Effect of Family Social Class on Junior Middle School Students' Academic Achievement: A Moderated Mediation Model

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Abstract. To explore the relationship between family social class and junior middle school students' academic achievement, a total of 1679 middle school students were surveyed by questionnaires. The results showed that (1) Family social class had a positive predictive effect on academic achievement (2) Intrinsic learning motivation played a partial mediating role in the relationship between family social class and academic achievement (3) Parental educational expectation moderates the mediating of intrinsic motivation. In other words, the influence of family social class on intrinsic motivation changed with the different of parental educational expectation.

Keywords: family social class; academic performance; intrinsic learning motivation; parental educational expectation

1 Introduction

The family investment theory (Coleman & James, 1988) puts forward that: higher-class families have rich resources, which can bring more economic support and social capital to their children, and thus their children are more likely to achieve success. However, due to the limitations of realistic conditions, families of lower class obtain relative less resources, which limits their probability of success. In addition, studies have found that not only in economic, but also in the educational investment the parents of upper-class families are relatively higher, and have access to better educational resources, which is of great help to improve the academic performance of their children. Families of higher class tend to put more diversified investment in children's education, and pay more attention to the cultivation of children's interest in learning (Robbins et al., 2004). Thus, children from upper-class families are more intrinsically motivated to learn.

According to self-determination theory, the motivation can be divided into intrinsic motivation and external motivation. Intrinsic motivation can better stimulate individual's interest in learning and improve their academic performance (Deci & Ryan, 2000). Self-determination theory also suggests that intrinsic motivation and extrinsic motivation are not opposite, but can be transformed into each other. The key to the

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transformation lies in autonomous support. Autonomous support environment can meet the needs of students better, and to promote the transition of intrinsic motivation (Deci & Ryan, 2000; Taylor, Ntoumanis, & Smith, 2009). Among family factors, parents' educational expectation is an important source of autonomous support for children. Parental educational expectation refers to the expectation and judgment of parents on their children's academic achievements and performances. The higher parents' educational expectations, the more social support and emotional feedback they give to their children, and the higher their participation in educational activities. It can be inferred that under high levels of parental educational expectations, lower class children can also develop higher intrinsic motivation, which leads to improved academic performance. To explore the relationship among family social class, academic achievement, and learning motivation of Chinese junior middle school students will help us understand the motivational processes in terms of academic outcomes and the cultural contexts in China.

We propose the following hypotheses: family social class significantly affect students' academic performance (H1); Parental educational expectation has a moderating effect on the relationship (H2). The moderating effect is realized through the mediating effect of children's intrinsic learning motivation (H3).

2 Method

2.1 Subjects

In this study, the seventh to ninth grade students in several middle schools in Hubei Province, Henan Province, Guangdong Province, and Shanxi Province were selected to conduct a questionnaire survey. A total of 1700 students were collected, and 1679 valid questionnaires were obtained, with an effective rate of 98.76%.

2.2 Measurements

2.2.1 Subjective social class measurement.

Referring to the research of Kraus et al. (2012), the MacArthur scale of subjective socioeconomic status was used for measurement purposes. The scale is a ladder graph with ten levels, and subjects are required to comprehensively evaluate the status of their family based on its specific situation, including parents' occupational status, education level and income. The lowest rung of the ladder is 1, and the highest is 10. The higher the ladder is, the higher is the subjective social class. The scale has been used in many studies, and the retest reliability was 0.670 (Chen, Guo, & Hu, 2015).

2.2.2 Academic achievement.

The research found that objective academic achievement is closely related to subjective evaluation achievement. Therefore, the subjective reporting method of subjects can provide effective information (Crockett et al., 1987). The study used the self-assessment of academic achievement questionnaire. Students were asked to evaluate their

academic performance in English, mathematics and Chinese according to the actual situation. A 5-point Likert scale was used in this questionnaire (1 is very bad, 5 is very good), and the student's academic achievement is expressed as the average standardized score of the three subjects. The Cronbach's α coefficient of the questionnaire is 0.679.

2.2.3 Intrinsic learning motivation.

The Learning Motivation scale compiled by Yu (1994) was used, including two dimensions of intrinsic and extrinsic motivation, which had a total of 13 questions. The scale uses a 5-point score. We used the sum of score of the intrinsic motivation subscale. The higher the score, the stronger the intrinsic motivation of the subjects.

2.2.4 Parental educational expectations.

The Parents' Educational Expectation Scale includes two dimensions of academic performance and academic achievement, with a total of 9 items. The reliability coefficient of the scale was 0.85. Using a 6-point scale (" 1 "means" no expectation at all "and" 6 "means" very strong expectation "), the higher the score, the stronger the perceived parental educational expectation.

2.3 Data analysis

The data were standardized, and SPSS 17.0 software was used for common method deviation test, descriptive statistical and correlation analysis. The bootstrap method was used to analyze the test of mediating and moderating effect.

3 Results

3.1 Common method deviation test

There may be common method bias in the self-reporting method in this study. Thus, analysis was conducted according to Harman single-factor model test. The results showed that there were 4 common factors with eigenvalues greater than 1, and the variance explained by the first factor was 26.942%, which was lower than the critical value of 40%. Therefore, there was no obvious common bias in the study.

The results of descriptive statistics and correlation analysis are shown in Table 1.

Table 1. Descriptive statistics and correlation analysis (n=1679)

	M	SD	1	2	3	4
1 Family social class	5.39	1.88	1			
2 Academic achievement	2.74	0.87	0.18**	1		
3 Intrinsic motivation	19.89	4.18	0.06**	0.23**	1	
4 Parental educational expectation	41.43	8.29	0.08**	0.14**	0.24**	1

3.2 Moderated mediating effect analysis

All variables were standardized and the SPSS macro program PROCESS compiled by Hayes (2019) was used to conduct the moderated mediation effect test under the condition of controlling gender and age. The results are shown in Table 1.

According to the test steps proposed by Wen et al (2006), the first step was to test whether the direct effect of family social class on middle school students' academic performance was moderated by parents' educational expectations. Using Model 1 in the PROCESS, Equation 1 showed that family social class had a significant predictive effect on the academic performance of middle school students ($\beta = 0.17$, $P < 0.01$).

In the second step, according to the hypothesis, Model 7 in the PROCESS was selected. The test results of Equation 2 showed that family social class had a significant predictive effect on intrinsic motivation ($\beta = 0.04$, $P < 0.05$), and the interaction between family social class and parents' educational expectation had a significant predictive effect on intrinsic motivation ($\beta = 0.06$, $P < 0.05$). The results of Equation 3 showed that family social class also had a significant predictive effect on academic performance ($\beta = 0.17$, $P < 0.01$). Intrinsic motivation also had a significant predictive effect on academic performance ($\beta = 0.22$, $P < 0.01$).

Table 2. Moderated mediating effect analysis (n=1679)

Predictive Variables	Equation 1 (Dependent variable: academic performance)			Equation 2 (Dependent variable: Intrinsic motivation)			Equation 3 (Dependent variable: academic performance)		
	β	SE	95%CI	β	SE	95%CI	β	SE	95%CI
Family social class	0.17*	0.03	[0.12,0.22]	0.04*	0.02	[0.00,0.09]	0.17**	0.03	[0.11,0.22]
Parental educational expectation	0.12*	0.03	[0.12,0.22]	0.24**	0.03	[0.18,0.29]			
Family social class × Parental educational expectation	0.01	0.03	[-0.04,0.07]	0.06*	0.03	[0.01,0.11]			
Intrinsic motivation							0.22**	0.02	[0.17,0.27]
Gender	0.00	0.03	[-0.06,0.05]	-0.06*	0.02	[-0.10, -0.02]	0.01	0.03	[-0.05,0.07]
Age	0.07	0.05	[-0.03,0.16]	0.08	0.04	[-0.01,0.17]	0.05	0.05	[-0.04,0.15]
R^2	0.05			0.06			0.08		
F	22.48**			28.19**			67.49**		

Note: The 95% confidence interval does not contain the value of 0, indicating that the coefficient was significant.
**p<0.01, *p<0.05.

In order to show the moderating effect of parental educational expectation more clearly and intuitively, the simple slope analysis was used for further analysis (see Figure 1). The participants were divided into high and low group according to the score of parental educational expectations higher or lower than the average. Then the predictive effect of family social class on intrinsic motivation was investigated in these two groups. When parents had high expectations, family social class significantly and positively affected individual's learning motivation (B =0.32, t=9.56, P <0.001). When parents had low expectations, family social class also had a significant and positively predictive effect on individual learning motivation (B =2.22, t=4.88, P <0.01), but its effect was smaller. This indicated that with the increase of parental educational expectation level, the promoting effect of family social class on students' learning motivation was amplified.

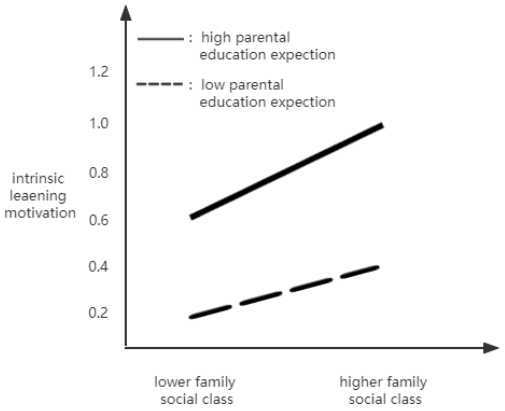

Fig. 1. Simple slope analysis

4 Discussions

Some scholars (Wu, Zhang, Cheng, & Wang, 2018) believe that although lower-class families are subject to various restrictions, these frustrating experiences will motivate lower-class students, and thus promote their study. However, many studies have showed that the children of upper-class families have better academic performance. In contrast, lower-class families tend to limit the improvement of their children's academic performance because of external constraints (Ludger, 2005). This study found that family social class can positively predict the academic performance of middle school students, which is consistent with most of previous studies. It also supports the viewpoint of family investment theory and the researches of social class theory.

The mediating model showed that intrinsic motivation played a significant mediating role in the influence of family social class on the academic performance of middle school students. It is assumed that lower-class families have relatively fewer resources and need to consider material costs to reduce external threats, which is not conducive

to improving children's intrinsic motivation. As mentioned above, the pursuit of internal goals can improve individual happiness and adaptability. Pursuing external goals, on the other hand, is more likely to reduce happiness and is associated with poor adaptability, which is detrimental to academic performance. A study supported that intrinsic motivation can stimulate students' interest in learning and desire to improve their ability, and thus better improve learning engagement (Chen, Guo, & Hu, 2015).

The results also showed that with the increase of parental educational expectation, the promoting effect of family social class on students' intrinsic learning motivation was amplified. We speculate that parental educational expectation varies according to the social class of a family. According to family stress theory (Yoder & Dan, 2005), family economic pressure is directly proportional to parents' psychological pressure, and excessive economic pressure will lead parents to adopt bad parenting styles, such as preaching, reducing positive feedback (Masarik & Conger, 2017), and emphasizing the purpose of learning is to improve one's income and change one's life. This type of parenting tends to encourage extrinsic rather than intrinsic motivations. Therefore, it is not conducive to the development of children's achievements. Higher class parents have higher education level and are more likely to increase the diversity of educational engagement. Therefore, higher educational expectations of parents promote the intrinsic learning motivation of children, thus improving their academic performance.

5 Conclusion

This study illustrated that the influence of family social class on intrinsic motivation changed with the different of parental educational expectation. This study will help parents and teachers to understand students' learning problems and cultivate their intrinsic learning motivation. Continued research should better clarify how family social class influence students' learning process. Longitudinal studies and qualitative studies could be used to provide a broader perspective.

References

1. Chen, J.W., Guo, Y.Y., & Hu, X.Y. (2015). Effect of Autonomous Motivation and Family's Social Class on the Relationship between Teacher's Autonomy Support and Junior Middle School Student's Academic Engagement. Psychological Development and Education, (02), 180-187.
2. Coleman, & James. (1988). Social capital in the creation of human capital. American Journal of Sociology. 94, 95-120.
3. Crockett, L. J., Schulenberg, J. E., & Petersen, A. C. (1987). Congruence between objective and self-report data in a sample of young adolescents. Journal of Adolescent Research, 2(4), 383-392.
4. Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. Psychological Inquiry, 11(4), 227-268.
5. Hayes A F., & Rockwood N J. (2019). Conditional Process Analysis: Concepts, Computation, and Advances in the Modeling of the Contingencies of Mechanisms. American Behavioral Scientist. 64(1): 19-54.

6. Kraus, M. W., & Stephens, N. M. (2012). A road map for an emerging psychology of social class. Social & Personality Psychology Compass, 6(9), 642-656.
7. Ludger Wößmann. (2005). Educational Production in East Asia: The Impact of Family Background and Schooling Policies on Student Performance. German Economic Review. (6). 331-353.
8. 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.
9. Robbins, S. B., Lauver, K., Le, H., Davis, D., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? a meta-analysis. Psychological Bulletin, 130(2), 261-288.
10. Taylor, I. M., Ntoumanis, N., & Smith, B. (2009). The social context as a determinant of teacher motivational strategies in physical education. Psychology of Sport & Exercise, 10(2), 235-243.
11. Wen Z, Zhang L., & Hau KT. (2006). Mediated Moderator and Moderated Mediator. Acta Psychologica Sinica, 38(3), 448-452.
12. Wu Lili, Zhang Dajun, Cheng Gang, & Wang Xinqiang. (2018). The Effect of Family Socioeconomic Status on Children's Academic Achievements: The Mediated Role of General Psychological Suzhi. Journal of Southwest University (Natural Science). 40(6), 56-62.
13. Yoder, K. A., & Dan, R. H. (2005). Family economic pressure and adolescent suicidal ideation: application of the family stress model. Suicide and Life-Threatening Behavior, 35(3), 251-264.
14. Yu A. (1994). Is social achievement motivation different from individual achievement motivation? To explore the relationship between motivation and behavior. Collection of the Institute of Ethnology, Academia Sinica. 76, 197-224.