

A review of the influence of family environment on adolescents' academic achievement performance

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ABSTRACT

Under the dual promotion of the "Double Reduction" policy (2021) and the Family Education Promotion Law (2022), the family has been pushed from the traditional role of "education facilitator" to the central position of "main position of growth". "The influence of the family environment on adolescent development has increasingly become a key topic in educational research. As the main place for adolescents to study and live, the influence of the family on adolescents should not be ignored. Starting from the perspective of the influence of the family environment on adolescents' academic achievement performance, we systematically explored the influence of the type of family structure, family economic status, family atmosphere, family function, family upbringing style and the interactions among the dimensions on adolescents' academic achievement performance. It aims to reveal the mechanism of family influence on adolescents' academic performance, to provide ideas for the effective improvement of adolescents' academic performance, and to provide theoretical support for the research on the promotion of adolescents' academic performance.

KEYWORDS

family environment; academic achievement performance; research review

1 Introduction

Under the dual impetus of the "Double Reduction" policy (2021) and the Family Education Promotion Act (2022), China's basic education is undergoing a profound transformation from "score competition" to "whole-person development". China's basic education is undergoing a profound transformation from "score competition" to "whole-person development". The Ministry of Education's 2023 monitoring data show that the participation rate in subject-based training at the compulsory education stage has dropped by 92%, and the average daily homework tutoring time for parents has shrunk to 0.7 hours, but the blurring of the boundaries between the responsibilities of home and school has led to 46.3% of families being caught up in the "anxiety of an educational vacuum". The shift in policy orientation has pushed the family from the traditional role of "education facilitator" to the central position of "growth center", and the influence of the family environment on adolescent development has increasingly become a key issue in educational research. Based on this, this study aims to integrate the multidimensional effects of the family environment (including structure, economy, atmosphere, function and parenting style) and the interactions among the dimensions through a systematic review, breaking through the limitations of fragmented research, providing a theoretical basis for the collaborative education of families, schools, and communities, and proposing a practical strategy for optimizing the family environment and alleviating educational anxiety.

2 Influence of basic family circumstances on adolescents' academic achievement

2.1 Types of family structures

Family structure involves the composition of family members and the ways in which they interact with each other and their influences, forming a relatively fixed pattern of ties. Family structure is usually categorized on the basis of the number of generations and the characteristics of kinship relationships, and includes a variety of types such as nuclear, single-parent, mainline, reorganized, and special families. Each type of family structure can have different effects on children's social-emotional development.

(1) The nuclear family

The nuclear family is a family structure consisting of parents and their unmarried children, characterized by simple member relationships, concentrated resources, and frequent interactions.^[1]Compared with multigenerational main families or single-parent families, nuclear families occupy a mainstream position in contemporary society, and are especially prevalent in the process of urbanization. Its core characteristics include smaller family size and simple family relationships. Currently, relevant studies have not refined the impact of nuclear families on adolescents' academic

achievement performance, but some inferences can be made from the impact of family structure on academic achievement. Zhang Qian's research found that family structure significantly affects adolescents' academic achievement,^[2] and family structure is closely related to adolescents' academic achievement. Further studies showed that family environment was positively related to students' academic achievement, and there was no significant difference between boys' and girls' academic achievement and family environment.^[3] Moreover, nuclear families are usually able to provide more concentrated resources and attention to their children, and both parents can participate in their children's education process together, which helps to cultivate their children's independent learning ability and good learning habits, and thus affects adolescents' academic achievement.

(2) Single-parent families

With the diversification of family and social structures, the rate of single-parent families caused by accidental death, divorce and unmarried pregnancy has been increasing year by year. Relevant statistics from the Ministry of Civil Affairs show that from 2003 to 2020, China's divorce rate rose for 17 consecutive years, from 1.1 per 1,000 to 3.2 per 1,000, and the absolute number of single-parent families formed as a result of divorce continued to grow at a high rate. Single-parent family refers to a family structure consisting of one father or mother with unmarried children. The survey and analysis found that junior high school students in single-parent families have obvious problems in areas such as academic performance.^[4] The reasons affecting the intellectual development of children from single-parent families include (1) poor development of some family environments due to the imbalance of the family structure, and (2) crippled parental roles and a single way of education. The results of Lei Yujie's survey show that if children live in single-parent families since childhood, and fail to fully obtain the emotional comfort and support of both parents, that is, the lack of suitable growth and education environment, their moral, intellectual and intellectual development will be limited,^[5] unfavorable to the overall development of the students. These students often show a lack of self-confidence, insufficient motivation, low interest in learning and other characteristics, which in turn affects their academic achievements. However, in some special cases, single-parent families have a positive impact on adolescents' academic achievement performance. The adolescents' own sense of responsibility drives their academic motivation. For example, some adolescents from single-parent families take the initiative to improve their academic performance because they understand their parents' hard work; the proportion of adolescents who organize their study time independently is higher than that of two-parent families, and their time-management ability has increased significantly.

(3) Main family

The main family, i.e. a multi-generational family structure, usually includes parents, grandparents and children. This type of family usually integrates the economic resources of both generations to provide youth with superior educational conditions, such as extracurricular tutoring and learning equipment. Particularly in less economically developed areas, grandparents' involvement in household chores or caring for grandchildren can relieve family pressure so that parents have more time to pay attention to their children's studies, thus indirectly promoting academic engagement. Some scholars have found that children can experience the thoughts and feelings of many roles in the family, and if grandparents are well educated, they may pass on learning habits, values or knowledge (e.g., language, traditional culture) through their words and example, thus forming a "hidden educational resource". However, some scholars have found that the form of the main family has no effect on children's academic performance.^[6] Even multigenerational families are prone to complex power relationships, such as mother-in-law and daughter-in-law conflicts, and the frequent occurrence of such family conflicts can lead to a significant decline in academic performance.

(4) Reorganization of the family

A reconstituted family is a new family formed by both or one of the spouses after the end of a previous marriage (e.g., divorce, widowhood), which may include children from the previous relationship. Reorganized families cause changes in the original family structure and environment. Children in such an environment have a severely diminished sense of identification with their parents, and tend to resist excessive contact with them, not to mention being unwilling to listen to their parents, thus leading to a decline in the educational function of the family.^[7] A 2022 survey by the Chinese Society for Family Education found that when the difference in educational philosophy between stepparents and biological parents exceeded two standard deviations, adolescents' motivation to learn declined by 37%. Foreign scholars also found that children from restructured families tended to score lower in academic achievement.^[8] The results of a study by Ding Congming et al. at Chongqing University showed that the educational level of children from restructured families was reduced by 12.18% to 15.5% compared to intact families, and that higher levels of parental education could slow down this difference, but not eliminate it completely.^[9] However, a study by Prof. Zhang Chunni of Peking University found that the difference in education between children from restructured and intact families in China is much lower than people think.^[10] This suggests that the educational problems of children from reorganized families may differ in different regions. The impact of restructured families on academic achievement presents dynamic and differentiated characteristics, which is essentially a game of resource reallocation and adaptive efficacy in the process of family ecosystem restructuring.

(5) Special structures

There is also a special category of family structure, mainly including families with left-behind children and intergenerational parenting families, in which families face the dual challenges of educational resources and emotional support. 2021 The China Education Tracking Survey found that in left-behind families, parents' absence from the home has led to a decrease in family investment in education: the average annual expenditure on extracurricular tutoring for left-behind junior high school students in rural areas is only 43 percent of that of non-left-behind families, making the problem of the difficulty in improving children's academic performance due to the severe resource constraints even more pronounced. This makes it even more obvious that children's academic performance is difficult to improve due to the serious shortage of resources. The lack of parent-child communication and academic supervision in left-behind families caused by parents going out to work further exacerbates the lack of educational resources. Wang Feng found that intergenerational assisted parenting negatively affects children's academic performance by reducing the extent to which parents care about their children's education and the extent to which parents actively communicate with their children.^[11] However, some studies have found that grandparents' involvement in intergenerational parenting has a positive impact on children's academic performance. Pong and Chen's survey of intergenerational parenting families found that children who had lived with two generations of grandparents for a long period of time had higher academic performance.^[12] Xia Weiju's investigation found that there are individual rural intergenerational left-behind families, because the grandparents themselves have superior knowledge and can give good help in children's learning, so the children's academic performance has obvious progress.^[13]

2.2 Family economic situation

Analysis based on the China Education Tracking Survey (CEPS) 2019-2023 three-period tracking data found that family economic status affects academic achievement through the triple mediating path of educational investment, cultural capital, and psychological stress, and there is significant urban-rural heterogeneity. Family investment theory suggests that parents of students with better family economic status tend to have more resources and willingness to invest in education, as well as more time to spend with their children and participate in their children's academic activities, and more appropriate parenting styles, etc., and also implies that students have more cultural capital. And some studies have shown that family cultural capital and academic achievement show a positive linear correlation, i.e. the more family cultural capital a teenager possesses, the more academic achievement he or she achieves.^[14] Yang Yang found that the higher the socio-economic status and the richer the cultural capital of the family, the more parents are able to transform their own economic and educational advantages into the advantages of their offspring, and help students to achieve better academic achievements.^[15] The level of adolescents' academic achievement rises with the socio-economic status of the family they live in and the family's cultural capital that they possess. There is a large gap in family capital between urban and rural areas. According to Jiang Guohe and Yan Guangfen, there is a significant gap between the academic achievement of children from urban and rural families, because children from urban families receive more and better support from family economic, cultural and social capital, while children from rural families are in a relatively disadvantaged position.^[16] Some other studies have shown that among the middle class, family economic inputs do not have a significant effect on academic achievement, while the partial variables of family cultural inputs and the partial variables of family social inputs have a significant effect on academic achievement.^[17]

2.3 Family atmosphere

Family atmosphere: family atmosphere is the psycho-emotional state and environmental atmosphere between parents and children, which is a potential educational factor of the family^[18]. Family members' moral concepts, values, aesthetic interests, and different parenting styles will bring about the corresponding family atmosphere (Xu Yan). According to Molloy & Pallant, family atmosphere refers to the interpersonal interaction patterns of family members in the family, covering parent-child, husband-wife, and other family relationships.^[19] Some scholars believe that parents' parenting style and parent-child relationship influence the family atmosphere, which in turn has an important impact on children's academic performance. A good family cultural atmosphere is inseparable from parents' democratic parenting style and harmonious parent-child relationship, which plays an important role in cultivating culturally educated next generation. Numerous studies have shown that parenting styles play a key role in influencing the family atmosphere. Positive parenting styles, such as democracy, tolerance, appreciation and encouragement, help to enhance students' enthusiasm for learning, increase engagement in learning, and improve academic performance; on the contrary, negative parenting styles, such as blaming, authoritarianism, strictness and over-intervention, often tend to stimulate negative emotions, cause learning fatigue, and generate negative feelings, which may lead to poor academic performance. Thus, the type of family climate and interaction patterns play an important role in academic achievement performance.

2.4 Family functions

Family functioning refers to the ability of the family as a basic unit to deal with the emotional, communicative, cognitive and developmental aspects of its members and its effectiveness in coping with external events. The better the family functioning, the more favorable it is to the development of interpersonal relationships, physical and mental health, and learning motivation of family members. In recent years, scholars both at home and abroad have paid much attention to learning input, and research on the influence of family functioning on learning input has been increasing, and many studies have shown that there is a significant correlation between learning input and academic performance. For example, Qi Wenhui studied the relationship between family functioning and learning input of rural junior high school students, and showed that the better the family functioning, the higher the level of academic self-efficacy and learning input of rural junior high school students, which in turn had a positive effect on their academic achievement.^[20] Wang Xueying also believes that the better the family functioning, the higher the students' commitment to learning.^[21] In addition, family functioning can also indirectly affect academic achievement through the separate mediation of self-evaluation and the chain mediation of self-evaluation-learning motivation.^[22] In conclusion, family functioning and family support are positively related to adolescents' learning and academic achievement.

2.5 Family upbringing

Family parenting style refers to the attitudes and emotional climate that parents transmit to children through their parenting behavior, and usually consists of parenting beliefs, goals, styles, and practices.^[23] Family systems theory, developed by Salvador Minuchin in 1974, emphasizes that the family is a dynamic whole in which family members do not exist independently of each other, but rather construct an interdependent network system through constant interaction. Different parenting styles developed in the family can have different effects on students' academic achievement. According to the research of American psychologist Diana Baumrind, family upbringing styles are mainly divided into four types: authoritative, authoritarian, indulgent, and neglectful, which have an important impact on children's psychological development and behavioral habits. And some scholars have shown that compared with authoritarian type, authoritative parenting style will have a positive impact on secondary school students' academic performance, while indulgent and neglectful parenting style will have a negative impact on academic performance.^[24]

Some scholars have also added mediating variables to analyze the correlation between the two from the dimension of indirect influence. Wang Bin found that in family upbringing styles, there was a significant positive correlation between parents' emotional warmth, understanding and self-control, and academic achievement, and junior high school students' self-control was in turn significantly positively correlated with academic achievement.^[25] Haixu Zhao found that family parenting styles can both directly affect middle school students' academic achievement and positively affect middle school students' academic achievement through the mediating role of mental toughness.^[26] Li Lantern's study showed that subjective well-being and achievement motivation play a certain mediating effect between family parenting styles and academic achievement, which positively affects students' academic achievement.^[27]

3 Interaction between dimensions

The dimensions do not work in isolation; they interact with each other to have a significant impact on adolescents' academic achievement performance. The type of family structure and family functioning show a certain interaction. In nuclear families, the improvement of family functioning can further promote the interaction and support among family members, providing a stable and favorable environment for adolescents' academic development. For single-parent families, despite certain structural deficiencies, the strengthening of family functioning, such as close cooperation and mutual support among family members, can compensate for this deficiency to a certain extent, and provide adolescents with the necessary emotional support and academic assistance. At the same time, there is also mutual influence between family atmosphere and family parenting style. In a harmonious family atmosphere, parents are more inclined to adopt positive parenting styles, such as encouragement, guidance and support, which can help to cultivate adolescents' self-confidence and academic motivation. On the contrary, in a tense or conflictual family atmosphere, parents may be more inclined to adopt negative parenting styles, such as punishment, criticism, or neglect, which can have a negative impact on adolescents' academic achievement. In addition, family parenting styles are closely related to the cultural background of the family. In higher-education families, parents tend to have richer educational resources and philosophies, and are more inclined to adopt authoritative parenting styles, focusing on cultivating adolescents' independent learning ability and critical thinking. In low-education families, on the other hand, parents may be more lacking in educational resources and philosophies, and are more inclined to adopt permissive or spoiled parenting styles, which, to a certain extent, limits the academic development of adolescents. Therefore, differences in family cultural background may also have an impact on the choice of family parenting styles, which in turn may have different impacts on adolescents' academic

achievements. It is worth noting that family economic status, as another important dimension, also interacts with other dimensions. Families with better family economic conditions tend to provide adolescents with more learning resources and opportunities, such as attending tutorial classes and purchasing learning materials, which helps to enhance their academic achievement. At the same time, better economic conditions may also create a more relaxed and harmonious atmosphere in the family, so that parents have more patience and energy to pay attention to adolescents' learning and growth. However, family financial status is not the decisive factor. Even in families with limited financial resources, an environment conducive to the academic development of adolescents can be created by optimizing family functions, creating a positive family atmosphere and adopting appropriate parenting styles.

To summarize, the interactions among the dimensions of family environment are complex and far-reaching, and together they affect adolescents' academic achievement performance. Therefore, when exploring the influence of family environment on adolescents' academic achievement, all dimensions and their interactions should be considered comprehensively in order to reveal more accurately the mechanism of family environment's influence on adolescents' academic achievement.

4 Conclusion

The present study systematically comprehends the influence mechanism of various dimensions of the family environment on adolescents' academic achievement and their interaction, reveals the complex logic of the family environment from the influence of a single factor to the interaction of a multidimensional system, and provides a three-dimensional explanatory framework for understanding the reconstruction of the family's nurturing function in the context of the "double-decrease" policy. By analyzing the dimensions of family structure type, family economic status, family atmosphere, family function, and family parenting style, it is concluded that the role of family environment on adolescents' academic achievement is not determined by a single factor, but is a comprehensive manifestation of multidimensionality and multilevel. With the continuous progress of society and the evolution of family structure, the influence of family environment on adolescents' academic achievement will present new features and trends, in which educational synergy will play an important role, and the synergistic effect of family, school and society should be emphasized to jointly create a good environment and conditions for adolescents' healthy growth and comprehensive development. However, although the family environment has an important impact on adolescents' academic achievement, we should also recognize that the existence of individual differences makes different adolescents react and adapt to the family environment differently. Therefore, while focusing on the optimization of the family environment, we should also pay attention to the individual differences of adolescents, and promote their all-round development by teaching them according to their abilities.

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