Original Paper

Strategies for Improving the Academic Achievement of Rural Primary School Students from the Perspective of Home-School Collaboration: The Influence of Parents' Positive Parenting Styles and Teacher Support

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Abstract

This paper aims to explore the impact of parents' positive parenting styles and teacher support on the academic achievement of rural primary school students, and study the mediating role of teacher support in it, in order to put forward practical suggestions and promote the academic development of rural primary school students. The research selected a rural primary school in Fujian Province, China to conduct a questionnaire survey and analyzed the impact of parents' positive parenting styles and teacher support on academic achievement. The results show that parents' positive parenting styles have a significant positive impact on teacher support and academic achievement, and teacher support also has a significant positive effect on improving academic achievement. The research found that parents' warm care and rescue-providing parenting styles can significantly improve students' academic performance, especially in the process of students' learning. In addition, teacher support also plays an indispensable role in this process. In particular, the reliability of teachers has become a relatively key factor for students to achieve academic success. More importantly, teacher support plays an important mediating role between parents' positive parenting styles and academic achievement. This means that parents' positive parenting styles not only directly affect students' academic achievement, but also indirectly affect this result through teacher support.

Keywords

home-school collaboration, rural education, parents' positive parenting styles, teacher support, academic achievement

1. Introduction

Problems in rural education abound. From a geographical perspective, in rural areas, especially in remote mountainous areas, due to geographical limitations, the distribution of educational resources is extremely uneven. Schools in these areas often find it difficult to attract and retain excellent teachers. At the same time, students have relatively fewer opportunities to obtain high-quality education. In Zhang's (2013) research report, it is shown that teachers over 45 years old account for more than 70% of the total number in schools. 90% of the teachers in the school only teach Chinese, mathematics, and English subjects, and there are very few teachers teaching other subjects. In terms of resources, rural schools generally face problems such as insufficient hardware facilities, lack of teaching materials and library resources, and lack of scientific and technological and experimental equipment. The lack of these resources directly affects teaching quality and students' learning effects, and limits students' opportunities to receive modern education. At the policy implementation level, although the government has implemented a series of policies to support rural education, there is still a slight gap between policy implementation and the current educational situation. Secondly, cultural factors also play an important role in rural education. Many rural parents have a slightly lower educational level than urban parents and lack scientific educational methods and concepts. Coupled with the widespread phenomenon of left-behind children caused by going out to work, children grow up in an environment lacking family affection and correct guidance. This not only affects their academic performance but also has an adverse impact on their mental health and character formation. Reports show that the number of left-behind children in rural areas of my country is nearly 30 million. Among them, 87.4% of children are taken care of by grandparents and other intergenerational relatives, 12.3% are taken care of by relatives and friends, and some children even live on their own without anyone taking care of them. As a result, the dropout rate of rural poor students in some remote mountainous areas is as high as 30.4% (Zhang, 2013).

The challenges facing rural education are multifaceted and interrelated. The accumulation of these challenges ultimately leads to the phenomenon of difficulties in academics for rural primary school students. Wang (2022) conducted an investigation and analysis on the academic achievements of 108 rural primary schools in Wenzhou City, Zhejiang Province. The results showed that the excellent level of rural primary schools was significantly lower than the city's average level. Specifically, the scores of rural primary school students' accumulation and application ability were 8.8% lower than the city's average, the scores of high-level ability were 9% lower than the city's average, and the reading ability score rate was 8.7% lower than the city's average. Gao (2023) showed in a survey of 488 children in three rural primary schools in eastern Guangdong that only 14.62% of children with high academic performance accounted for, while 40.62% of children had low academic performance. These data reveal the overall deficiency in learning ability of rural primary school students. This deficiency is not accidental. Due to the limitation of resources and the restriction of the teaching environment, in rural primary schools with scarce resources, students lack sufficient learning materials and advanced

teaching equipment, which directly affects their learning effects. At the same time, the restriction of the teaching environment cannot be ignored. Due to the weak teaching staff and backward teaching methods, rural primary school students cannot enjoy high-quality educational resources, which undoubtedly increases the difficulty of improving their academic achievements. Secondly, the cultivation of learning habits has become a major obstacle to improving the academic achievements of rural primary school students. Zhou (2018) and others conducted a survey of 252 students in rural primary schools in Songhua River, Heilongjiang Province. The results showed that 84% of students did not have the habit of previewing before class, 50% of students had poor classroom learning habits, and 70% of students did not have the habit of reviewing after class. These bad learning habits further limit the improvement of rural primary school students' academic achievements, so that the academic achievement of rural primary school students is generally weaker than that of urban students.

As an important part of education, family education has an important impact on children's academic growth and personality growth. In recent years, as society's understanding of the importance of education continues to deepen, family education has gradually received more extensive attention. Parents' parenting behaviors, emotional attitudes, etc. have an impact on all aspects of their children, including their children's academic achievements (Areepattamannil, 2010). After educational psychologists began to focus on exploring the role of parents' parenting styles on their children's academic achievements, many researchers explored this research field. Khan (2022) pointed out that in rural communities, most rural parents go out to work and leave the heavy responsibility of raising their children to grandparents and other intergenerational relatives. Students who lack the company and care of their parents are often prone to emotional development disorders and mental health problems, and their academic performance in school is prone to negative effects. Students who grow up in families with positive parenting styles can obtain emotional warmth and encouragement and support from their parents, feel more family support, and maintain a more positive learning state, and have stronger initiative and self-confidence in learning. That is, the increase in parents' support and attention to their children will prompt their children to increase their learning investment level relatively and thereby enhance their academic achievements (Borak, 2016). It can be seen that as children's first teachers, parents' parenting styles reflect their attitudes and values of being responsible for their children, and they need to adopt positive and reasonable parenting styles to promote the development and progress of their children's academic achievements.

In addition, parents' positive parenting styles also have a significant impact on teacher support (Heryanti, 2023). In a positive family environment, parents' high level of participation and encouragement can help children form a positive self-image and good social skills, enabling them to interact more effectively with teachers at school. This way not only helps promote children's behavioral and psychological development but also plays an important role in enhancing teacher-student relationships and obtaining teacher support (Ge, 2024). Similarly, Ansong (2017) believes that when parents give encouragement and expectations to their children's learning achievements, it will improve

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their children's academic enthusiasm and self-efficacy and guide them to seek help from teachers more actively and confidently at school. This positive and proactive attitude often receives more attention and support from teachers. And in the collaborative model of family and school where parents and teachers communicate and cooperate well to jointly promote students' learning and growth, while teachers feel the support and respect of parents, they will be further inspired and pay more attention to and support students' academic development. That is, when teachers understand that family education and school efforts complement each other, they will gain greater educational motivation, and their students will obtain greater teacher support. In general, parents' positive parenting styles can not only cultivate children's learning skills and attitudes but also help optimize teacher-student interaction and make teachers more willing to provide support. Therefore, a positive family environment has a profound impact on children's overall performance at school and their relationship with teachers.

In addition to family education, school education also plays a key role in students' academic progress. Among them, teacher support has a significant positive impact on students' academic achievement (Adena & James, 2004). Multiple studies have shown that the teacher support perceived by students directly predicts their academic performance. Rophy's (1993) research shows that teachers' supportive behaviors directly affect students' academic grades. Although some studies have pointed out that the specific mechanism by which teacher support affects students' academic achievement is still unclear (Sakiz, 2012), the general consensus is that the teacher support felt by adolescents is crucial for their positive development. Rosenfeld, Richman, and Bowen's (2000) study found that students who receive more teacher support show better academic achievements than those who receive less support. Among parents, teachers, and peers, teacher support is the most significant for adolescents' academic achievements (Plunket, Henry, & Houltberg, 2008). Qian's (2003) study found that when students perceive higher supportive help from teachers, they can obtain encouragement from it, explore knowledge more actively and in-depth, and actively adjust learning methods, thereby achieving better grades and improving academic achievement. In addition, teacher support can also reduce the impact of unfavorable family factors on students' academic achievement (Luthar, Cicchetti, & Becker, 2000). In rural areas, they usually face problems such as insufficient number of teachers, limited teaching experience, or lack of educational resources. Facing such challenges, parents' active cooperation becomes a key factor in ensuring the quality of children's education. Therefore, parents can participate in their children's education process in various ways, such as actively communicating with teachers and understanding their children's learning situation at school so as to cooperate with teachers to strengthen supervision and promote the improvement of their children's academic achievement.

From the above analysis, it can be speculated that parents' positive parenting styles may indirectly affect students' academic achievements through teacher support. However, as an important mediator between parents' positive parenting styles and students' academic achievements, the role of teacher support is not only limited to direct teaching interactions, but also deeply affects multiple levels such as students' psychological states, learning strategies, and home-school interactions. Teachers' supportive

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behaviors, such as encouragement and appreciation, can enhance students' self-confidence and self-esteem. This positive psychological state prompts students to be more willing to accept parents' parenting styles and learning goals. When students feel that their abilities are recognized, they are more likely to set higher academic goals and thus strive to improve their grades (Sakiz, 2012). And teachers' emotional support is crucial for students' mental health. By listening to and understanding students' troubles, teachers can help students cope with academic pressure and reduce anxiety and depression, creating a psychological environment conducive to learning (Sun, 2020). Secondly, by providing effective learning strategies and skills, teachers can help students optimize learning methods and improve learning efficiency. These strategies may include time management, information integration, memory skills, etc. Through the application of these strategies, students can achieve better development at the cognitive level and then improve academic performance (Goodenow, 1993). In addition, effective communication between parents and teachers can promote home-school cooperation and enable parents to have a clearer understanding of their children's performance and needs at school. Such information flow is crucial for parents to adjust their parenting styles, enabling them to continue the school's educational philosophy at home and provide a consistent growth environment for their children (Zhe, 2019). It can be seen that teacher support plays an important bridging role between parents' positive parenting styles and students' academic achievements. Through such a link, students can obtain better quality learning resources and emotional support, forming a virtuous cycle that promotes the improvement of academic performance and thus comprehensively improving students' academic achievements.

In the current context of uneven distribution of educational resources and the relatively backward rural education environment, family and school, as two important places for the growth of primary school students, the impact of their collaborative cooperation on students' academic achievements cannot be ignored. The phenomenon of uneven distribution of educational resources is particularly evident in rural areas. The dual shortage of family education resources and school education resources makes rural primary school students face more challenges in academic development. However, at present, there is a relative lack of systematic research on the correlation between parents' positive parenting styles, teacher support and students' academic achievements. Therefore, this study aims to deeply explore, from the perspective of home-school collaboration, explain the impact of parents' positive parenting styles and teacher support on improving the academic achievements of rural primary school students and propose corresponding strategies for the progress and development of rural primary school students' academic achievements. For this purpose, this study puts forward the following research questions:

Research Question 1: Which components of parents' positive parenting styles and teacher support have a relatively high positive and significant effect on academic achievement?

Research Question 2: Will parents' parenting styles indirectly improve academic achievement through teacher support?

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Research Question 3: In what specific aspects can the academic achievements of rural primary school students be promoted from the perspective of home-school collaboration?

2. Theoretical Background

2.1 Positive Parenting Styles

Parents' positive parenting styles refer to the parenting methods by which parents shape a positive family education atmosphere through positive attitudes, behaviors and emotional expressions to promote the comprehensive and healthy growth of children (Talin, 2021). Baumrind (1966), recognized as the pioneer of research on parenting styles, proposed three parenting styles: authoritarian, authoritative and permissive to describe the differences in normal parenting behaviors. Later in his further research, he explained that authoritarian parents try to shape, control and evaluate children's behaviors according to a set of fixed standards; while permissive parents are more inclined to be enthusiastic and give children more autonomy rather than control; authoritative parenting style is between these two extremes. In the 1980s, Maccoby and Martin (1983) tried to combine Baumrind's typology with parenting dimensions. They defined four parenting styles according to the two dimensions of demandingness and responsiveness, namely authoritative with high demandingness and high responsiveness, authoritarian with high demandingness and low responsiveness, indulgent with low demandingness and high responsiveness, and neglectful with low demandingness and low responsiveness. Based on the research of Maccoby and Martin, Baumrind (1989) further expanded his typology and added a fourth parenting style, namely neglectful. In addition, Baumrind (1991) also deeply studied the relationship between parenting styles and child development. The research shows that children of authoritative parents usually have better development results; children of authoritarian and permissive parents are more likely to have negative development results; and neglected children often have the worst results. These associations have also been confirmed by other researchers, that is, authoritative parenting style has always been associated with positive developmental outcomes of adolescents, such as psychosocial competence and academic achievement. Therefore, the so-called positive or effective parenting is usually considered as authoritative parenting style, that is, parents' positive parenting style can be defined as parenting that is essentially authoritative or parenting that contains authoritative parenting characteristics (Palacios, 2022).

However, in different studies, researchers have different definitions of parents' positive parenting styles. Darling and Steinberg (1993) described parenting styles as a collection of various attitudes shown by parents in communicating with their children. These attitudes constitute a relatively stable parent-child interaction pattern and have a profound impact on children. On this basis, some scholars have proposed that parents' positive parenting styles are not limited to parents' attitudes, but also include the belief systems they transmit to their children. And they further distinguish between goal-oriented and non-goal-oriented parenting styles: the former refers to the necessary behaviors that parents take to fulfill their parenting responsibilities, while the latter more involves personalized parenting behaviors

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such as actions, postures and emotional expressions (Frances, 2003). Similarly, Prevatt (2003) emphasized the stability of positive parenting styles in the study and believed that it is closely related to parents' attitudes and beliefs. The research of Li and Willems (2019) highlighted the importance of parents being warm, supportive and understanding of their children, and believed that this is the core element of positive parenting styles. It can be seen that parents' positive parenting style can be defined as a stable parent-child interaction pattern. It not only contains the positive attitudes shown by parents in communication and the beliefs transmitted to children, but also is reflected in parents' goal-oriented behaviors and non-goal-oriented behaviors full of individuality and emotion. Among them, being warm, supportive and understanding of children is its key manifestation.

Looking at previous studies, different terms are used to describe the factor composition of positive parenting. For example, acceptance, enthusiasm, participation, sensitivity, responsiveness, being loving, empathetic, promoting social emotional and cognitive growth and instruction, etc. (Baumrind, 1989; Hart, 1998; MaccobyMartin, 1983). Summarizing the positive aspects of parenting children can be divided into three broad types, namely parental support or connection, behavioral regulation and respect for individuality (Barber & Olsen, 1997; Barber, Stolz, & Olsen, 2005; Hart, 1998). The characteristics of parental support or connection are positive, warm, sensitive, affectionate, predictable and supportive interactions between parents and children; behavioral regulation is a characteristic of authoritative parenting and involves how parents establish structure around children's behaviors, including setting limits, reasoning and applying consequences; and parental respect for individuality includes acknowledging children's development by avoiding intrusive, exploitative and manipulative parenting behaviors (Barber, 2005). Due to the characteristics of rural parents' education being life-oriented and the particularities of rural education in terms of resource allocation, educational environment, teaching methods, and educational goals, this study draws on the classifications of different researchers' understandings of positive parenting styles and divides parents' positive parenting styles into three dimensions: warmth, autonomous support, and providing rescue. First of all, the dimension of warmth involves the emotional care and support that parents show when interacting with their children. This includes giving children love, care, encouragement and emotional security. A warm parenting style makes children feel cherished and accepted, which is crucial for children's emotional development and the establishment of self-worth (Lam, 2018). Secondly, autonomous support refers to parents' ability to encourage children to think independently and explore themselves. This parenting style supports children's autonomy and allows them to make choices within a certain range, thereby promoting their decision-making ability and problem-solving ability. Autonomous support also involves respecting children's interests and opinions and providing them with opportunities to explore their passions and potentials. The dimension of providing rescue emphasizes the importance of parents providing help and support when children encounter difficulties or challenges. This includes giving appropriate guidance, resources and interventions when children need them to help them overcome

obstacles. Providing rescue also means that parents should be able to effectively respond to their children's needs while maintaining the promotion of their growth and development (Tae & Eun, 2017). Researchers have shown that parents' positive parenting styles have multiple impacts on children, families and society, and parents' positive parenting styles are positively correlated with the teacher support felt by children. Ansong's (2017) research points out that teachers may have biases in paying attention to students' progress, and this bias is likely related to parents' interest and investment in their children's education. In a family environment full of care and encouragement, children often perform well. They not only gain recognition from teachers and classmates in learning and life, but also receive more teacher support. Children from such family backgrounds usually have a clearer self-awareness because they are recognized by their parents. They are neither inferior nor arrogant and can maintain an appropriate self-positioning in school. Such a positive attitude and performance make it easier for them to gain the attention and favor of teachers (Sun, 2020). Ge's (2024) research further confirms the significant correlation between parents' positive parenting styles and teacher support. When parents take the initiative to communicate with teachers about their children's studies, such active participation can significantly increase teachers' attention to students. At the same time, this joint support of family and school can enhance children's sense of self-efficacy and inspire them to face challenges and difficulties more actively. Therefore, parents' active participation in family education not only directly affects children's personal development, but also indirectly promotes children's better performance in school by increasing teacher support.

There is a very close relationship between the types of parenting styles and students' academic achievements (Kim, 2021). According to the research on the types of parenting styles, authoritarian, permissive and neglectful educational methods are not conducive to the formation of goals for children and are not conducive to the improvement of their academic achievement levels, and are negatively correlated with students' academic achievements; warm, authoritative and protective parenting styles can stimulate students' sense of purpose and are conducive to the development of their academic self-concept and have a positive effect on children's academic achievements (Lee & Choi, 2012). After examining the impact of parenting styles on academic development, Lamborn (1991) also reached a similar conclusion, that is, students under authoritative parenting styles perform better academically than students under authoritarian parenting styles, and there is a positive correlation between authoritative parenting styles and academic performance. Kim's (2021) research shows that when children feel love and care in the family environment, they often develop a strong sense of security and belonging. This emotional support is an important source of courage and confidence for children when facing academic challenges. Similarly, when parents treat their children's academics in a way that accepts and encourages autonomy, it can effectively reduce children's negative attitudes towards academics and thereby increase their enthusiasm for learning investment (Borak, 2016). And as parents spend more time with their children, students' cognitive abilities also show a significant upward trend (Dyches, 2012). These studies reveal the positive impact of parents' active participation, providing

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emotional support and cognitive stimulation on children's academic achievements, and emphasize the key role of positive family parenting in children's academic and personal development.

2.2 Teacher Support

As an important category in the fields of education and psychology, teacher support aims to provide students with professional knowledge, affection and reliability support through various channels and methods in the education and teaching process to promote the all-round development of students. The concept of teacher support is not static. As research perspectives change, its connotation and extension also expand. Pianta (1999) proposed the "teacher efficacy" theory, emphasizing how the degree of teachers' trust in their own teaching ability directly affects the effectiveness and durability of their support. This theory suggests that teachers' self-confidence and professional ability largely determine their ways and effects of supporting students. Urdan and Schoenfelder (2006) pointed out that the support given by teachers in the academic field also includes specific learning strategy guidance and academic feedback, which all provide strong help for the improvement of students' academic ability. Teacher support shows different characteristics in different educational stages and backgrounds. When we focus on the primary school stage, we can find that teacher support is more reflected in emotional and behavioral support. This is because students at this stage have more significant needs in terms of emotion and self-control ability. Teacher support plays an important role in improving students' academic achievements. Teacher support can affect students' learning outcomes through multiple channels. Specifically, teacher support helps enhance students' academic self-efficacy, making them more confident when facing learning tasks, and then achieving an improvement in academic achievements (Bandura, 1997). Emotional support can stimulate students' internal drive for learning and make them more willing to invest time and energy in learning activities (Wentzel, 1997). More importantly, the imparting of teachers' professional knowledge helps students improve learning efficiency and academic performance by providing necessary understanding and feedback (Pianta, 2012). In addition to the direct impact on academic achievements, teacher support also has a positive effect on the development of students' non-cognitive abilities. Non-cognitive abilities mainly include emotional regulation, social interaction and behavior management. Teachers' emotional support significantly enhances students' emotional regulation and social skills by establishing good teacher-student relationships. In specific educational practices, the realization methods of teacher support are also diversified. Teachers not only provide all-round support through daily classroom interactions, after-class tutoring and home-school communication (Epstein, 1987). In recent years, the wide application of digital teaching tools and platforms has also opened up a new path for teacher support. Emerging tools such as online learning platforms, educational applications and virtual learning environments enable teachers to support students in a more flexible and efficient way, adapt to different learning needs and help students achieve better academic achievements (Hwang & Wu, 2014).

Teacher support is widely regarded as a key factor affecting the academic achievements of rural primary school students, and its composition has multi-level and multi-dimensional characteristics.

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According to the induction of multiple studies, the connotation of teacher support can mainly be divided into professional knowledge, affection and reliability. The three complement each other and jointly constitute the overall framework of teacher support. Affection refers to the emotional support given by teachers to students in the classroom and campus environment and the care, understanding and respect felt by students. This kind of support is manifested as teachers' trust and acceptance of students, which can not only stimulate students' learning motivation, but also enhance their self-esteem. And students who have a higher degree of affection with teachers often receive higher emotional support from teachers. Wentzel's (1997) research shows that there is a positive correlation between teachers' emotional support and students' academic participation. Especially when students face learning challenges and psychological pressure, teachers' emotional support can play a mitigating role and effectively promote students' learning enthusiasm. In the educational process, teachers' care, encouragement and respect can not only enhance students' sense of self-efficacy, but also significantly improve their academic motivation (Wang & Eccles, 2013). Specifically, when teachers promptly affirm and praise students' efforts and successes, students' sense of academic participation and self-confidence are effectively improved. This kind of support is not only reflected in changes in students' test scores, but more importantly, it can affect students' overall learning attitudes and emotional development. Professional knowledge involves various academic supports adopted by teachers to help students understand and master academic content. This includes links such as imparting knowledge, learning guidance and feedback evaluation. Pianta et al.'s (2012) research pointed out that teachers' academic support helps students master learning skills by providing explanations of systematic knowledge structures and lays a solid foundation for their academic achievements. When teachers have stronger professional knowledge, students can obtain more support in academics, and their ability to understand and master learning often improves significantly. Brophy's (1986) research pointed out that teachers can effectively improve students' learning efficiency and performance by guiding and regulating classroom behaviors. The improvement of teachers' reliability largely depends on the substantive support and information support provided by teachers. Substantive support refers to teachers providing substantive resources and help to meet the actual needs of students encountered in the learning process. For example, teachers can provide supplementary textbooks, learning tools and extracurricular tutoring. Information support mainly focuses on teachers passing on learning-related information and suggestions to students, such as the formulation of learning plans, the sharing of examination strategies and the latest hotspots in discipline development. Effective information exchange can help students obtain the information and resources they need in the learning process in time, thereby optimizing their learning strategies and improving learning efficiency. The substantive support and information support provided by teachers can greatly improve teachers' reliability. In rural areas, due to the lack of sufficient academic resources and information channels for students, teachers' information support becomes particularly important and its role cannot be ignored.

In the field of educational research, the impact of teacher support on students' academic achievements

has always been an important topic of great concern. Teacher support not only covers the academic help provided by teachers in classroom teaching, but also includes the comprehensive care of teachers in psychological, emotional and social support. In educational practice, the support role of teachers is multiple, and this diversity makes teacher support one of the key factors affecting students' academic achievements. Research shows that high-quality classroom teaching has a significant positive impact on students' academic achievements. Hattie's (2009) research pointed out that the influence of teachers' teaching quality in the classroom on students' academic achievements is positively correlated, which clearly shows the necessity of good teaching. Ryan and Deci's (2000) self-determination theory points out that when students' sense of security and belonging are satisfied, learning motivation and academic performance will be significantly improved. Teachers' social support also has a profound impact. This kind of support is mainly reflected in helping students establish effective connections with schools and communities. By holding parent-teacher meetings, community activities and extracurricular practices, teachers can help students integrate into a broader social environment and enhance their social adaptability. Many studies have shown that teachers' social support is especially important for rural students because they often face the dilemma of insufficient family resources and lack of community support. Therefore, the role of teachers in social support is an important link in realizing educational equity. Among different types of teacher support, various forms of support interact with each other and jointly act on students' academic achievements. Adena and Klem's (2004) research explored the relationship between teacher support and students' academic achievements. The results showed that there is a significant positive correlation between the two. This research result emphasizes that in China's rural education environment, teachers' multi-faceted support is particularly important. Teachers are not only students' academic guides, but also emotional supporters and social connectors. Their comprehensive support can promote the progress of students' studies in multiple dimensions. In short, research shows that teacher support has multiple effects in improving students' academic achievements. Especially in rural areas where resources are relatively scarce, improving the quality and coverage of teacher support is of great significance for realizing educational equity and improving the overall academic level of students.

How to scientifically and reasonably measure the impact of teacher support on students' academic achievements. Effective teacher support not only directly affects students' academic achievements, but also plays an important mediating role in the collaborative cooperation between family and school. First of all, effective teacher support can become a link between parents and schools. Wei's (2022) research shows that through communication with teachers, parents can more deeply understand the criticality of education for their children and the specific needs of their children in learning. This kind of communication helps parents understand the development trend of modern education and the critical period of children's growth, and then enhance parents' participation and concern for children's learning. Therefore, fully understanding the importance of teacher support has certain theoretical and practical significance for improving the academic achievements of students, especially rural primary school

students. As a mediator, teacher support has become a link in home-school collaboration emphasized by modern education theory, and is also the organizer and coordinator of collaborative education activities. Teachers conduct in-depth communication with parents through diversified ways, such as home visits, parent-teacher meetings and online communication platforms, understand students' performance and needs in the family environment, and make personalized teaching adjustments based on this to better meet students' learning needs. Secondly, teacher support also plays an important role in narrowing the education gap between urban and rural areas. In rural areas, due to relatively limited educational resources, uneven abilities of the teaching staff, and significant differences in educational infrastructure and environment from urban areas (Barter, 2008), as professional educators, teachers' support for education is of great value. Finally, the importance of teacher support as a mediator is not only reflected in the direct impact on students' academic achievements, but also plays a pivotal role in the collaborative cooperation mechanism between family and school. Through teacher support, students can achieve comprehensive improvement in multiple aspects such as psychological state, academic ability and behavior performance, so as to better adapt to the educational environment and achieve better academic achievements (Tennant, Demaray, Malecki, Terry, & Clary, 2015). From the above research, it can be seen that taking teacher support as an intermediary variable in researching strategies for improving the academic achievements of rural primary school students from the perspective of home-school collaboration is reasonable and effective.

2.3 Cognitive Academic Achievement

Academic achievement usually refers to the performance of knowledge, skills and abilities obtained by students in the school education environment, and is a key indicator to measure the content mastered by a student in the education process and cognitive development (Parker, 2004). In academic research, academic achievement is widely regarded as the comprehensive manifestation of students' learning outcomes, covering their performance in various learning tasks (Zhang, 2010). In the 1970s, the academic community began to use the "student self-report" evaluation method to measure students' academic achievements. The change in evaluation methods made scholars begin to rethink and define academic achievements, among which there is the concept of cognitive academic achievement. There are many explanations for cognitive academic achievement in academia. Barzilai (2014) described cognitive academic achievement as the degree to which learners acquire new knowledge and content through the teaching process, and the degree of achievement recognized by learners themselves after providing relevant questionnaires. Mathew (2017) believes that cognitive academic achievement is a learning result that evaluates learners' knowledge and understanding of learning content through objective evaluation standards. It can be seen that cognitive academic achievement refers to the academic performance achieved by students through cognitive processes such as understanding, memory, application and comprehensive application of knowledge in the school learning process. It is not only a simple reflection of students' academic performance, but also a concentrated manifestation of the abilities and skills they have formed in a specific knowledge field (Alexander, 1991).

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Moreover, academic achievement is usually divided into broad and narrow senses (Hyun, 2014). In a broad sense, academic achievement not only covers cognitive aspects such as knowledge, skills and intellectual development obtained in the learning process, but also includes non-cognitive factors such as learners' interest in learning, attitudes and values (Kim, 2003). These factors together constitute a more comprehensive concept of academic achievement, emphasizing the multi-dimensional influence of the learning process. From a narrow perspective, academic achievement is mainly understood as the specific results achieved by learners in the academic field, which is usually measured by test scores, course completion and other quantifiable academic indicators (Oh, 2003; Lee, 2011). This definition focuses on the objective assessment of learning results and provides clear evaluation criteria for educators and policy makers. Barzilai and Blau (2014) further pointed out that cognitive academic achievement is the subjective evaluation of learning activities carried out by learners themselves. This self-evaluation reflects learners' cognition and perception of their own learning effects. This view emphasizes the importance of learner subjectivity in the assessment of academic achievement. Some scholars have pointed out that academic performance is closely related to learners' perception of the effectiveness of overall learning activities. Metcalfe (2009) believes that the achievement level of the results of learning activities evaluated by learners themselves is similar to the actual achievement results revealed as objective indicators. Similarly, Pace's (1990) research confirms that the objectively measured achievement results are consistent with the achievement results measured by learners themselves. Therefore, it is recommended to use the perceived academic achievement of learners to measure academic achievement. In this regard, this study equates the measurement method of academic achievement with the measurement method of cognitive academic achievement.

The importance of rural academic achievements is increasingly valued in today's educational research and policy formulation. This is not only because there are significant gaps in educational resources and educational opportunities for rural students (Deng, 2023), but also closely related to the important impacts of these gaps on the improvement of the country's overall education level and the balanced development of urban and rural education. At the same time, the improvement of rural academic achievements can achieve the important goal of educational equity and provide a solid talent foundation for the country's economic and social development. The improvement of rural academic achievements is an important measure to achieve educational equity. Research shows that the academic achievements of rural students are generally lower than those of urban students, mainly due to differences in economic level, teacher resources, educational facilities and other aspects. For example, the unequal allocation of educational resources between urban and rural areas leads to rural schools lagging behind cities in many aspects such as infrastructure, teaching equipment, and teaching staff (Barter, 2008; Deng, 2023). This unbalanced educational status quo not only increases the learning pressure of rural students, but also reduces their learning interest and self-confidence. By improving the academic achievements of rural students, the educational gap between urban and rural areas can be effectively narrowed and a higher level of educational equity can be achieved.

The academic achievements of rural students have an important and undeniable impact on the future development of individuals and families. High-level academic achievements not only provide more opportunities for students to enter higher education and find employment, but are also closely related to their future social mobility. Peng's (2022) research shows that in addition to improving the individual academic achievements of rural students, the improvement of rural education can also increase the income of rural individual families, not only improving personal economic independence and quality of life, but also creating value at the entire rural family level. The academic achievements of rural students also have a significant role in promoting local social and economic development. Increasing investment in rural education and improving rural academic achievements can not only enable students to obtain more knowledge and skills, thereby improving labor productivity, but also promote local economic development (Han, Du, & Song, 2011). In summary, the importance of rural academic achievements is reflected not only at the individual and family levels, but also has an impact on the development of the entire society and the country. Therefore, exploring strategies to improve the academic achievements of rural primary school students, especially by means of teacher support to improve rural academic achievements, is helpful to achieve educational equity, promote social and economic development, and lay a foundation for the improvement of the country's overall education level. This research direction provides important theoretical basis and practical significance for our next research.

3. Methods

3.1 Model

This study sets up a mediation model of teacher support as the research model. The model is that parents' positive parenting styles affect academic achievement through teacher support. See Figure 1. First of all, parents' positive parenting styles affect academic achievement. This path is derived from the theoretical basis of Zhu (2023). Secondly, according to the research of Sun (2020), it is concluded that parents' positive parenting styles will also affect teacher support. Finally, teacher support affects academic achievement (Fu, 2018; Cao, 2023).
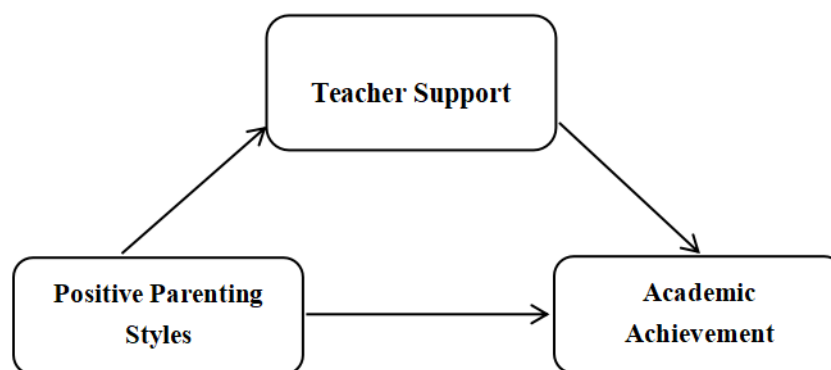

Figure 1. Research Model

3.2 Research Subjects

This study explores and analyzes the promotion mechanism of parents' positive parenting styles and teacher support on the academic achievements of rural primary school students. The survey subjects are students' parents. Since online questionnaires have the advantageous characteristics of low collection cost, convenience and fast speed (Tan & Teo, 2000). Therefore, based on the method of filling and collecting online questionnaires, this study conducted online questionnaire collection for the parents of students in a primary school in Qingxi Village, Youxi County, Fujian Province. In August 2024, it was distributed online through the Questionnaire Star APP. Data was collected after two weeks. Among the collected questionnaires, there are 125. After screening out 1 invalid questionnaire, the final data is 124 questionnaires.

3.3 Research Tools

The tools of this study all adopt Likert's 5-point scale. From "completely inconsistent" to "completely consistent", the score values are 1-5 points respectively. When the score is higher, the degree level of the corresponding variable is better, and a Cronbach α value greater than 0.60 is an acceptable confidence level (DeVellis, 2012). The factor composition and reliability of this study are shown in Table 1. The assessment tool for parents' positive parenting styles is a scale developed by Skinner, Johnson and Snyder in 2005 and then revised by Tae and Eun in 2017. The scale consists of three factors: warmth, autonomous support and providing rescue, and contains a total of 12 items. Among them, the factor of warmth includes 4 items such as "I often tell my child that I love him" and "I like to be with my child", and its Cronbach α coefficient is 0.889. The factor of autonomous support includes 4 items such as "I believe in my child" and "I accept my child as he is", and its Cronbach α coefficient is as high as 0.946. Finally, the factor of providing rescue includes 4 items such as "When my child wants to do something, I will teach him how to do it" and "When my child wants to know something or the reason for something happening, I will explain it to him", and its Cronbach α coefficient is also 0.946.

The assessment tool for teacher support is based on the research tool of Barak and LaCrosse in 1977. This tool consists of 35 items and covers three factors: professional knowledge, affection and reliability. Among them, the factor of professional knowledge includes 8 items such as "The teacher always speaks rigorously and accurately" and "The teacher seems to have rich consulting experience", and its Cronbach α coefficient is as high as 0.965. The factor of affection includes 16 items such as "The teacher is very kind to my child" and "The teacher will often listen to my child talk", and its Cronbach α coefficient is even as high as 0.984. Finally, the factor of reliability includes 11 items such as "During the consultation period, the teacher does not do anything else" and "The teacher is meticulous in dealing with things", and its Cronbach α coefficient is also as high as 0.990.

The assessment tool for academic achievement is the cognitive academic achievement scale developed by Eom, Wen and Ashill in 2006 and revised by Kim in 2010. The scale consists of 4 items, including "I think my child can learn a lot of knowledge from school", "My child can have a good understanding of learning content through school learning", "I think the school classroom meets my child's learning

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needs" and "My child can learn knowledge that is very helpful to his actual life from school classrooms". The Cronbach α coefficient of these items is 0.958.

Table 1. Factor Composition and Reliability of Research Tools

Factor		Number of items		Cronbach α
Positive Parenting Styles	Warmth	4		0.889
	Autonomous support	4	12	0.946
	Providing rescue	4		0.946
Teacher Support	Professional knowledge	8		0.965
	Affection	16	35	0.984
	Reliability	11		0.990
Academic Achievement		4		0.958

3.4 Procedures

First of all, the data collected in this study are all processed by using SPSS 26.0 program, and reliability analysis is carried out on the variables of the study. Secondly, descriptive statistical analysis is used to analyze the comprehensive level of the research objects. Thirdly, correlation analysis is carried out on parents' positive parenting styles, teacher support and academic achievement. Fourthly, regression analysis of parents' positive parenting styles on teacher support, parents' positive parenting styles on academic achievement, teacher support on academic achievement and the test of the mediating effect of teacher support between parents' positive parenting styles and academic achievement are carried out respectively. Finally, based on all the analysis results of this study, strategies to promote the academic achievements of rural primary school students are proposed.

4. Results

4.1 Comprehensive Situation and Correlation of Research Objects

In the demographic characteristics of the research objects, the frequency of the main caregivers of family children being fathers is 76, accounting for 61.3%. The frequency of the main caregivers of family children being mothers is 36, accounting for 29%. The number of main caregivers being (maternal) grandparents and other relatives accounts for a minority, with a frequency of 12, accounting for 9.7%. From the perspective of grade, there are 69 people in the first grade, accounting for 55.6%, and 55 people in the second grade, accounting for 44.4%. From the perspective of the number of children in the family, there are 10 only children, accounting for 8.1%. The frequency of families with 2 children is 62, accounting for 50%. The frequency of parents with 3 or more children is 52, accounting for 41.9%. According to the educational background distribution of the main caregivers of family children, 88 people have junior high school education or below, accounting for 71.1%. 21

people have high school education, accounting for 16.9%. 15 people have junior college education or above, accounting for 12.1%. The frequency of male homeroom teachers is 39, accounting for 31.5%, and the frequency of female homeroom teachers is 85, accounting for 68.5%. The age range of homeroom teachers is 20-35 years old, with a frequency of 75, accounting for 60.5%. The age range of homeroom teachers is 36-50 years old, with a frequency of 37, accounting for 29.8%. The age range of homeroom teachers is over 50 years old, with a frequency of 12, accounting for 9.7%. The teaching experience of homeroom teachers is less than 5 years, with a frequency of 46, accounting for 37.1%. The teaching experience of homeroom teachers is 5-10 years, with a frequency of 55, accounting for 44.4%. The teaching experience of homeroom teachers is more than 10 years, with a frequency of 23, accounting for 18.5%. As shown in Table 2 for the distribution of research objects.

Table 2. Distribution of Research Objects

Component.		Number of people.	Ratio.
Main caregiver of children	Father	76	61.3
	Mother	36	29.0
	Other relatives	12	9.7
Grade of children	Grades 1-3	69	55.6
	Grades 4-6	55	44.4
Number of children in the family	1	10	8.1
	2	62	50.0
	>3	52	41.9
Educational background of the main caregiver in the family	Junior high school and below	88	71.1
	High school	21	16.9
	Junior college and above	15	12.1
Gender of homeroom teacher	Male	39	31.5
	Female	85	68.5
Age range of homeroom teachers	20-35 years old	75	60.5
	36-50years old	37	29.8
	>50years old	12	9.7
Teaching years of homeroom teacher	<5years	46	37.1
	5-10 years	55	44.4
	>10years	23	18.5
total number.		124	100%

Secondly, among the main variables of parents' positive parenting style, teacher support and academic achievement, there are positive correlations between parents' positive parenting style and teacher support (r = 0.653), between parents' positive parenting style and academic achievement (r = 0.538), and between teacher support and academic achievement (r = 0.632). Moreover, there are also positive correlation results among the subordinate factors of each variable. Specific data are shown in Table 3.

Table 3. Correlation Analysis among Various Indicators

Component	1	2	3	4	5	6	7	8	9
Positive Parenting Styles 1	-								
Warmth2	.944**	-							
autonomy support3	.963**	.862**	-						
providing assistance4	.959**	.849**	.898**	-					
Teacher Support 5	.653**	.634**	.619**	.619**	-				
professional knowledge6	.685**	.663**	.657**	.645**	.950**	-			
favorability7	.631**	.616**	.606**	.588**	.979**	.893**	-		
reliability8	.595**	.574**	.547**	.584**	.965**	.901**	.907**	-	
Academic Achievement 9	.538**	.517**	.508**	.518**	.632**	.587**	.617**	.621**	-

*p≤.05 , **p≤.01

4.2 Direct Influence to Examine

The influence of parents' positive parenting style on teacher support, multiple regression analysis was used. When parents' positive parenting style is set as the independent variable and the constant as the dependent variable, the overall regression model is significant, F = 90.520, t = 5.616. When teacher support is set as the dependent variable, the overall regression model is significant, F = 90.520, β = 0.653, t = 9.514, indicating that it has a significant positive influence on teacher support, and the explanatory power of this regression model is approximately 42.6%. Secondly, multiple regression analysis was conducted on the influence of parents' positive parenting style on academic achievement. When parents' positive parenting style is set as the independent variable and the constant as the dependent variable, the overall regression is significant, F = 49.468, t = 6.922. When academic achievement is set as the dependent variable, the overall regression model is significant, F = 49.468, β = 0.538, t = 7.055, indicating that it has a significant positive influence on academic achievement, and the descriptive power of the regression model is approximately 29%. Finally, multiple regression analysis was conducted on the influence of teacher support on academic achievement. When teacher support is set as the independent variable and the constant as the dependent variable, the overall regression model is significant, F = 81.001, t = 5.526. When academic achievement is set as the dependent variable and the overall regression is significant, F = 81.001, β = 0.632, t = 9.000, indicating

that it has a significant positive influence on academic achievement, and the descriptive power of the regression model is approximately 39.9%. Specific data are shown in Table 4.

Table 4. Regression Analysis

Dependent variable	independent variable	B	β	t	p	R2	F	VIF
Teacher Support	constant	1.508		5.616	<0.001	0.426	90.520	1
	Positive Parenting Styles	0.598	0.653	9.514	<0.001			
Academic Achievement	constant	2.073		6.922	<0.001	0.290	49.468	1
	Positive Parenting Styles	0.495	0.538	7.055	<0.001			
Academic Achievement	constant	1.601		5.562	<0.001	0.399	81.001	1
	Teacher Support	0.634	0.632	9.000	<0.001			

4.3 Indirect Influence

To detect whether teacher support plays a mediating role between parents' positive parenting style and students' academic achievement, this study uses the stepwise regression analysis method. As shown in Table 5, first, in stage 2, only considering the influence of parents' positive parenting style on academic achievement, its β value is 0.538, and at this time the explanatory power of the model is 29%. This indicates that parents' positive parenting style can predict students' academic achievement to a certain extent. Then, in stage 3, parents' positive parenting style and teacher support are simultaneously used as predictor variables to examine their influence on academic achievement. At this stage, the β value of parents' positive parenting style becomes 0.220, which is lower than that in stage 2, while the β value of teacher support is significant. This change indicates that when teacher support is included in the model, the direct influence of parents' positive parenting style on academic achievement is weakened, but both have a significant predictive effect on academic achievement. Therefore, we can confirm that teacher support plays a partial mediating effect between parents' positive parenting style and academic achievement.

Table 5. Mediation Effect Analysis

Stage	Dependent variable	independent variable	B	S.E	β	R²	F	p	VIF
1	Teacher Support	Positive Parenting Styles	0.598	0.063	0.653	9.514	90.520	<0.001	1
2	Academic Achievement	Positive Parenting Styles	0.495	0.070	0.538	0.290	49.768	<0.001	1
3	Academic	Positive	0.202	0.084	0.220	0.427	45.026	<0.001	1.742

Achievement	Parenting Styles				
	Teacher Support	0.490	0.091	0.488	1.742

Further calculations show that the indirect effect size of teacher support in the influence of parents' positive parenting style on academic achievement is $\beta = 0.293$. As shown in Table 6, when the direct effect ($\beta = 0.202$) and the indirect effect ($\beta = 0.293$) are combined, the total effect size is 0.495. According to the calculation results of the proportion of effects, it can be found that the effect generated by this mediating path of teacher support accounts for 59.19% of the total influence of parents' positive parenting style on academic achievement. This indicates that teacher support plays an important mediating role between parents' positive parenting style and academic achievement.

Table 6. Mediating Effect Size and Proportion

effect	size	proportion
total effect	0.495	100%
direct effect	0.202	40.81%
mediating effect	0.293	59.19%

5. Discussion

This study is dedicated to in-depth exploration of how parents' positive parenting styles and teacher support affect students' academic achievements, and pays special attention to whether teacher support plays a mediating role in this process. Accordingly, this study surveyed a total of 124 parents of rural primary school students. To verify research question one, "Which components of parents' positive parenting styles and teacher support have a relatively high positive and significant effect on academic achievements?", this study conducted correlation analysis and regression analysis on parents' positive parenting styles, teacher support, and academic achievements. First, in the results of correlation tests, the results among all variables show a significant positive correlation. Further, through regression analysis of the influence effects between variables, it is shown that parents' positive parenting styles ($\beta = 0.538$) have a significant positive influence on academic achievements. Among them, from the correlation coefficients between the subordinate factors of parents' positive parenting styles, warmth ($r = 0.517$), autonomy support ($r = 0.508$), and providing assistance ($r = 0.518$), and academic achievements, it can be seen that parents' positive parenting styles can all have a positive impact on students' academic achievements. This result is partially consistent with the research of Lee and Choi (2012), that is, adopting educational methods of warmth and care can promote the formation of students' goal orientation, help improve their academic self-awareness, and then have a positive impact on students' academic performance. In the research of Tae and Eun (2017), it has also been indicated that parents providing assistance means that parents can effectively respond to the needs of their

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children and have a positive effect on their academic achievements.

Parents' positive parenting style (β = 0.653) also has a significant positive influence on teacher support. The positive correlation results between warmth (r = 0.634), autonomy support (r = 0.619), and providing assistance (r = 0.619) among its subordinate factors and teacher support illustrate the positive influence effect of sub-factors of positive parenting style on teacher support. Just as shown in the research results of Ansong (2017), when parents interact with their children in a warm, caring, and supportive way, children will gain more security and a sense of belonging, and be more confident and actively seek help when facing school challenges, and then obtain the attention and support of teachers. It also has some similar components to the research of Sun (2020). The results show that when parents encourage their children to think independently and take responsibility, children will develop a stronger sense of self-efficacy and independence. This autonomy not only helps children better cope with various tasks and challenges in school, but also enables them to communicate and cooperate with teachers more actively. By providing assistance, parents can help children build the ability and confidence to solve problems, making them more courageous to face challenges in school, and thus strengthening the trust and cooperation relationship between children and teachers.

Teacher support (β = 0.632) also has a significant positive influence on academic achievement. The results of positive correlations between subordinate factors such as professional knowledge (r = 0.587), favorability (r = 0.617), and reliability (r = 0.621) and academic achievement indicate that professional knowledge, favorability, and reliability in teacher support can also improve students' academic achievements. These results are consistent with the theory of Wang and Eccles (2013). For example, when students have a favorable impression of teachers, they are more willing to actively participate in classroom activities and interact with teachers. This positive teacher-student relationship can stimulate students' learning interests and motivation and promote their in-depth understanding and application of knowledge. Similarly, the theoretical results of Savickas (2005) show that the imparting of teachers' professional knowledge by providing necessary understanding and feedback will help students improve learning efficiency and academic performance. When students think that teachers are reliable and can get support and help when needed, students will gain greater self-efficacy in academics and be more focused on learning tasks to achieve better academic results.

Secondly, in order to verify the second research question of this study: "Will parenting styles indirectly improve academic achievements through teacher support?", it can be seen in the mediation test that teacher support has a partial mediating effect. This means that the influence of parents' positive parenting styles on academic achievements is not entirely direct. Instead, part of it is achieved by increasing the level of teacher support. Specifically, parents' positive parenting styles such as warmth, autonomy support, and providing assistance not only directly have a positive impact on students' academic achievements but also further promote the improvement of academic achievements by enhancing the teacher support that students feel, including aspects such as professional knowledge, favorability, and reliability. Combined with the results of regression analysis, it can be speculated that

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when parents adopt positive parenting styles such as warmth, autonomy support, and providing assistance, these behaviors may convey a positive learning attitude and emotional state to their children, thus making it easier for children to feel teacher support in school life. The care, encouragement, and guidance included in teacher support, as well as providing necessary academic help, all help students overcome difficulties in learning and improve academic performance. Therefore, it can be considered that parents' positive parenting styles not only directly affect academic achievements but also indirectly promote the improvement of academic achievements by enhancing the mediating variable of teacher support. This result further illustrates that in the context of home-school cooperation, parents' parenting styles and teachers' support are complementary to each other, and both jointly act on students' academic development.

Finally, verifying the third research question of this study: "In the perspective of home-school collaboration, from which specific aspects can we promote the academic achievements of rural primary school students?" Combining the results of this study, since the regression verified that the influence relationships among various factors all show positive significance. In the correlation analysis, between parents' positive parenting style and teacher support, the warmth factor of parents' positive parenting style has a higher correlation than other subordinate factors; between parents' positive parenting style and children's academic achievements, the warmth and providing assistance of parents' positive parenting style have a higher correlation; between teacher support and children's academic achievements, the reliability factor of teacher support has a higher correlation than other subordinate factors. Therefore, in the home-school collaboration model, by enhancing parents' warm educational behaviors towards their children, the reliability of teachers can be improved to further promote children's academic achievements. Because the warmth of parents' positive parenting style, this subordinate factor, shows a relatively high correlation with both teacher support and academic achievements. Therefore, in order to promote the academic achievements of rural primary school students, parents need to strengthen their warm parenting style towards their children. For example, in daily life, parents should express more love and care for their children. Through words, body language, and other means, let them feel the love and attention of their parents, thus establishing an intimate parent-child relationship. And try to spare time to accompany their children and participate in their daily life and learning activities. During the accompanying process, understand the interests and needs of their children and give them appropriate guidance and support. In addition, when children encounter difficulties and challenges in learning or life, parents should maintain an open and inclusive attitude, accommodate their children's confiding, and give timely support and encouragement when they need help to enhance their children's sense of family security and belonging. And recognize the uniqueness of their children, attach importance to the individual differences in education, help children discover their own potentials and advantages, and give affirmation and encouragement. Teachers can maintain close contact with parents through regular home visits, parent-teacher conferences, and communication platforms, share students' performance and progress in school, and at the same time listen to parents'

opinions and suggestions. Establish a trust relationship through two-way communication so that parents can feel the care and support of the school and thus participate more actively in their children's educational activities. On school activity days, teachers can organize some parent-child activities, such as parent-child reading, parent-child sports meetings, etc., to help parents better understand their children's interests and specialties, and feel scientific parenting methods in the process, and then improve their parenting abilities. In addition, at the school level, some professional training and guidance can be provided for parents to help them master effective communication skills and educational methods, including how to correctly guide children's behaviors, how to deal with children's emotional problems, how to stimulate children's learning interests, etc. With practical suggestions and methods, help parents better cope with the challenges encountered in the educational process and enhance their confidence and educational effects. And through promoting parents' positive parenting styles to strengthen effective interaction between home and school, parents can communicate with teachers in an open and respectful way, establish a closer cooperative relationship, and jointly pay attention to the growth and development of their children. So that teachers can better understand the needs and backgrounds of students, and it is conducive for parents to further understand the school's educational philosophy and teaching methods, thus forming a virtuous circle and further improving the reliability of teacher support. Then, teacher support is used to promote the comprehensive improvement of students' academic achievements.

6. Conclusion

This study aims to explore the influence mechanism on academic achievement through investigating the positive parenting styles of parents and teacher support of rural primary school students, and deeply discusses the influence of parents' positive parenting styles and teacher support in the strategies for improving the academic achievements of rural primary school students. This research not only provides an empirical basis for understanding how family and school factors jointly act on students' academic achievements but also provides a reference of certain theoretical value for rural education practice and policy formulation. First of all, through correlation analysis and regression analysis, this study reveals the significant positive correlation between parents' positive parenting styles, teacher support, and students' academic achievements. This indicates that parents' active participation and teachers' effective support are key factors in improving the academic achievements of rural primary school students. In addition, the test of mediating effect further confirms the bridging role of home-school cooperation in promoting students' academic achievements, that is, parents' positive parenting styles can indirectly affect students' academic performance through teachers' support. Secondly, this study screens out warm positive parenting behaviors as an important factor in home-school collaboration in the context of rural areas and puts forward suggestions for improving children's academic achievements, which has certain practical significance for improving the distribution of rural educational resources and improving educational quality.

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Although this study has achieved certain results, there are also some limitations that cannot be ignored. First of all, since the research sample is mainly from a specific rural area, its representativeness may be limited, so the universality of the research results may be affected to a certain extent. Future research can expand the survey scope to include more regions and different types of rural communities to improve the external validity of the research. Secondly, although this study has conducted empirical analysis, its method relies on survey research and may not be able to fully capture the complexity and dynamics of educational phenomena. For example, factors such as students' psychological development and changes in family environment may also have an impact on academic achievements, but these factors were not fully considered in this study. It is expected that follow-up research can use interview methods and observation methods to further explore the relevant theoretical basis of parents' positive parenting behaviors on improving children's academic performance. Finally, this study mainly focuses on the influence of parents' positive parenting styles and teacher support. However, academic achievements may also be affected to varying degrees in aspects such as peer relationships, school resources, and learning adaptation. Future research can further explore the role of these factors to gain a deeper understanding and propose universal and long-term strategies for promoting the academic development and personal growth of rural primary school students.

Project Funding

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