

The Relationship Between Parenting Styles and Academic Adjustment in First-Year Middle School Students: The Chain Mediation Effects of Academic Self-Concept and Positive Academic Emotions

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Abstract

The present study examined the specific mechanism underlying the predictive role of parental parenting styles in academic adjustment among 587 first-year junior high school students using the Simplified Parenting Styles Questionnaire, Academic Adjustment Scale, Adolescent Academic Emotions Questionnaire, and Academic Self-Concept Scale. The results indicated that: (1) the direct effect of parenting styles was significant; (2) academic self-concept played a partial mediating role in the relationship between parenting styles and academic adjustment; (3) positive academic emotions served as an independent mediator only in the pathway from positive parenting styles to academic adjustment, and did not reach significance in the negative parenting style pathway; (4) a chain mediation mechanism involving academic self-concept and positive academic emotions was observed in the effect of parenting styles on academic adjustment.

Keywords

Parenting styles; Academic adjustment; Academic self-concept; Positive academic emotions.

1. Introduction

Academic adjustment refers to a psychological process in which individuals actively regulate their behaviors and cognition to align with the demands of learning environments and maintain a dynamic equilibrium[1]. Empirical studies have demonstrated that academic adjustment is jointly influenced by internal factors (e.g., personality, self-concept, academic emotions) and external factors (e.g., family upbringing and social environments)[2]. As the primary socialization context, parenting styles—defined as parents' stable attitudes, behavioral patterns, and emotional climate formed during child-rearing—play a pivotal role in shaping adolescents' adaptive capacities [3]. Research indicates that parental emotional support and involvement significantly enhance adolescents' academic achievement and adjustment, whereas neglectful parenting contributes to lower psychosocial competence and school maladjustment [4,5]. Based on this evidence, Hypothesis 1 posits that distinct parenting styles exhibit significantly divergent predictive effects on academic adjustment, and this study aims to explore its underlying mechanisms.

Based on Shavelson's multidimensional self-concept model, the self-cognitive system exhibits a hierarchical developmental structure encompassing three dimensions: global self-evaluation, academic self-perception, and non-academic self-cognition [6]. Within this framework, academic self-concept—a comprehensive self-assessment system related to scholastic

competence—is not only significantly enhanced by democratic parenting strategies but also consistently predicts academic adjustment in higher education[2]. Building on this evidence, Hypothesis 2 proposes that academic self-concept serves as a mediating mechanism between parenting styles and academic adjustment.

Academic emotions refer to affective responses experienced during knowledge construction and skill development [7]. Their operational mechanisms align with the antecedent-consequence feedback loops outlined in Pekrun's control-value theory, which posits that academic emotions arise from interactions between personality traits and environmental factors (e.g., parenting styles), subsequently triggering variations in academic interest and motivation, and ultimately influencing academic achievement and adjustment [2,8]. Accordingly, Hypothesis 3 proposes that academic emotions mediate the relationship between parenting styles and academic adjustment.

Integrating control-value theory, academic self-concept, as an individual dispositional factor, serves as a critical antecedent of academic emotions. Empirical studies have demonstrated that mathematical self-concept exhibits a mediating effect between academic performance and emotional states, with individuals possessing higher self-concepts being more likely to sustain positive academic emotions[9]. Synthesizing these findings, Hypothesis 4 posits that parenting styles influence academic adjustment through a chain mediation pathway involving academic self-concept → positive academic emotions.

2. Method

2.1. Participants

The study samples were selected from a group of seventh grade freshmen in a junior middle school in Fujian Province. A total of 545 valid data were collected (effective rate 94.3%), and the gender composition was 48.4% male (264 people) and 51.6% female (281 people).

2.2. Questionnaires

Parenting Styles: The Chinese version of the Brief Parenting Assessment Tool (s-EMBU-C) was adopted, comprising 21 items across three dimensions: rejection, emotional warmth, and overprotection [10]. Responses were measured on a 4-point Likert scale. The scale demonstrated good internal consistency (Cronbach's $\alpha = 0.786$).

Academic Adjustment: The Academic Adjustment Subscale from the School Adjustment Inventory for Chinese Primary and Secondary Students (Junior High School Edition) was used [11]. This subscale includes 22 items rated on a 5-point Likert scale, covering four dimensions. The Cronbach's α coefficient was 0.918.

Positive Academic Emotions: The Adolescent Academic Emotions Questionnaire developed by Yu et al. was employed [12]. This questionnaire consists of 72 items across four subscales, assessed via a 5-point Likert scale. The current study yielded excellent reliability (Cronbach's $\alpha = 0.930$).

Academic Self-Concept: The academic self-concept subscale of the Self-Description Questionnaire II (SDQ-II) was utilized [13]. This subscale contains 30 items across three subdimensions (mathematics, language, and general school self-concept), rated on a 6-point Likert scale. Internal consistency was high (Cronbach's $\alpha = 0.908$).

3. Result

3.1. Common method bias

Prior to data analysis, Harman's single-factor test was conducted to assess common method bias. The results revealed 28 factors with eigenvalues greater than 1 extracted without rotation,

with the first principal component accounting for only 21.81% of the variance—substantially below the critical threshold of 40%. This indicates that common method bias had limited influence and no severe common method bias was present[14].

3.2. Descriptive statistical analysis

Table 1 presents the descriptive statistics and Pearson product-moment correlation coefficients among the key variables. The results indicate significant linear associations across all measured variables. Specifically, positive parenting styles showed significant positive correlations with academic self-concept ($r = 0.48$), positive academic emotions ($r = 0.51$), and academic adjustment ($r = 0.53$) (all $p < 0.01$). In contrast, negative parenting styles exhibited significant negative correlations with these variables ($r = -0.29$ to -0.36 , $p < 0.01$).

Table 1. Descriptive statistics and correlation matrix of each variable

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Positive parenting style	2.87	0.70	1				
2. Negative parenting style	1.78	0.45	-0.43**	1			
3 Academic self-concept	4.02	0.71	0.48**	-0.29**	1		
4. Positive academic emotions	3.56	0.64	0.51**	-0.30**	0.76**	1	
5. Academic adjustment	3.84	0.66	0.53**	-0.36**	0.73**	0.69**	1

Note: **indicates $p < 0.01$

3.3. Chain mediation effect test

The chain mediation effects were examined using Hayes' (2013) Process plugin (Model 6) in SPSS with the Bootstrap method (5,000 resamples). Given the dichotomous nature of parenting styles (positive vs. negative), two separate analyses were conducted to control for potential covariation: one with positive parenting styles as the independent variable and the other with negative parenting styles, while treating the opposing parenting dimension as a covariate[15]. The results (see Table 2) indicated that positive parenting styles significantly promoted academic adjustment ($\beta = 0.436$, $t = 11.662$, $p < 0.001$), whereas negative parenting styles significantly inhibited academic adjustment ($\beta = -0.234$, $t = -4.012$, $p < 0.001$). Further analysis revealed that academic self-concept significantly enhanced positive academic emotions ($\beta = 0.597$, $t = 21.088$, $p < 0.001$) and positively predicted academic adjustment through its mediating role ($\beta = 0.207$, $t = 4.676$, $p < 0.001$).

Table 2. Analysis table of chain mediation effect

outcome variable	concomitant variable	predictive variable	<i>R</i>	<i>R</i> ²	<i>F</i> (<i>df</i>)	β	<i>t</i>
C	N	P	0.491	0.241	86.183(2)	0.451	10.692***
	P	N				-0.146	-2.220***
E	N	P	0.774	0.600	270.124(3)	0.164	5.359***
		C				0.597	21.088***
E	P	N	0.774	0.600	270.124(3)	-0.052	-1.200
		C				0.597	21.088***
A	N	P	0.552	0.305	118.758(2)	0.436	11.662***
		N				-0.234	-4.012***
A	N	P	0.773	0.597	200.089(4)	0.150	4.668***
		C				0.436	11.111***
A	P	E	0.773	0.597	200.089(4)	0.207	4.676***
		N				-0.142	-3.165***
		C				0.436	11.111***
		E				0.207	4.676***

Note: ***indicates $p < 0.001$, P: Positive parenting style, N: Negative parenting style, A: Academic adjustment, C: academic self-concept, E: Positive academic emotions

The statistical significance of the mediating transmission path was verified by the confidence intervals constructed by the Bootstrap method, which were analysed to obtain the 95% CIs for each mediating effect as shown in Table 3. Specifically, in the mechanism of action of positive parenting styles on academic adjustment, the magnitude of the direct effect amounted to 0.150 (accounting for 34.4% of the total effect), whose 95% confidence intervals [0.363, 0.510] did not pass through 0, which means that the direct effect was significant (Direct Path 1). The total indirect effect of Academic Self-Concept and Positive Academic Emotions was 0.289 (65.6% of the total effect), and its confidence interval [0.228, 0.345] did not contain 0, indicating a significant mediation transmission mechanism for the two mediating variables (Total Indirect Effect 1). The path decomposition results were shown as three transmission paths: the independent mediated path effect size for (indirect path 1) academic self-concept was 0.197, (95% CI [0.146, 0.249], $p < 0.001$); the independent mediated effect size for (indirect path 2) positive academic emotions was 0.034, (95% CI [0.016, 0.055], $p < 0.001$); and (indirect path 3) a chained path effect size of 0.056, (95% CI [0.031, 0.084], $p < 0.001$) for both synergistically. The confidence intervals for all paths excluded the null, indicating that all three mediated paths were statistically significant.

In the pathway of negative parenting styles affecting academic adjustment, the direct effect size was -0.142 (60.3% of the total effect) with a 95% confidence interval [-0.230, -0.054] that excluded zeros, making the direct effect significant (direct pathway 2). The total indirect effect is -0.093 (39.77%) with a confidence interval [-0.164, -0.021] that also excludes zeros, confirming that the mediated transmission paths for both variables are significant (Total Indirect Effect 2). Path decomposition also presents three specific transmission paths: (Indirect Path 4) the independent mediated effect value of academic self-concept was -0.064, (95% CI [-0.119, -0.008], $p < 0.001$); (Indirect Path 5) the independent mediated path effect of positive academic emotions was -0.011, (95% CI [-0.032, 0.09]), which did not reach the level of significance; (Indirect Path 6) the chain-mediated path effect size for both variables was -0.018, (95% CI [-0.038, -0.002], $p < 0.001$). This suggests that negative parenting styles negatively affect academic adjustment mainly through the independent mediator of academic self-concept and the chain path. In summary, all three hypotheses except Hypothesis 3 were valid, and the schematic diagram of the chain-mediated path is shown in Figure 1.

Table 3. Analysis of mediated path effect sizes

Impact pathways	efficiency value	Percentage of relative effect (%)	95 per cent confidence interval	
			upper limit	lower limit
Direct Path 1	0.150***	34.4%	0.363	0.510
Total Indirect Effect 1	0.286***	65.6%	0.228	0.345
Indirect path 1	0.197***	45.2%	0.146	0.249
Indirect path 2	0.034***	7.8%	0.016	0.055
Indirect path 3	0.056***	12.8%	0.031	0.084
Direct Path 2	-0.142	60.3%	-0.230	-0.054
Total Indirect Effect 2	-0.093***	39.7%	-0.164	-0.021
Indirect path 4	-0.064***	27.4%	-0.119	-0.008
Indirect path 5	-0.011	4.7%	-0.032	0.09
Indirect path 6	-0.018***	7.7%	-0.038	-0.002

Note: *** indicates $p < 0.001$

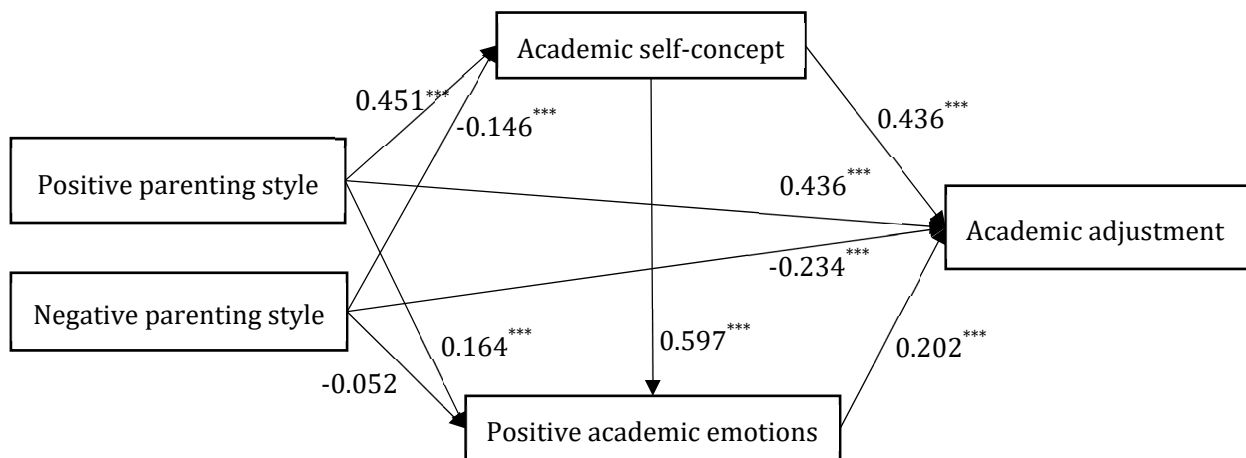


Figure 1. Chain mediation effect model

4. Discussion

The results of the study showed that positive parenting styles significantly positively predicted academic adjustment, while negative parenting styles showed significant negative prediction, which is highly compatible with Hypothesis 1 and established studies, and the difference in the percentage of their direct effects further reveals that the impairment of academic adjustment by negative parenting relies more on the direct pathway, which may be directly related to parent-child conflict and family atmosphere brought about by negative parenting[5,16].

Academic self-concept plays a significant mediating role between both parenting styles and academic adjustment, fully supporting Hypothesis 2 and echoing Shavelson's multidimensional self-concept model[6]. Parents, through academic feedback (e.g., encouragement or negativity), directly influence perceptions of academic competence, which in turn shapes adaptive behaviour. It is worth noting that positive academic emotions only play a partial mediating role in the positive parenting pathway, which may be due to the fact that positive parenting stimulates positive academic emotions such as pleasure and self-confidence through emotional support, which in turn facilitates academic adjustment; whereas the inhibitory effect of negative parenting may be transmitted through negative emotions such as anxiety, which is limited by the fact that the negative emotions variable was not included in the present study leading to limited interpretations, and the need for future refinement of a bi-directional emotions measurement framework.

The chain mediation effect was significant in both parenting pathways, fully supporting hypothesis 4 and confirming the hierarchical transmission mechanism of the 'cognitive-emotional' system[17]. Specifically, the parenting approach drove adaptive behaviours through the sequential transmission of 'academic cognition→emotional experience', which is consistent with the pathway of cognitive resources expanding through emotional channels in Broaden-and-Build Theory. Notably, the negative parenting chain effect size was significantly lower than that of the positive pathway (7.7%), which may be attributed to the disruptive nature of the emotional system, leading to an attenuation of the cognitive-emotional transformation process. Although most of the hypotheses were supported, hypothesis 3 (the mediating role of positive academic emotions in the negative pathway) was not established, which could be attributed to the following aspects: firstly, the measurement did not cover the negative emotional variables such as anxiety; secondly, the differences in emotions regulation, as the immature emotion regulation ability of junior high school students weakened the influence of negative emotions; and finally, the cultural perception of Chinese students that 'strict teaching means caring' may have buffered the emotional responses. In the future, it is necessary to improve the mechanism

by longitudinal tracking, combining dual-valued emotions (positive/negative) measures, and incorporating cultural regulation factors.

5. Conclusion

- (1) Positive and negative parenting styles positively and negatively predicted academic adjustment, respectively.
- (2) Parenting styles indirectly influence adjustment levels by shaping academic self-concept, and academic self-concept mediates parenting styles and academic adjustment.
- (3) Positive academic emotions independently mediated only positive parenting styles in influencing academic adjustment, and did not reach significance in the negative parenting styles pathway.
- (4) Academic self-concept and positive academic emotions form a chain mediation path, and parenting styles indirectly affect academic adjustment through the sequential mechanism of 'academic self-concept→positive academic emotions'.

References

- [1] Feng, T., Su, T., Hu, X., et al. (2006) Development of the Learning Adjustment Scale for College Students. *Journal of Psychology*, 05: 762-769.
- [2] Cobo-Rendón, R., Hojman, V., García-Álvarez, D., et al. (2023) Academic emotions, college adjustment, and dropout intention in university students. In *Frontiers in Education*, 8: 1303765.
- [3] Darling, N., Steinberg, L., (2017) Parenting style as context: An integrative model. In *Interpersonal development*. Routledge, London, 161-170.
- [4] Pinquart, M. (2016) Associations of parenting styles and dimensions with academic achievement in children and adolescents: A meta-analysis. *Educational psychology review*, 28: 475-493.
- [5] Lamborn, S. D., Mounts, N. S., Steinberg, L., et al. (1991) Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child development*, 62(5): 1049-1065.
- [6] Shavelson, R. J., Hubner, J. J., Stanton, G. C. (1976). Self-concept: Validation of construct interpretations. *Review of educational research*, 46(3): 407-441.
- [7] Yu, G., Dong, Y. (2005) Research on academic emotions and its significance for students' development. *Educational Research*, 10: 39-43.
- [8] Pekrun, R. (2006) The Control-Value Theory of Achievement Emotions: Assumptions, Corollaries, and Implications for Educational Research and Practice. *Educational Psychology Review*, 18(4): 315-341.
- [9] Chen, J., Peng W., Liu, H. (2014) Relationships between mathematics achievement, mathematics academic ability self-concept, and mathematics academic emotions among junior high school students. *Psychological Science*, 37(02): 368-372.
- [10] Jiang, J., Lu, Z., Jiang, B. (2010) A preliminary revision of the Chinese version of the Short-form Parenting Styles Questionnaire. *Psychological Development and Education*, 26(01): 94-99.
- [11] Jiang, G., Ying, M., Lin, X., et al. (2017) Development of the School Adjustment Suite Scale for Chinese Elementary and Middle School Students. *Chinese Journal of Clinical Psychology*, 25(03): 435-444.
- [12] Dong, Y., Yu, G. (2007) Development and application of the Academic Emotions Questionnaire for adolescents. *Journal of Psychology*, 05: 852-860.

- [13] Chen, G., Zhu, X., Ye, L., et al. (1997) A report on the revision of the Shanghai norm of the Self-Description Questionnaire. *Psychological Science*, (06): 499-503+574-575.
- [14] Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., et al. (2003) Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5): 879.
- [15] Hayes, A. F. (2017) *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford publications, New York.
- [16] Masarik, A. S., Conger, R. D. (2017) Stress and child development: A review of the Family Stress Model. *Current Opinion in Psychology*, 13: 85–90.
- [17] Lazarus, R. S. (1984). On the primacy of cognition. *American Psychologist*, 39(2): 124–129.