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The Relationship Between Family Educational Inputs and Middle School Students' Academic Achievement: A Moderated Mediated Effects Analysis

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Abstract

In order to clarify the intrinsic mechanism of the influence of family education input on junior high school students' academic performance, this study constructed a moderated mediation model based on the S-C-R theory, and used the Family Education Input Scale, the Social Support Scale, the Academic Efficacy Scale, and the Academic Performance Questionnaire to conduct the survey. The results showed that: (1) family education input has a positive predictive effect on academic achievement; (2) family education input can significantly predict junior high school students' academic achievement through the mediating effect of academic efficacy; (3) with the increase of social support, the predictive effect of family education input on academic efficacy becomes more obvious. Conclusion: The moderated mediation model of family education input affecting junior high school students' academic achievement was established, in which academic efficacy mediated between family education input and academic achievement, and social support moderated between family education input and academic efficacy.

Keywords: family educational input, academic achievement, academic efficacy, social support

1. Introduction

Traditionally, Chinese people have the concepts of "learning is good for one's career" and "books have their own face like jade, books have their own golden houses", which make parents attach great importance to their children's learning and focus on their academic performance. Academic performance refers to the extent to which a student, teacher, or institution meets its short- or long-term educational goals, and is generally measured by scores. (Rodriguez-Hernandez C F, Cascallar E & Kyndt E, 2020) An individual's academic performance has a significant impact on an individual's psychological, behavioral, and future development, and Watts' research indicates that an individual's math and reading achievement during adolescence is a very important influence on his or her achievement throughout his or her career. (Watts T W, 2020) As an important indicator of students' learning status and future development, it is necessary to study academic achievement. There are many factors affecting academic performance, including personal cognitive, emotional and

other internal factors and objective environmental factors such as family and school. From the perspective of ecosystem theory, family factors, as a kind of basic environmental factors for junior high school students, will inevitably affect junior high school students. Previous studies have also shown that family resources contribute the most to students' academic performance (Fan Jingbo, 2019). The family educational input as a kind of family resource has the greatest contribution to students' academic performance. And the degree of family educational input, as a kind of family resources, is very likely to have an impact on academic performance. Therefore, this study will explore the intrinsic influence mechanism of family educational inputs on junior high school students' academic performance.

2. Synthesis of Research

Family Educational Investment (FEI) has a narrow and a broad meaning. In the narrow sense, family educational investment refers to the expenditure on children's learning, including tuition fees, accommodation fees, textbook fees and other school education expenditures, as well as the purchase of education services and other out-of-school expenditures. Wei Xin and other scholars in China make a distinction between the types of family education inputs from the human capital investment theory, one is basic education inputs, the other is extended education inputs, in addition, he believes that it also includes selective education inputs, such as choosing school fees. (WEI Xin & QIU Liqiang, 1998) In addition, he believes that it also includes selective education inputs such as school choice fees. From a broad point of view, family education investment includes not only economic investment, but also non-economic investment such as education time and experience. (Liu A & Xie Y. 2015) Parental participation, practice, and family parenting styles can all be categorized as family education inputs. (Li Jiali & Zhang Minxuan, 2020) In a broad sense, family education inputs include not only economic inputs, but also non-economic inputs such as educational time and experience.

According to the ecosystem theory, the development of an individual is nested in the environment in which he or she lives, and the interaction between the individual and the environment promotes the occurrence and development of individual behavior. The family is an important and fundamental environment for children's growth, and its influence on children is subtle and far-reaching, while family educational input, as one of the important predictors of family factors, has received extensive attention from researchers. Studies have shown that there is a certain correlation between family education input and adolescents' academic achievement (Li Jiali & Zhang Minxuan, 2020). The study shows that family education input has a certain correlation with adolescents' academic achievement. Family education investment can affect academic achievement mainly through two paths, one is through the financial investment in family education to compete for quality educational resources. (Li Zhonglu & Qiu Zeqi, 2016) The first is to compete for quality educational resources through the financial investment in family education; the second is to help children through the time and effort of parents in practice, which promotes the improvement of academic achievement. (Hango D, 2007) The second is to promote academic achievement through the time and energy parents invest in helping their children through practice. A study in Japan found that extracurricular tutoring resources can improve students' academic performance and also increase their chances of obtaining higher education. (Stevenson D L & Baker D P, 1992) A study in Japan found that extracurricular tutoring resources improved students' academic performance and increased their chances of obtaining higher education. A study in Germany found that extracurricular tutoring resources led to poorer academic performance. (Guill K & Bos W, 2014) It can be seen that there is a close relationship between family education input and academic performance, but it varies in different cultural contexts. Previous studies in China have shown that the time investment in family education affects academic ability, and also has an impact on children's academic performance, (LI Yanfang & LU Ying, 2013) and is strongly predictive of children's academic performance. (Wu Hang, 2015) It can be seen that the investment of time in family education is the most important factor in students' academic performance. It can be seen that family education investment is one of the important predictors of students' learning domains. Therefore, this study will explore the intrinsic relationship between family education investment and academic performance in the Chinese cultural context.

Academic self-efficacy (ASE) is an individual's perception or belief in his or her ability to effectively control all aspects of his or her life. Bandura defines it as a student's judgment and evaluation of his or her ability to complete learning tasks and achieve learning goals. (Bandura A, 1977) This concept is based on the social cognitive theory (social cognitive theory) proposed in the 1970s, which added a cognitive component to the traditional behaviorist theory of personality, focusing on people's subjective awareness, and proposing the interactionist theory and self-efficacy theory. Interaction theory emphasizes that environment, cognition and behavior are interconnected and mutually determined in the social learning process. Cognition plays a dominant role, and the core component of this cognitive factor is self-efficacy (Bandura A, 1977). According to this theory, middle school students have higher perceptions of their ability to achieve goals, i.e., higher levels of academic self-efficacy, when their families are better invested in their education, and this positive prediction was found in the case of elementary and high school students. (LIU Chunlei, HUO Zhenzhen & LIANG Xin, 2018) This positive prediction was validated for elementary, high school, and middle school students (Liu, Y.W, 2017), and high school students, and this positive prediction was validated across multiple academic levels. Academic self-efficacy is closely related to an individual's academic behavior and achievement, and previous studies have concluded that the two are positively correlated. Cheng Cuiping et al. confirmed through survey data that elementary school children's self-efficacy can be a good positive predictor of academic achievement outcomes (Cheng Cuiping, Tian Linhong & You Man, 2020). Gu Dan's study constructed a conditional process model and obtained that academic self-efficacy mediates the relationship between parenting style and academic achievement. (Gu Dan, 2010) Chunmei Ji concluded that teacher support not only directly improves the academic performance of elementary and middle school students, but also indirectly improves academic performance by increasing the level of academic self-efficacy. (Ji Chunmei & Zhao Hui, 2021) In summary, family investment in education significantly influences the academic performance of primary and secondary school students. In conclusion, it is hypothesized that family educational input significantly affects individuals' academic self-efficacy, and academic self-efficacy significantly predicts their academic achievement, therefore, it is hypothesized that academic self-efficacy partially mediates the relationship between family educational input and academic achievement.

Social support refers to an individual's feeling of care, respect and attention from members of their own social network, which is a potential resource that exists when an individual is facing a difficult situation, including practical help, social-emotional help, and informational help provided by family members, friends, and relatives. (Zhang J, 2012) Social Support Theory. Social support theory suggests that the supportive behaviors felt by individuals in social relationships are universally beneficial, and that they can contribute to an individual's physical and mental development. (Lv Peiyao, 2010) Some scholars have found that social support and its dimensions are significantly and positively correlated with academic self-efficacy and its dimensions to varying degrees. (Zhang J, 2012) It was found that social support and its dimensions were positively correlated with academic self-efficacy and its dimensions to varying degrees. It indicates that the higher the level of high school students' satisfaction with others' support and understanding in the process of social interaction, the higher the level of their academic self-efficacy. Other scholars have confirmed that the higher the level of social support of middle school students, then the higher their academic self-efficacy and self-regulation efficacy (Liang Yannan, 2015). According to the buffer model of social support, social support from the nearest social relationship is the most important protective resource for an individual in the face of external environmental stimuli. (Lee C-Y S & Goldstein S E, 2016) As a protective factor, social support can not only buffer the negative effects of unfavorable factors on individuals, but also promote the negative effects of favorable factors on individuals. (Luthar S S, Cicchetti D & Becker B, 2000) Social support, as a protective factor, not only buffers the negative effects of unfavorable factors on the individual, but also promotes the positive effects of favorable factors on the individual. (LI Wendao, ZOU Hong & ZHAO Xia, 2003) That is to say, when the investment in family education is low, the increase of social support can alleviate the negative cognition of

individuals (curbing the decrease of academic self-efficacy); and when the investment in family education is sufficient, according to the superposition effect, the investment in family education and the social support can work together on academic self-efficacy to produce a more positive effect. In summary, this study concluded that social support can play a moderating role between family educational input and junior high school students' academic self-efficacy.

Based on the S-C-R theory, social support theory and the results of empirical research, this study is devoted to exploring the relationship between family educational investment and students' academic performance, introducing two intermediate variables, academic efficacy and social support, and proposing a moderated mediator model by using academic efficacy as a mediator and social support as a moderating variable (see Figure 1).

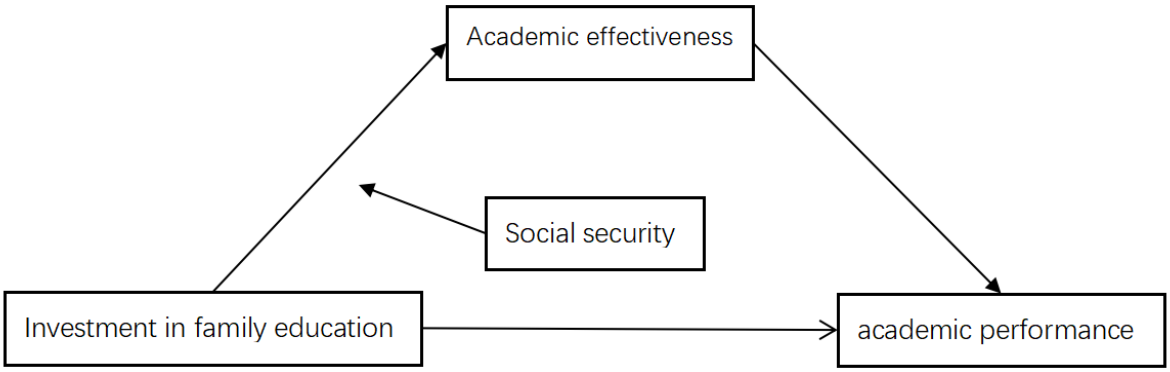

Figure 1. Hypothetical modeling of the impact of family educational inputs on academic achievement

3. Theoretical Foundation

3.1 "S-C-R" Theory

The mediation framework of this study was conceived from the "Stimulus-Cognition-Response" theoretical model (S-C-R theory) of cognitive psychology, which explains the relationship between several variables, such as family education investment, academic self-efficacy, and academic performance, etc. Early on, behavioral psychology proposed the "Stimulus-Response" theoretical model (S-R theory), which is the response of an individual to an external stimulus. Early behavioral psychology proposed the "Stimulus-Response" theoretical model (S-R theory), that is, the response produced by individuals after being stimulated by external stimuli. Cognitive psychology adds the important factor of cognition on the basis of this model, which is of great significance in elaborating the mediating role of cognition between stimulus and response.

3.2 Social Support Theory

The mediation framework of this study is derived from the social support theory, and the mechanism of social support theory is mainly divided into main effect modal, buffering effect modal and dynamic modal, and this study mainly applies the main effect modal and the buffering effect modal. In this study, we mainly apply the main effect model and the buffering effect model to explain the main effect of academic self-efficacy, i.e., the individual is stimulated by the external stimulus of the family's educational inputs, and is regulated by the social support to curb the decrease of academic self-efficacy and promote the increase of academic self-efficacy.

4. Research Design

4.1 Purpose of the Study

As an important indicator of academic achievement, academic performance can, to a certain extent, represent the academic performance of junior high school students. Based on the "S-C-R" theory, this study aims to investigate how family educational input affects junior high school students' academic performance by means of a questionnaire, to verify whether academic efficacy mediates the relationship between family educational input and academic performance, and to verify whether there is a significant difference in the effect of family educational input on the academic efficacy of students with different levels of social support, i.e., the moderating effect of social support.

4.2 Significance of the Study

4.2.1 Theoretical Implications

From the perspective of theoretical significance: First, at the academic research level, this study constructs a new structural model based on the "S-C-R" theory and the social support theory, using academic efficacy as the mediator and social support as the moderator, to explore the influence of family educational input on junior high school students' academic performance, enriching the research on the mechanism of the influence of academic performance and its inherent structure of junior high school students. Secondly, from the perspective of cognition, we explored the influence of family education input on junior high school students' academic performance, expanding the scope of the boundary between the two studies and enriching the related theoretical research. Third, guided by the social support theory, the variable of support is introduced to make the research on the influence mechanism of junior high school students' academic performance more specific and detailed.

4.2.2 Practical Implications

From the perspective of practical significance: first, the study from the perspectives of family environment, individual students' cognition and level of external support is conducive to the improvement of junior high school students' academic performance in various aspects. Second, it can provide experience and reference for the mental health education of middle school students.

4.3 Research Objects

A total of 400 questionnaires were distributed to several classes in several middle schools in the cities of Mudanjiang, Hegang, and Harbin using the cluster sampling method. After obtaining the consent of the school and the students, the questionnaires were administered anonymously in groups of two subjects in each class, in accordance with the instructions, and the subjects filled in the questionnaires independently and withdrew them immediately after completing the questionnaires. After analyzing and screening the data and removing invalid data, 372 questionnaires were valid, with a validity rate of 93%. Among them, there were 152 (40.9%) in the first grade, 166 (44.6%) in the second grade, and 54 (14.5%) in the third grade; 202 (54.3%) boys and 170 (45.7%) girls; 62 (16.7%) only children and 310 (83.3%) non-only children; 154 (41.4%) in the rural population and 218 (58.6%) in the urban population. 218 (58.6%).

4.4 Research Tools

4.4.1 Family Education Input Scale

The "Family Education Input Scale" was used to measure the family's investment in education. (Chen Hui, 2014) The questionnaire uses a 5-point scale ranging from very poor (1) to very good (5), and the higher the score, the more time parents devote to their children's education. The questionnaire is scored on a 5-point scale ranging from very poor (1) to very good (5), with higher scores indicating that parents invest more in their children's education. The questionnaire had good internal consistency with a Cronbach's alpha coefficient of 0.708.

4.4.2 Academic Efficacy Scale

The scale used in this study is a widely used one in the academic world, which was developed by Liang Yusong et al. with reference to the relevant dimensions of the Academic Self-Efficacy Questionnaire (ASEQ) developed by foreign scholars. (Su Chunyan, 2019) This scale contains two dimensions, each with 11 questions, and a total of 22 questions. The scale consists of two dimensions with 11 questions each, totaling 22 questions. The scale is scored on a 5-point scale, with 1 representing "not at all" and 5 representing "completely", with higher scores indicating higher efficacy. The Cranach's alpha coefficients for the total and subscales of the scale in this study were 0.883, 0.888, and 0.703.

4.4.3 Social Support Scale

The Social Support Scale was adopted from the Collaborative Social Support Scale translated and modified by Kang Qian Jin. (HUANG Li, JIANG Qianjin & REN Weihong, 1996) The scale consists of 12 items including three dimensions, namely, family support, friend support and other support. The scale consists of 12 items, including three dimensions, namely, family support, friend support, and other support, and is used to measure the degree to which an individual feels supported by family, friends, and other people. The scale is based on a 7-point Likert scale (from 1 to 7 indicating strongly disagree to strongly agree, respectively), with higher scores representing higher levels of social support for the individual. In this study, the internal consistency reliability coefficient of the scale was 0.88, which has good reliability.

4.4.4 Measurement of Academic Achievement

The raw grades of language, mathematics and English in the final exam of the first semester of the current academic year of the tested class in the sample school were selected, and in order to reduce the error, the collected students' grades in each subject were summed up and then averaged, and the valid raw grades scores were converted into standardized scores, which were used as the measure of academic performance in this study.

4.4.5 Statistical Methods

In this study, the collected data were analyzed and processed mainly through SPSS 22.0 and Hayes' (2013) SPSS macro program PROCESS.

5. Findings

5.1 Control and Testing of Common Method Deviations

Since this study used the method of questionnaire survey, there may be common method bias. Therefore, Harman's one-way test was used to test for common method bias, and the results showed that there were 11 factors with eigenvalues greater than 1, and the variance explained by the first factor was 22.77%, which was much smaller than the critical value of 40%, indicating that there was no serious common method bias in this study. (ZHOU Hao & LONG Lirong, 2004)

5.2 Descriptive Statistics and Correlation Analysis

In order to examine the overall situation of family educational input, social support, academic efficacy and academic achievement, descriptive statistical analysis and correlation analysis were conducted on the four variables, and the results showed that (see Table 1): family educational input (M=3.22, SD=0.69), social support (M=3.68, SD=0.75), academic efficacy (M=3.50, SD=0.64), and academic achievement (*M* =3.12, SD=0.70). There was a significant positive correlation between family educational input and social support, family educational input and academic efficacy, and family educational input and academic achievement. Social support was positively correlated with academic efficacy, social support was positively correlated with academic achievement, and academic efficacy was significantly positively correlated with academic achievement.

Table 1. Results of correlation analysis of variables

	M	*SD*	Investment in family education	Academic effectiveness	Academic performance	Social security (pensions, medical insurance)
Investment in family education	3.22	0.69	1			
Academic effectiveness	3.50	0.64	0.33***	1		
academic performance	3.12	0.70	0.24***	0.47***	1	
social security (pensions, medical insurance)	3.68	0.75	0.55***	0.34***	0.15***	1

Note: * p<0.05, ** p<0.01, *** p<0.001, below.

5.3 The Relationship Between Family Educational Inputs and Academic Achievement: A Moderated Mediation Model Test

From the results of the correlation analyses, it is clear that the relationship between family educational input, academic efficacy, academic achievement, and social support satisfies the condition of having a moderated mediation model. Model 4 (Model 4 is a simple mediation model) in the process plug-in developed by Hayes (2012) was used to test the mediation validity of academic efficacy in the relationship between home education input and academic achievement, controlling for gender, grade level, and place of residence. The results (see Table 2) show that the effect of home education input on academic achievement was significant (β=0.26, t=4.85, p<0,001) and remained significant after putting in the mediator variable (β=0.15, t=2.88, p<0,01). Family educational input also had a significant positive predictive effect on academic

efficacy (β=0.26, t=5.09, p<0,001). The upper and lower bounds of the Bootstrap 95% confidence intervals for the direct effect of family educational input on junior high school students' academic achievement and the mediating effect of academic efficacy did not include 0 (see Table 3), indicating that family educational input not only directly predicts junior high school students' academic achievement, but also predicts junior high school students' academic achievement through the mediating effect of academic efficacy. This direct effect (0.15) and the mediating effect of academic efficacy (0.11) accounted for 57.69% and 42.31% of the total effect (0.26), respectively.

Table 2. Mediating effects test for academic efficacy

Regression equation (n=372) Significance of regression coefficient Overall fit coefficient						
Outcome variable	Predictor variable	*β*	*t*	*R*	R^2	*F (df)*
Academic performance	distinguishing between the sexes	-0.02	-0.22	0.31	0.10	7.75 (4)
	grade	0.06	0.77			
	current address	-0.28	-2.71**			
	Investment in family education	0.26	4.85***			
Academic effectiveness	distinguishing between the sexes	0.03	0.36	0.42	0.17	15.31 (4)
	grade	0.27	2.05*			
	current address	-0.26	-2.74**			
	Investment in family education	0.26	5.09***			
Academic performance	distinguishing between the sexes	-0.04	-0.41	0.50	0.25	20.75 (5)
	grade	0.30	2.32*			
	current address	-0.16	-1.71			
	Academic effectiveness	0.15	2.88**			
	Investment in family education	0.45	8.81***			

Note: Each variable in the model was substituted into the regression equation after standardized z-scores.

Table 3. Decomposition of total, direct and mediating effects

	Efficiency value	Standard error	Lower limit of effect	Upper limit of effect	Relative effect value
aggregate effect	0.26	0.05	0.16	0.37	
direct effect	0.15	0.05	0.05	0.25	57.69%
intermediary effect	0.11	0.03	0.07	0.17	42.31%

Note: All values are retained to two digits by rounding.

Second, according to the test of the moderated mediator model of Wen Zhonglin et al. (WEN Zhonglin & YE Baojuan, 2014), the data were standardized, and Model 7 in the SPSS macro prepared by Hayes (2012) (Model 7 assumes that the first half of the mediating variable is moderated, which is consistent with the theoretical model of this study) was used to test the moderated mediator model controlling for gender, grade, and place of residence. The results (see Table 4) indicated that family educational input positively predicted academic efficacy (β=0.12, t=2.02, p<0.05). The interaction term between family educational input and social support significantly and positively predicted academic efficacy (β=0.16, t=3.37,

p<0.001). This indicates that social support plays a significant moderating role between family educational input and academic efficacy. In order to more clearly express the moderating role of social support, a simple decomposition of the effect of family education input on academic efficacy was plotted by dividing the scores of social support into high and low groups according to one standard deviation of positive and negative, respectively (see Figure 2). For subjects with lower levels of social support (*M-1SD*), family education input had a predictive effect on academic efficacy, but it was not significant (simple slope=-0.04, t=-0.52, p>0.05); while for subjects with higher levels of social support (*M+1SD*), family education input had a significant positive predictive effect on academic efficacy (simple slope=0.28, t=3.79, p<0.001), with a significant difference between the high and low subgroups, which in turn suggests that this moderating effect is significant, and the results indicate that the level of prediction of academic efficacy by family educational inputs continues to increase with rising social support.

Table 4. Moderated mediated effects model

Regression equation (n=372) Significance of regression coefficient Overall fit coefficient						
Outcome variable	Predictor variable	*β*	*t*	*R*	R^2	*F (df)*
Academic effectiveness	distinguishing between the sexes	0.14	1.53	0.48	0.23	15.90 (7)
	grade	0.20	1.58			
	current address	-0.27	-2.90**			
	an only child	-0.31	-4.36***			
	Investment in family education	0.12	2.02*			
	social security (pensions, medical insurance)	0.26	4.74***			
	Family investment in education* Social support	0.16	3.37***			

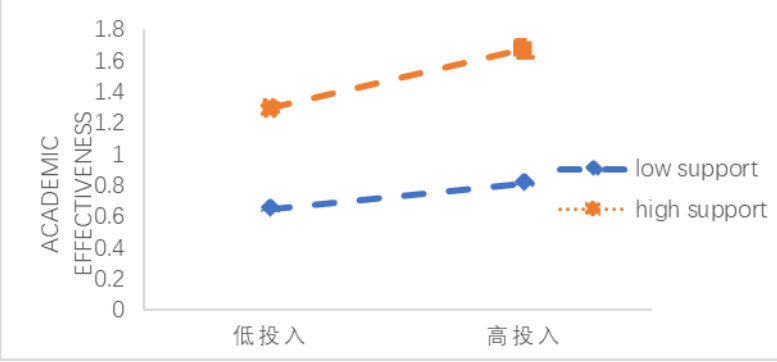

Figure 2. The moderating role of social support in the relationship between family educational commitment and academic efficacy

6. Talk over

6.1 Mediating Role of Academic Efficacy

The moderated mediation model established in this study points out the correlation between family education input and junior high school students' academic performance, and explores the mediating role of academic efficacy in the relationship between family education input and academic performance. On the one hand, it can help us to clarify the ways in which family educational inputs have positive effects on junior high school students' academic performance, and on the other hand, it can be helpful for us to take different measures to help junior high school students improve their

academic performance. The results of this study found that family educational input can effectively predict junior high school students' academic achievement through the mediating role of academic efficacy. The results of this study also support previous research. Bandura suggests that self-efficacy initially originates in the family, and that children are motivated to engage in recreational and social activities and to learn new information and skills when their parents provide an environment that stimulates their curiosity and helps them master social experiences. Therefore, the more opportunities parents provide for their children to succeed, the more likely they are to raise children with a higher sense of self-efficacy. (Pressley M & McCormick C B, 2006) The more opportunities parents provide for their children to succeed, the more likely they are to raise children with higher self-efficacy. Previous research has also shown that parental investment in education does not directly affect children's academic performance, but rather indirectly through individual cognitive and behavioral traits, with academic efficacy being a key component. (Liang Yannan, 2015) Therefore, lower academic self-efficacy is equivalent to cutting the "bridge" between parental investment in education and academic achievement. (Guo Xiaolin, Zhou Huan, Dou Gang, et al, 2017) Therefore, low academic self-efficacy is equivalent to severing the "bridge" between parental educational input and academic achievement. Thus, academic efficacy plays an important role in mediating the relationship between family educational input and academic achievement.

6.2 The Moderating Role of Social Support

This study investigated the moderating role of social support in the relationship between family educational input and academic efficacy by finding that social support moderates the relationship between family educational input and academic efficacy. In conjunction with the study, it was found that family educational inputs predicted academic efficacy more significantly in middle school students with higher levels of social support than in middle school students with lower levels of social support. This suggests that the relationship between family educational input and academic efficacy is conditioned by the level of social support, and that increasing the level of social support can strengthen the effect of family educational input on students' academic efficacy. The results of this study also support the views of previous studies. Some scholars have taken college students as research subjects and found that both subjective and objective support can improve their academic efficacy. (Bao YS & Hu Y, 2009) The results of this study also support the view of previous research. There are also studies that suggest that students are likely to form a better interpersonal relationship atmosphere when they receive support from teachers, which in turn improves their interest in learning and enhances their confidence in learning (YE Baojuan, FU Haohao, YANG Qiang, YU Yayuan, LEI Xi & CHEN Jiawen, 2017). This shows that social support plays an important moderating role in the relationship between family education input and academic efficacy. As social support increases, the predictive effect of family educational input on academic efficacy increases.

6.3 Innovations and Shortcomings of this Study

The innovations of this study are mainly reflected in the following: first, based on S-C-R theory and social support theory, a moderated mediation model is formed with academic efficacy as the mediator and social support as the moderating variable; second, this study clarifies the "pathway" of the influence of family educational input on junior high school students' academic performance (the mediating role of academic efficacy); third, it responds to the question of under what conditions family educational input has a more significant influence on junior high school students' academic performance (the moderating role of social support).

There are some limitations in this study. First, the sampling is somewhat restricted, a total of 400 valid data were collected, the sampling range is limited, which may affect the generalization of the research results, and it is hoped that in future research, sampling can be carried out in a wider range, and richer data can be collected for analysis. Secondly, the cross-sectional research method was used with a certain degree of chance, and follow-up studies should be conducted to analyze it.

7. Reach a Verdict

(1) Academic performance of middle school students is in the upper middle level of achievement

(2) Family investment in education significantly predicts middle school students' academic

achievement

(3) A moderated mediation model of the impact of family educational inputs on middle school students' academic achievement holds, with academic efficacy playing a partially mediating role

(4) Social support moderates the relationship between family educational input and middle school students' academic efficacy

8. Recommendations and Implications

8.1 Parents Need to Focus on Giving More Educational Input to Middle School Students

With the development of the times, families are investing more and more in the economy of students, but not necessarily get the expected results, parents' time investment, energy investment, economic investment and other aspects of parallel to junior high school students to improve their academic performance is more beneficial. Mainly through the following aspects: First, the investment of time, parents and children to discuss the development of learning plans, clear daily learning tasks and goals, to help children develop good learning habits and time management skills, in order to efficiently complete the learning task. Second, the input of resources, according to the different subjects of the child, parents can provide children with appropriate learning materials, such as teaching aids, reference books, etc., so that children can have a deeper understanding of the subject knowledge, to reduce the burden of learning. Third, economic input, for families with better economic conditions, parents should pay attention to the creation of learning environment. Fourth, the input of attention, the child may be frustrated and disappointed because of learning setbacks, parents should pay close attention to the changes in the child's mood, timely exchange and communication, to provide emotional support and help, to enhance the child's confidence, so that he or she will be more active and confident in learning.

8.2 Increase Levels of Academic Efficacy to Help Improve Student Achievement

Academic efficacy is an important learning quality of students. Data analysis found that academic efficacy not only positively predicts junior high school students' academic performance, but also plays a positive mediating role between family education input and academic performance, so attention should be paid to the cultivation of junior high school students' academic efficacy: First, cultivate regular and disciplined study habits so that children can build up good self-management skills, have extensive and receptive exposure to knowledge, and learn more easily and effectively. Secondly, we should carry out the education of "promoting growth", give timely positive feedback and incentives, recognize children's efforts and progress, and enhance their confidence and motivation in learning. Thirdly, children should be encouraged to think about and study the problems they encounter in their studies, and to find innovative solutions, so as to continuously expand their abilities and improve their learning efficiency. Fourth, parents should educate their children to maintain a positive, optimistic and upwardly mobile mindset, and assist them in developing a favorable and confident attitude, thereby continuously promoting students' success and development. Fifth, stress-adaptive programs should be provided for children. Middle school students may lose their motivation when facing learning pressure, and stress-adaptive strategies help them relax emotionally and psychologically, and contribute to the adjustment of a positive learning state.

8.3 Provide Multi-Dimensional Support to Leverage the Stacking Effect

Support, as a positive resource, can contribute to the development of junior high school students, while multi-faceted and multi-dimensional support will produce more significant results according to the stacking effect. First, parents should find appropriate resources and support for their children, e.g., selective extracurricular tutoring, community learning groups, and specialized resource banks and learning platforms. Secondly, children should be encouraged to actively participate in community activities, such as volunteer services, sports and other cultural activities, so that they can have more opportunities to make new friends, enhance the spirit of cooperation with each other, and cultivate their interest and enthusiasm in learning knowledge. Thirdly, the role of technical support should be given full play. Technology is gradually becoming an important means of learning, and students themselves should make use of the various technologies provided by the Internet to give full play to the advantages of the means and improve the efficiency of learning. Fourthly,

parents should keep abreast of the times, study fully, design practical learning assessments, identify students' problems in a timely manner, and help them find feasible solutions, so as to improve students' academic performance.

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