

The Effect of Parenting Styles on Adolescent Students' Learning Initiative: The Mediating Role of Academic Self-Efficacy

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ABSTRACT

To examine the mediating role of academic self-efficacy in the influence of parenting styles on adolescent students' learning initiative. Adolescent students were surveyed using the Parenting Styles Scale, the Learning Initiative Scale, and the Academic Self-Efficacy Scale, and 287 valid data were obtained. Learning initiative was found to be strongly connected with academic self-efficacy, and was positively and significantly correlated with the emotional warmth dimension of parenting style, while it was negatively correlated with the rejection dimension ($p < 0.05$). Academic self-efficacy partially mediated the relationship between parenting style and learning initiative and was significantly correlated with the emotional warmth dimension ($p < 0.05$). In the parenting style dimension, emotional warmth was also significantly and negatively associated with rejection; There was a significant positive correlation between rejection and over-protection. Rejection was a significant negative predictor of adolescent students' learning initiative, while emotional warmth was a significant positive predictor. Parenting styles with emotional warmth contribute to children's learning initiative and academic self-efficacy.

Keywords: Parenting styles, Learning initiative, Self-efficacy, Adolescent students

1. INTRODUCTION

The educational reform in China puts the development of students' initiative at the top of the teaching objectives. Cultivating and improving students' learning initiatives has become an important task of quality education [1]. Researchers pointed out that as a motivational-type factor that triggers students to engage in learning, the state of students' learning initiative is a key factor that affects the quality of students' learning, and it plays the role in arousal, orientation, maintenance, and regulation of learning [2]. Learning initiative refers to the inner motivational system which functions to drive students engage in learning actively, positively and persistently [3].

Parenting style refers to a characteristic, pattern, and tendency of behaviour exhibited by parents in their daily life of raising and educating their children. It is an aggregate of parenting concepts, attitudes, and emotional

climate expressed in educational behaviors transmitted to children by parents, which is relatively stable and not easily changed with context [4,5]. According to family systems theory, in the family as a system, each member helps each other, especially the parents' help will have a great influence on the children [6]. Students' learning goals and motivation are largely inspired or guided by their parents. Previous research found that among many influencing factors, the family environment has a significant impact on students' learning [7]. Among all family factors, parenting styles have been a focused topic in educational psychology [8]. McClelland proposed that parents with children of low achievement motivation always focus on developing child dependency, giving children more discipline and restrictions [9]. Positive parenting styles were significantly and positively associated with academic achievement, while negative parenting styles were significantly negatively associated with academic achievement [10,11]. Moreover, parenting

styles have a considerable impact on children's learning initiatives [12].

Self-efficacy refers to a belief in one's own ability to perform and complete a task or achieve some personal goals [13]. Self-efficacy is associated with specific tasks, and this study focused on self-efficacy in academic contexts measuring self-efficacy related to learning which is called academic self-efficacy. Compared to teacher support, academic self-efficacy has a greater influence on students' learning behaviors, suggesting that students' academic self-efficacy are internal factors that motivate positive learning behaviour [14]. The prerequisites of achieving academic and personal success is the belief and confidence in one's own ability to complete the certain task [15]. According to Bassi, students with high academic self-efficacy value academic achievement more and are more eager to be educated than students with low academic self-efficacy [16]. Students with high self-efficacy invested more effort on their studies. A previous study found that the strength of academic self-efficacy influences the level of students' learning initiatives [17]. Furthermore, it has been shown that family factors was strongly linked with academic self-efficacy. Handful studies indicate that parenting styles have a significant role in their children's self-efficacy. The positive parenting style adopted by parents helps their children to develop a good self-concept [18].

Most of the existing studies on learning initiatives in China have focused on secondary school students' learning initiatives in a particular subject and are mostly qualitative [19]. Few studies have quantitatively analyzed learning initiative as a dependent variable, and quantitative studies have focused mainly on college students, with less attention paid to adolescent students [20]. Previous research on learning initiatives has focused more on the effects of single-subject enhancement strategies, cultivated inquiry, and classroom formats and modes of instruction on learning initiatives [21,22]. Research has focused on motivating initiative by teachers using the right teaching style to teach [23]. However, the role of family factors in influencing learning initiatives has received little attention from researchers. Particularly, there is a lack of exploration of the possible mediating role of academic self-efficacy between parenting styles on learning initiatives. However, family is the most dominant life scenario during adolescent development, and the goals set by family members, especially parents, and the usual parenting styles affect adolescent students' academic initiative.

While many branches of research on learning initiatives have developed oversea, some studies try to improve students' learning initiatives with different teaching styles, and studies that include modern technology like the iPad to explore the effectiveness of different learning methods from the teachers' perspective

[24,25]. However, this study pays attention to the link between learning initiative and parenting style, and the mediating effect of academic self-efficacy on learning initiative, which is innovative and can be used as a reference for further exploring the factors affecting learning initiative and putting it into practice

To sum up, it is of considerable practical and theoretical importance to find out how to motivate and enhance the learning initiative of adolescent students. Therefore, this study aims to investigate what kind of parenting styles motivate children to take the initiative in learning. Based on family systems theory and self-efficacy theory, this study will investigate the effects of parenting styles and academic self-efficacy on adolescent students' learning initiatives, as well as the mediating role of academic self-efficacy between parenting styles and learning initiatives. It was hypothesized that positive parenting styles would enhance adolescent students' learning initiatives through the mediating role of academic self-efficacy, whereas negative parenting styles would be detrimental to the development of adolescent students' learning initiatives.

2. METHODS

2.1. Participants

A convenience sampling method was used to select adolescent students aged 11-18 in various provinces and cities in China as the participants, and an online questionnaire was distributed using the WenJuanXing platform. Totally 315 questionnaires were sent out with 287 valid questionnaires returned (91%).

The participants consisted of 60.28% female and 39.72% male students. Of the sample, 87.11% of the participants were high school students and 12.89% were middle school students. It was found that 71.78% of the participants reported that the main study instructor at home was their mother. Besides, 44.60% of the participants of this study were the only child in their families.

2.2. Measures

2.2.1. Demographic information

This concise questionnaire was developed to get data about participants' gender, year in school, the number of siblings, academic achievement level in class, and parents' marital status and education level. This questionnaire also included a question asking the students who disciplined their study at home which indicates who is the main study instructor at home. The survey on parenting styles in this study was conducted only on the main study instructor chosen by the students.

2.2.2. Parenting Styles Scale

The Chinese version of the Short-Egna Minnenav Barndoms Uppfostran (s-EMBU) was developed by Arrindell et al. and revised by Jiang et al. [26,27]. It is a 21-item measure of parenting style. It includes three dimensions: rejection (6 items), emotional warmth (7 items), and over-protection (8 items). In this study, the emotional warmth dimension was treated as a positive parenting style, and the two dimensions of rejection and over-protection were considered negative parenting styles. The items involved a 4-point Likert scale ranging from 1 (never) to 4(always). In this study, the Cronbach’s α reliability coefficients for each dimension of this scale were 0.839, 0.873, and 0.776.

2.2.3. The Learning Initiative Scale

The Learning Initiative Scale was developed by Lin [1]. It is a 19-item measure of the learning initiative of adolescent students. It includes five dimensions, learning attribution, learning maintenance, sense of learning efficiency, sense of learning to mean, and learning adjustment. The items involved a 5-point Likert scale ranging from 1 (not describe me at all) to 5(describes me to a large extent). In this study, the Cronbach’s α reliability coefficient for this scale was 0.915.

2.2.4. The Academic Self-efficacy Scale

The Academic Self-Efficacy Scale was developed by Pintrich & DeGroot and revised by Liang [28,29]. It is an 11-item measure of academic self-efficacy from the perspective of learning ability. The items involved a 5-point Likert scale ranging from 1 (strongly disagree) to 5(strongly agree). In this study, the Cronbach’s α reliability coefficient for this scale was 0.931.

2.3. Data analysis

The data were statistically analyzed by SPSS 25.0 statistical software and the Process plug-in program written by Hayes for variance, correlation analysis, and regression analysis [30]. The intermediate effect test was performed using the bias-corrected percentile Bootstrapping method with 5000 replicate samples. Following previous studies, a limited number of inaccurate answer questionnaires (participants did not follow instructions) were excluded (5.7%, n=18) [31]. Questionnaires with response times less than half of the mean (3.2%, n=10) were also eliminated.

3. RESULTS

3.1. Descriptive statistics and correlation analysis

Correlations were analyzed for the factors of parenting styles of adolescent students with different levels of learning initiative. The means, standard deviations (SD), and correlation coefficients of the three research variables were presented in Table 1. Emotional warmth correlated 0.41 with academic self-efficacy indicating that academic self-efficacy was significantly and positively associated with the emotional warmth dimension of parenting style, and was negatively correlated with the rejection and over-protection dimensions. The rejection dimension of parenting style was significantly and positively correlated with the over-protection dimension.

In addition, academic self-efficacy has a significant and positive correlation with learning initiative. The level of emotional warmth of parents has a significant positive correlation (0.45) with students’ learning initiative, and the level of rejection has a significant negative correlation with students’ learning initiative, but the level of over-protection has no significant correlation.

Table 1. Means, standard deviations, and correlation of the research variables (N=287)

	Mean	SD	1	2	3	4	5
1. Rejection	1.54	0.54	1				
2. Emotional warmth	2.73	0.66	-0.45**	1			
3. Over-protection	2.17	0.53	0.58**	-0.30**	1		
4. Learning initiative	58.53	12.51	-0.18**	0.45**	-0.07	1	
5. Academic self-efficacy	37.29	7.24	-0.20**	0.41**	-0.14*	0.69**	1

Note: *p<0.05 **p<0.01, Same below.

Table 2. Regression of parenting style on learning initiative and academic self-efficacy

	Learning initiative				Academic self-efficacy				Learning initiative			
	B	SE	t	β	B	SE	t	β	B	SE	t	β
Rejection	-0.36	1.62	-0.22	-0.02	-0.06	0.96	-0.07	-0.01	-0.30	1.28	-0.23	-0.01
Emotional warmth	8.74**	1.13	7.77**	0.46	4.41**	0.67	6.63**	0.40	4.12**	0.95	4.33**	0.22
Over-protection	2.55	1.69	1.51	0.11	-0.43	1.04	-0.41	-0.03	3.00*	1.31	2.29	0.13
Academic self-efficacy									1.05**	0.08	13.24**	0.61
R ²	0.20				0.16				0.50			
F	F=24.13**				F=19.21**				F=73.05**			

Note: All variables in the model are brought into the regression equation after being standardized.

3.2. Regression analysis

A linear regression analysis was conducted using the standard scores of parental style’s three dimensions (rejection, emotional warmth, and over-protection) and the score of the academic self-efficacy questionnaire as independent variables and the score of students’ learning initiative questionnaire as dependent variables. As shown in Table 2, the emotional warmth parenting style was a significant predictor of students’ learning initiative. Emotional warmth, rejection, over-protection, and academic self-efficacy can explain 50.9% of the variation in learning initiative ($F=73.045, p<0.001$). Specifically, the emotional warmth dimension was able to significantly and positively predict students’ learning initiative. Rejection and over-protection were not significant predictors of students’ learning initiative

3.3. Mediating effects of academic self-efficacy

To further investigate the relationship between academic self-efficacy, learning initiative, and parenting styles, three mediation models were established with three types of parenting styles as independent variables, learning initiative as dependent variables, and academic self-efficacy as mediating variables. Model 4 in the Process program was used to examine the mediating effect of academic self-efficacy on learning initiative and parenting style. As shown in Figure 1, emotional warmth in parenting style not only has a direct effect on learning initiative, with a standardized estimate path coefficient of 0.22** but also constitutes an intermediate link in the path of "parenting style → academic self-efficacy → learning initiative".

Emotional warmth has a positive predictive effect on adolescent students’ academic self-efficacy significantly ($B=4.41, t=6.63, p<0.01$), and students’ academic self-efficacy also has a positive predictive effect on learning initiative significantly ($B=1.05, t=13.24, p<0.01$). Thus, emotional warmth has a significant indirect effect on learning initiative through academic self-efficacy, and

the direct effect of the emotional warmth dimension of parenting style on learning initiative was always significant. Therefore, academic self-efficacy played a partially mediating role in the effect of parenting style on learning initiative. In contrast, the effect of rejection and over-protection on both learning initiative and academic self-efficacy were not significant.

There is a significant partial mediating effect of academic self-efficacy between emotional warmth and learning initiative, and the 95% Bootstrap CI is [0.16, 0.32], not including 0. The direct effect (0.22) and mediation effect (0.40) account for 47.14% and 52.86% of the total effect respectively.

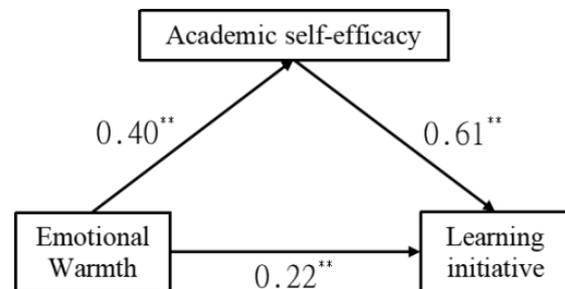


Figure 1 Academic self-efficacy mediates the effect of the emotional warmth dimension of parenting style on adolescent students’ learning initiative.

4. DISCUSSION

4.1. Major findings

In line with the hypothesis, students’ learning initiative has a significantly positive association with academic self-efficacy, and both were significantly and positively related to the emotional warmth dimension of parenting style, and negatively related to the rejection and over-protection dimensions. This study provides evidence regarding how and why parenting styles affect adolescent students’ learning initiative with the mediating role of academic self-efficacy. We find that

academic self-efficacy was partially mediated by the emotional warmth dimension of parenting style and learning initiative. This finding is consistent with what has been observed in Li's study [12]. However, the mediating effect of academic self-efficacy on learning initiative through the rejection and over-protection dimension is not significant. Reasons for this can only be speculative. For instance, only 4.2% (n=12) of the participants reported that their parents adopted a rejection parenting style. The data may not be representative because the sample is too small. Another reason may be that the low-level of rejection and over-protection was not apparent enough to elicit a low-level of learning initiative.

These findings show that parenting style can have an important impact on children's learning initiative. Parents' adoption of emotional warmth parenting style contributes to children's learning initiative and academic self-efficacy, while rejection and over-protection are not conducive to developing children's learning initiative. A possible explanation for this might be that emotional warmth makes children feel more attention and support, which leads to a higher sense of self-efficacy and helps children develop self-confidence, thus increasing academic initiative. In contrast, rejection and over-protection parenting styles limit the cultivation of the child's self-efficacy and may cause children to lose interest in learning and thus give up on themselves. Meanwhile, these findings align with previous studies, which found that positive parenting styles, including high levels of emotional warmth, were associated with low levels of academic fatigue and burnout, while negative parenting styles involving rejection, and over-protection, were the opposite [32].

To the best of our knowledge, previous studies have not established a mediation model between parenting style and adolescent students' learning initiative but a handful of researches are about study motivation. Based on our assumptions, there is still a difference between the definition of learning initiative and study motivation. There are two types of study motivation: extrinsic and intrinsic motivation, which mainly focus on why students need to study and purpose of students' study behaviors. However, the starting point of current study is that the issue of learning initiatives is a worrying issue for Chinese parents. Learning initiative mainly focuses on the behaviors that students consciously and actively review and consolidate what they have learned in school at home and efficiently complete after-school assignments. Thus, learning initiative has an important effect on the effectiveness of students' learning at home and academic performance.

4.2. Limitations

In this study, some limitations could be improved by further research. First, the study of parenting styles relied

on the children's self-reports of the parenting styles they received, rather than asking the parents to describe the parenting styles they provided, which may have been subjective and biased by the students. Furthermore, students who did not live with their parents for a long period of time were not excluded from the questionnaire participants. Future research could explore the differences between parenting styles reported by parents and those perceived by children, and whether there are differences in the effects of the two factors on learning initiatives. Follow-up studies should use a variety of measures, such as behavioral observations and interviews, to obtain more accurate data on parenting styles. Thirdly, this study used a very small convenience sample which limits the universality and replicability of the study. The students who participated in the study may not be representative of all students in China. Further research could replicate the results of this study using a larger sample.

4.3. Implications

From the result of this study, it can be known that in the process of children's development, emotional warmth plays a crucial role in shaping children's consciousness and study behavior. Therefore, parenting style is a key factor in the improvement of children's learning initiatives. However, researchers have found that Chinese parents show less emotional warmth than American parents [33]. Nevertheless, we can always hear parents complain about their children's lack of learning initiative and love for study in our lives. Accordingly, parents should adopt more emotionally warm parenting styles to increase children's learning initiative. Thus, this study plays an important role in informing parents about their important impact on their offspring's attitude towards learning and even helping them to change their parenting style to an emotional warmth one.

The reason adolescent trait anxiety declined by positive parenting styles is possible that when children are faced with stressful situations or have developed anxiety, warmth and patient guidance from parents may make children feel cared for and supported, thus reducing the likelihood of anxiety or directly alleviating it [32].

However, studies about parenting styles on learning initiatives are still scarce, both in China and over-world. Therefore, the present study can serve as evidence that positive parenting style is a key factor in the improvement of children's learning initiative.

5. CONCLUSION

Taken together, this study suggests that positive parenting styles can enhance academic self-efficacy and learning initiative among adolescent students. Therefore, it is important that parents provide with more emotional warmth for their children. Future research could focus on

the possible effects of parenting styles on student traits, habits, and other aspects.

Also, this study highlights the mediating role of academic self-efficacy on parenting style and learning initiative. Future research may improve learning initiatives by increasing academic self-efficacy.

REFERENCES

- [1] S.H. Lin, Development of a self-assessment questionnaire for high school students' learning initiatives, *Mental Health Education in Primary and Secondary School*, 2016(06), pp. 4-7. DOI: <https://doi.org/10.3969/j.issn.1671-2684.2016.06.002>.
- [2] Y. Lu, L.H. Lu, Z.Q. Ge, Z. J. Wang & J.J. Zhuang, An Empirical Study on the Learning Initiative of Undergraduates in Research Universities in China, A Case Study of Electronic Information Students in Eight Universities, *Research in Teaching*, 2016(04), pp. 1-7.
- [3] S.H. Lin, The relationship between proactive personality, learning initiative and academic achievement in high school students, *Mental Health Education in Primary and Secondary School*, 2020(18), pp. 15-21.
- [4] N. Darling, L. Steinberg, Parenting style as context: An integrative model, *Psychological Bulletin*, 1993, 113(3), pp. 487 - 496. DOI: <https://doi.org/10.1037/0033-2909.113.3.487>.
- [5] J.C. Thimm, Mediation of early maladaptive schemas between perceptions of parental rearing style and personality disorder symptoms, *Journal of behavior therapy and experimental psychiatry*, 2010, 41(1), pp. 52 - 59. DOI: <https://doi.org/10.1016/j.jbtep.2009.10.001>.
- [6] U. Bronfenbrenner, Contexts of child rearing: Problems and prospects, *American Psychologist*, 1979, 34(10), pp. 844 - 850. DOI: <https://psycnet.apa.org/doi/10.1037/0003-066X.34.10.844>.
- [7] L. Ngesu, A.F. Atieno, Influence of home and school based factors on pupils academic performance at kenya certificate of primary education in makadara sub-county, nairobi county, 2019. DOI: <https://doi.org/10.31142/ijtsrd21607>.
- [8] J. Yang, X. Zhao, Parenting styles and children's academic performance: evidence from middle schools in china, *Children and Youth Services Review*, 2020, pp. 113. DOI: <https://doi.org/10.1016/j.childyouth.2020.105017>.
- [9] D.C. McClelland, D.A. Pilon, Sources of adult motives in patterns of parent behavior in early childhood, *Journal of Personality and Social Psychology*, 1983, 44(3), pp. 564-574. DOI: <https://doi.org/10.1037/0022-3514.44.3.564>.
- [10] N.L. Seng, Z. Hanafi, M.B. Taslikhan, Parenting styles and academic achievement, *Scholars Journal of Arts, Humanities and Social Sciences*, 2016, 4(3A), pp. 193-200.
- [11] Y.T. Xie, Z.F. Shi, L. Yin, L. Lan, A meta-analysis of the relationships between Chinese parenting styles and children's academic achievement, *Psychological Development and Education*, 2022(03), pp. 366-379. DOI: <https://doi.org/10.16187/j.cnki.issn10014918.2022.03.08>.
- [12] Y.P. Li, Characteristics of parenting styles of junior high school students and their relationship with academic achievement, *Youth & Children Research and Practice*, 2021(01), pp. 22-29.
- [13] A. Bandura, S. Bandura, A. Bandura, Social foundation of thoughts and actions: A social cognitive theory, PRENTICE-HALL, 1986.
- [14] C.M. Ji, H. Zhao, The relationship between teacher support, academic self-efficacy, and academic achievement of primary and middle school students: A meta-analysis structural equation model, *Teacher Education Research*, 2021, 33(06), pp. 106-113. DOI: <https://10.13445/j.cnki.t.e.r.2021.06.008>.
- [15] E.C. McWilliams, Self-efficacy, implicit theory of intelligence, goal orientation and the ninth-grade experience (Unpublished doctoral dissertation), Northeastern University, Boston, 2014.
- [16] M. Bassi, P. Steca, A.D. Fave. et al., Academic Self-Efficacy Beliefs and Quality of Experience in Learning, *J Youth Adolescence*, 2007, 36, pp. 301-312. DOI: <https://doi.org/10.1007/s10964-006-9069-y>.
- [17] X.J. Huang, Enhancing self-efficacy and learning motivation, *Educational Review*, 2005(05), pp. 108-110.
- [18] W.A. Arrindell, E. Sanavio, G. Aguilar., C. Sica, C. Hatzichristou, M. Eisemann, J. van der Ende, The development of a short form of the EMBU: Its appraisal with students in Greece, Guatemala, Hungary and Italy, *Personality and Individual Differences*, 1999,27(4), pp. 613-628. DOI: [https://doi.org/10.1016/S0191-8869\(98\)00192-5](https://doi.org/10.1016/S0191-8869(98)00192-5).
- [19] J.W. Zhang, The influence of various elements in physical education on students' learning initiative, *Education and Vocation*, 2013(15), pp. 182-183. DOI: <https://10.13615/j.cnki.1004-3985.2013.15.087>.

- [20] X. C. Sun, Parent's upbringing learning motivation and autonomous learning ability in college students, *Psychological Monthly*, 2020, 15(18), pp. 85-88. DOI: <https://10.19738/j.cnki.psy.2020.18.034>.
- [21] H. M. Lai, Cultivation of students' initiative in elementary school mathematics teaching, *HuaXia JiaoShi*, 2016(02), pp. 57-58. DOI: <https://10.16704/j.cnki.hxjs.2016.02.046>.
- [22] J. Chen, S. Fei, J. Huang, J. Xu, L. Wu, Study on the Impact of Flipped Classroom on Learning Initiative in Intensive Care Courses in Higher Vocational Nursing Students, In 3rd International Conference on Culture, Education and Economic Development of Modern Society (ICCESE 2019), Atlantis Press, pp. 990-994. DOI: <https://dx.doi.org/10.2991/iccese-19.2019.217>.
- [23] F. Wang, C. Y. Yan, W. T. Yi, J. Ma, Encouraging learning initiative by ritualized teaching: taking elemental chemistry learning as example, *Chinese journal of chemical education*, 2022, 43(04), pp. 43-48. DOI: <https://10.13884/j.1003-3807hxjy.2020110149>.
- [24] R. Brenda, U. Luhanga, Enhancing Student Engagement through an Institutional Blended Learning Initiative: A Case Study, *Teaching and Learning Inquiry*, 2018,6(2), pp.97-114 DOI: <https://doi.org/10.20343/teachlearninqu.6.2.8>.
- [25] J. Hargis, C. Cavanaugh, T.Kamali, M. Soto, A Federal Higher Education iPad Mobile Learning Initiative: Triangulation of Data to Determine Early Effectiveness, *Innovative Higher Education* volume, 2014, 39, pp.45-47. DOI: <https://doi.org/10.1007/s10755-013-9259-y>.
- [26] W. A. Arrindell, E. Sanavio, G. Aguilar, C. Sica, C. Hatzichristou, M. Eisemann, J. van der Ende, The development of a short form of the EMBU: Its appraisal with students in Greece, Guatemala, Hungary and Italy, *Personality and individual Differences*, 1999, 27(4), pp. 613-628. DOI: [https://doi.org/10.1016/S0191-8869\(98\)00192-5](https://doi.org/10.1016/S0191-8869(98)00192-5).
- [27] J. Jiang, Z.R. Lu, B.J. Jiang, X. Yan, Revision of the short-form egna minnen av barndoms upp fostran for Chinese, *Psychological Development and Education*, 2001(01), pp. 94-99. DOI: <https://10.16187/j.cnki.issn1001-4918.2010.01.017>.
- [28] P.R. Pintrich, E.V. De Groot, Motivational and self-regulated learning components of classroom academic performance, *Journal of educational psychology*, 1990,82(1), pp. 33. DOI: <https://psycnet.apa.org/doi/10.1037/0022-0663.82.1.33>.
- [29] Y.S. Liang, Study on achievement goals, attribution styles and academic self-efficacy of college students, *Central China Normal University*, 2000, pp. 32-33.
- [30] A.F. Hayes, *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*, Guilford publications, 2017, 51(3), pp. 335-337.
- [31] B.J. Young, D.P. Wallace, M. Imig, L. Borgerding, A.M. Brown-Jacobsen, S.P. Whiteside, Parenting behaviors and childhood anxiety: A psychometric investigation of the EMBU-C, *Journal of Child and Family Studies*, 2013, 22(8), pp. 1138-1146. DOI: <https://doi.org/10.1007/s10826-012-9677-y>.
- [32] X. Chen, W. Shi, Cross-legged regression analysis of relationship between academic self-concept and academic achievement in primary and middle school students: Test of reciprocal effect model and development perspective, *Psychological Development and Education*, 2016, 32(1), pp. 81-88. DOI: <https://doi.org/10.16187/j.cnki.issn1001-4918.2016.01.11>.
- [33] P.Wu, C.C. Robinson, C. Yang, C.H. Hart, S.F. Olsen, C.L. Porter, ... X. Wu, Similarities and differences in mothers' parenting of preschoolers in China and the United States, *International Journal of Behavioral Development*, 2002, 26(6), pp. 481-491. DOI: <https://doi.org/10.1080/01650250143000436>.