however, there are different approaches to parenting style. Researchers have categorized these approaches into authoritarian, authoritative, and permissive styles [2]. The characteristics of authoritarian parents include a rigidly condemnatory attitude and stringent vigilance. These parents have expectations of obedience, inhibition of open communication, and highly restrictive psychological control, prioritizing the needs of adults over those of their children; authoritative parents in organized family environment emphasizes children's right of self-discipline, employing behavioral and monitoring controls that encompass awareness of their children's whereabouts, companionship, and activities. However, these parents provide justifications for their requests, foster mutual communication, and demonstrate willingness to adapt rules following deliberation; permissive parents involve minimal rules and limited control over children, sometimes allowing them complete autonomy in making life decisions without parental guidance. These distinct parenting styles can shape the development of a child's personality.

Grit represents a formidable strength, manifested through enduring and arduous struggles that enhance adaptability, psychological resilience, and distinctive personality traits. Individuals with grit exhibit the following characteristics: firstly, possessing a resolute and enduring willpower; secondly, unwaveringly pursuing their ideals and firmly believing in achieving their goals; thirdly, maintaining

good mental and emotional well-being; fourthly, possessing extensive knowledge and experience that is both rich and solid; fifthly, adopting a rational and scientific lifestyle along with healthy living habits; sixthly, establishing positive interpersonal relationships. Those who possess strong psychological tenacity are more adept at surviving and thriving during challenging times.

1.2. Research Review

The available research data demonstrate a significant association between parenting styles and students' learning engagement [3]. Positive parenting styles have been found to enhance students' learning engagement, while negative parenting style tend to diminish students' level of learning engagement [4, 5]. However, the impact of parenting style on the mechanism of learning engagement among middle school students remains unclear and lacks empirical research. The findings of several studies indicate a positive association between each dimension of grit and active learning engagement, while revealing a negative relationship with dedicated learning engagement [6]. Moreover, a significant positive correlation is observed between grit and positive parenting styles, whereas a notable negative correlation exists between grit and negative parenting styles [7]. The purpose of this study was to explore the mechanism by which parenting styles affect middle school students' learning engagement, adjust the psychological level of toughness, and provide insights and references for future research.

1.3. Research Issues

In summary, this study suggests that parenting styles have the potential to influence the learning engagement of high school students. Building upon previous research, this study aims to investigate the underlying mechanisms through which parenting styles impact learning engagement among high school students and explore the role of grit in this relationship.

2. Research Method

2.1. Research Object and Quantitative Methods

The research focus of this study lies in the domain of high school students, with a specific emphasis on quantitative analysis.

2.2. Scale Description

I. Parenting style Parenting style was measured by Short-Egna Minnenav Barndoms Uppfostran (s-EMBU) which was developed by Arrindell et al and revised by Jiang J. et al [8].The questionnaire, a total of 21 questions, measurement of three dimensions: rejection, emotional warmth, and overprotection. The Cronbach's α coefficient of each dimension was between 0.72 and 0.85. The scale demonstrates high levels of reliability and validity.

II. Grit The scale was initially developed by Duckworth et al. in 2007 and subsequently enhanced by Guan Q. et al. in 2015 [9]. It comprises of twelve items and is assessed using a 5-point Likert scale, where a score of 1 represents "complete agreement" and a score of 5 indicates "complete disagreement". The scale encompasses two dimensions: interest stability and effort persistence. Notably, the six items pertaining to interest stability require reverse scoring. A higher total score on the scale signifies greater levels of grit. The Cronbach α coefficient for the overall scale was found to be 0.859, with individual coefficients for perseverance (0.801) and consistency of interest (0.708). The scale demonstrates high levels of reliability and validity.

III. Learning engagement, the present study employed the Learning Engagement Scale in Chinese developed by Fang L.T. et al, which consisted of a total of 17 items encompassing the dimensions of "vitality," "concentration," and "dedication [10]." The Cronbach's α coefficient of the total scale was 0.894, and the Cronbach's α coefficients of the three dimensions of vitality, dedication and

concentration were 0.823, 0.795 and 0.555, respectively. The scale demonstrates high levels of reliability and validity.

2.3. Sample Table Description

Number of survey samples: 255 people

Group composition of survey samples: high school students in Jiangsu Province, 97 students in grade one, 95 in grade two, and 63 in grade three.

2.4. Research Process

Questionnaire design: The participants in this study consisted of high school students, who were categorized into three groups based on their grade level: grade one, grade two, and grade three.

The questionnaire comprised of five fundamental inquiries and three scales, which examined the parenting style, grit, and learning engagement.

2.5. Data Analysis Method

The SPSS software was employed for data analysis: the collected variable data from all questionnaires were subjected to descriptive statistics analysis; correlation analysis and simple linear regression analysis were used to analyze the relationship between parenting style and learning engagement; the relationship between parenting style and learning engagement was examined using stepwise regression analysis, with a focus on the mediating role of grit.

3. Results and Discussion

3.1. Data Analysis

Table 1. Descriptive statistics for each variable

Scale	Scheme 1	Scheme 2
Rejection	1.33	0.42
Emotional warmth	3.02	0.66
Overprotection	2.54	0.44
Total score of parenting style	3.00	0.36
Persistence of efforts	3.25	0.80
Stability of interest	2.87	0.82
Total scare of grit	3.06	0.65
Vitality	3.90	1.42
Dedication	4.66	1.26
Absorption	4.20	1.45
Total score of learning engagement	4.25	1.24

The three scales of parenting style, grit, and learning engagement were subjected to descriptive statistics analysis (see Table 1). On the Parenting Style Scale, the mean score for emotional warmth was 3.02, which is higher than the average scores for rejection and overprotection dimensions. Additionally, the mean score for parenting style was 3.00, surpassing the theoretical average of 2, which implies that the parents of the respondents have exhibited a partially positive influence; The mean score for persistence in grit (3.25) surpasses the theoretical average of 3, indicating that respondents exhibit an above-average level of persistence. Conversely, the mean score for stability of interest (2.87) falls below the theoretical average of 3, suggesting a lower level of stability among respondents, which mean the stability of the respondents' interest is indicative of a moderate level, leaning towards the lower end, however, the average score of grit was 3.06, which was close to the theoretical average of 3, which suggest that the respondents exhibited a moderate level of psychological toughness overall; on the Learning Engagement Scale, the active scoring average of 3.90, is lower than the theoretical average of 4, which indicates that the vitality of the respondents is

in the lower middle level, the average score of dedication was 4.66, which was higher than the theoretical average of 4, indicating that the dedication of respondents was above the average level, the average score of absorption was 4.20, which was higher than the theoretical average of 4, indicating that the respondents' concentration was in the upper middle level, The mean total score of learning engagement is 4.25, surpassing the theoretical average of 4, thereby indicating that the respondents' learning engagement generally exceeds the norm.

Table 2. Correlation of variable

		Grit	Learning engagement	Parenting style
Grit	Correlation coefficient	1		
	p value	-		
Learning engagement	Correlation coefficient	0.568	1	
	p value	0.000	-	
Parenting style	Correlation coefficient	0.220	0.242	1
	p value	0.000	0.000	-

Pearson's correlation coefficient was used to study the correlation between the three variables (see Table 2), the correlation between grit and learning engagement was found to be significantly positive ($p < 0.05$), with a correlation coefficient of 0.568; the relationship between parenting style and learning engagement, as well as grit, exhibited a significant positive correlation ($p < 0.05$). The correlation coefficients were calculated as 0.220 for learning engagement and 0.242 for grit.

Table 3. Linear regression analysis of variables

	Learning engagement			Grit			Learning engagement		
	B value	t value	p value	B value	t value	p value	B value	t value	p value
Constant	1.715	2.667	0.008	1.859	5.525	0.000	-0.218	-0.38	0.704
Parenting style	0.847	3.971	0.000	0.400	3.587	0.000	0.431	2.344	0.020
Grit							1.040	10.312	0.000
R^2		0.058			0.048			0.337	
F value	F=15.770, p=0.000			F=12.866, p=0.000			F=64.324, p=0.000		

Linear regression analysis was conducted with learning engagement as the dependent variable and parenting style as the independent variable (see Table 3). The regression coefficient of parenting style was 0.847 ($p < 0.05$), and parenting style had a significant positive impact on learning engagement.

Linear regression analysis was conducted with grit as the dependent variable and parenting style as the independent variable (see Table 3). The regression coefficient of parenting style was 0.431 ($p < 0.05$), and the parenting style exerts a substantial positive influence on the level of engagement in learning the regression coefficient of hardiness is 1.040 ($p < 0.05$), and the results demonstrated a significant positive impact of grit on learning engagement.

Table 4. Analysis of the mediating effect of variables

	Effect	SE	*t*/Z	*p*	95%CI	
					Lower limit	Upper limit
Gross effect	0.847	0.213	3.971	0.000	0.427	1.267
Direct effect	0.431	0.184	2.343	0.020	0.069	0.793
Mediating effect	0.416	0.130	3.374	0.001	0.175	0.684

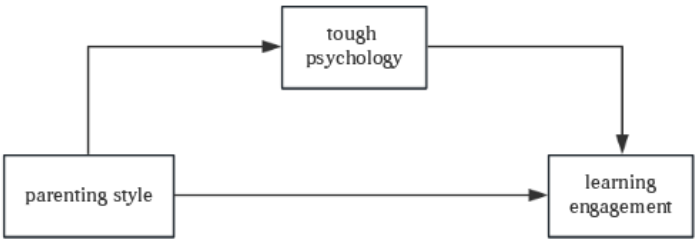


Figure 1. Relation between parenting style, grit and learning engagement

The mediating effect test showed that the total effect of parenting style on learning engagement was 0.847 ($p < 0.05$), the direct effect was 0.431 ($p < 0.05$), and the mediating effect was 0.416 ($p < 0.05$), accounting for 48.136%. The 95% CI was 0.175 ~ 0.684 (see Table 4), excluding 0, indicating that resilience had a significant partial mediating effect on the influence of parenting style on learning engagement (see Figure 1).

3.2. Discussion

As the research variables in this study employ scales utilized in related research as tools and data support, the data of both independent and dependent variables align with previous studies on the impact of parenting styles on high school students' learning engagement, without deviating from the logical framework and research findings of mainstream research direction. The analysis of the questionnaire data revealed a significant positive impact of parenting style on learning engagement, with grit playing a significant role as a partial mediator in the relationship between parenting style and learning engagement. Consequently, the findings of this study align closely with our hypothesis that parenting style positively influences learning engagement among high school students, while also establishing the mediating effect of grit.

The findings of this study hold significant educational implications on a practical level. First, parents should pay attention to their child-rearing practices and strive to avoid employing negative parenting styles such as rejection or overprotection. Instead, parents ought to employ emotional warmth and adopt a positive parenting approach in order to effectively engage children in the learning process. Secondly, for students who exhibit insufficient engagement in learning, teachers can assist them in overcoming challenges and fostering a resilient mindset through rigorous psychological interventions. Additionally, enhancing learning can commence by exploring various parenting styles to enhance the upbringing of children, thereby fostering students' mental toughness.

It is worth noting that, given the relatively limited sample size of the questionnaire employed in this study, further discussion on the reliability of the research findings is warranted. The questionnaire for this study was primarily distributed in urban areas, which posed limitations due to regional restrictions, inadequate sample size, and incomplete data in rural townships. Promising areas for further research and intervention development.

4. Conclusion

The present study investigates the impact of parenting styles on learning engagement among high school students, encompassing an examination of the mediating role of grit. Based on a questionnaire survey, the present study concludes that diverse parenting styles exert an influence on the learning engagement of high school students, with a significant contribution from psychological factors. The experiment to build upon previous research and explore the underlying factors contributing to learning engag aims ement among high school students.

References

[1] Frydenberg, E., Martin, A. J., & Collie, R. J.. (2017). Social and emotional learning, social and emotional competence, and students' academic outcomes: the roles of psychological need satisfaction, adaptability, and buoyancy. Springer Singapore.

[2] Assadi, S. M., Zokaei, N., Kaviani, H., Mohammadi, M. R., Ghaeli, P., & Gohari, M. R., et al. (2010). Effect of sociocultural context and parenting style on scholastic achievement among iranian adolescents. Social Development, 16 (1), 169-180.

[3] Brown, L., & Iyengar, S.. (2008). Parenting styles: the impact on student achievement. Marriage & Family Review, 43 (1-2), 14-38.

[4] Hong, L.Z., Wei, M.Z., Huang, S.X., & Huang, W.Y.. (2023). The impact of rough parenting on junior high school students' learning engagement: the mediating role of psychological capital. Survey of Education (23), 24-27.

[5] Zhou, P.S., Wei, Y.M., & Yang, K.. (2014). Research on the relationship between middle school students' parenting style, learning engagement and academic performance. Journal of Teaching and Management (3), 3.

[6] Jiang, Z.C., & Xu, Z.J., et al. (2017). The relationship between academic emotions, resilience and academic performance of middle school students. China Journal of Health Psychology, 25 (2), 4.

[7] Liu, Q., Wang, M.M., Xiang, Q., & Song, Y.P.. (2016). The Relationship between Adolescents' Resilience and Parenting Style. China Journal of Health Psychology, 24 (007), 1039-1042.

[8] Jiang, J., Lu, Z.R., Jiang, B.J., & Xu, Y.. (2010). Preliminary revision of the Chinese version of the simplified parenting style questionnaire. Psychological Development and Education (1), 6.

[9] Guan, Q., Xue, L., & Lv, T.T.. (2015). The relationship between perseverance and deliberate training and Chinese college students' English achievement. Chinese Journal of Special Education (12), 5.

[10] Fang, L.T., Shi, K., & Zhang, F.H.. (2008) Study on the reliability and validity of the Chinese version of the Learning Engagement Scale. Chinese Journal of Clinical Psychology, 16 (6), 3.