Research on the Integration of Educational Information Technology into the Collaborative Education Path of Rural Basic Education in the Context of Double-Reduction

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Abstract. Education modernization can only be achieved through the implementation of education technology. The rise of digital education has given birth to numerous brand-new topics. This article begins with the collaborative education mechanism of rural home-school communities within the context of Double-Reduction. In addition, it proposes enhancing the service supply capacity of digital education resources in rural education, maximizing the benefits of information technology, and allowing education informatization to play a significant role in collaborative education practice. Currently, collaborative education in rural basic education lacks synergy and mutual limitations. This paper proposes integrating information technology into parenting work in response to the problems of collaborative parenting in rural basic education, such as the lack of parental accompaniment supervision, the increased pressure on teachers' parenting, and the lack of social support for students' good initiation education. The objective is to close the gap between metropolitan and rural areas, bridge the "digital divide," and establish a new model of collaborative education in rural basic education.

Keyword: Education Informatization · Double-Reduction · Rural Education · Collaborative Education

1 The Practical Significance of Collaborative Education in Rural Basic Education

According to the "Opinions on Sound School-Family-Society Collaborative Parenting Mechanism" (hereinafter "Opinions") jointly issued by the Ministry of Education and 13 other departments in January 2023, we must adhere to the concept of scientific education and strengthen the consensus of collaborative parenting. Is the school family society in agreement regarding educational values, and does it adhere to the concept of quality education and the law of minors' physical and mental development? And,

we must adhere to a people-centered education that emphasizes the moral, intellectual, physical, and aesthetic development of socialist builders and successors. The Opinion provides policy guidance for collaborative education, and the establishment of a sound mechanism for collaborative education of family, school, and society is a necessary condition for comprehensively deepening education reform in the new era, implementing the fundamental task of establishing moral education, and achieving the integration of thinking and political education in universities and schools.

2   Problems of Collaborative Education of Rural Families, Schools and Communities

The rural home-school-society collaborative education system has received extensive attention from the country's highest-level planners. In the context of Double-Reduction, it is discovered that there are still instances of "misplaced" family education, "overstepped" school education, and "missing" social education in rural basic education. In response to these issues, the concept of collaborative education in rural areas has emerged. These issues result in a weakened concept of collaborative education in rural areas, as well as ambiguous responsibilities and boundaries between the three subjects [1]. As demonstrated in Fig. 1.

2.1   Family Education Is "Misplaced", and Parents Are Not Accompanied and Supervised Properly

The study found that the phenomenon of left-behind children in rural areas is still prevalent, the current situation of foster care or substitute care is highlighted, and pupils are still in the developmental stage of physical and mental maturation. In the process of development and education, they lack parental companionship. Student self-awareness must be enhanced, and parental supervision awareness must be heightened. On the one hand, parents continue to focus on enhancing the family's material circumstances. They may disregard the emotional and educational requirements for their children's physical and mental development. On the other hand, the parents of rural students lack education and knowledge. Traditional educational concepts such as "test scores determine everything" and "score-only theory" shape their educational philosophy and value orientation [3]. Parents evaluate their children's excellence solely based on their pursuit of high or low academic achievement, and have no systematic plan for their education. They blindly adhere to the arrangements of schools and instructors, which has an impact on
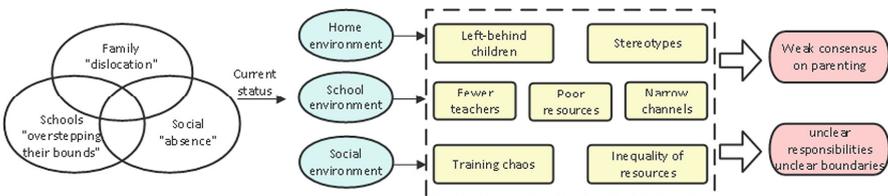

Fig. 1. Problems with collaborative parenting in rural basic education

their children's learning motivation and sense of self-exploration. In severe instances, this may result in rebellion and school aversion.

2.2 School Education "Overstepped" and Teachers Under Increased Pressure to Educate People

In rural regions, particularly impoverished regions, the concept of education is out-of-date. People believe that schools are solely responsible for education. In addition, rural schools have insufficient teachers and outdated educational resources. They emphasize intellectual education more than moral education on average. In the context of Double-Reduction, rural primary education is severely lacking in after-school services. Student cannot acquire knowledge and skills from sources other than the classroom, and the shortage of teachers results in the phenomenon of "multiple teachers" and "teachers teaching multiple subjects." Teachers cannot care for each student, and the pressure to provide both quality and quantity is intense.

2.3 Social Education Is "Absent" and Students Are Not Receiving Quality Initiation

Society has the most practical nurturing function of any subject. The subject of this practical platform, society, is unaware of its own educational responsibility [3]. The culture possesses the greatest educational resources. Due to the long-term "absence", however, rural education resources are strained to the limit, and it is also susceptible to social training chaos. In addition, students in the rebellious years of primary and secondary school do not receive a quality education because of the lax enforcement of poor culture in backward rural areas. Consequently, a number of them become "problem students." This phenomenon occurs in both urban and rural institutions.

3 Study on the Countermeasures of Collaborative Education of Rural Families, Schools and Communities

From the perspective of collaborative subjects, family, school, and community collaboration in education entails participation in multiple subjects jointly. How to further promote the implementation of Double-Reduction on the ground and establish a sound mechanism of rural family, school, and community collaborative education. Information technology in education is both an educational objective and a teaching instrument. With the assistance of digital information technology, the efficacy of the three subjects of collaborative education has increased as Double-Reduction continues to advance [4]. We should use information technology to create an online platform for rural home-school-society collaborative education and increase the number of multi-channel ports in order to establish a more robust connection for implementing rural basic education collaborative education. As demonstrated in Fig. 2.
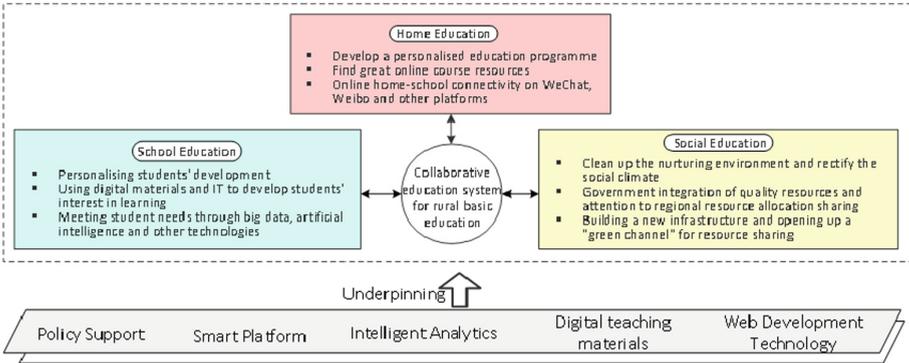
Fig. 2. Rural Home-School-Society Co-operative Education System

3.1 Parents Break the Old Stereotypes and Play the Function of Family Education Guidance

The development of children is impossible without the influence of family education. By configuring columns on the online platform for collaborative co-education in accordance with students' learning situations, parents can develop individualized family education programs. In addition, parents can make home-school quality resources available for mutual sharing and collaborative administration, and then locate online curriculum resources for their students on the platform for quality education learning resources. Parents of students who are poor learners should be adept at observing and identifying their interests and strengths, and serve as educational advisors. Parents can encourage students' development by combining online consultation with offline communication. Additionally, parents can use WeChat, the school's public website, and Weibo to learn about their students' academics and school life. So that parents can be intimately involved in the parenting process, there must be closer ties between parents and the school.

3.2 The School Cultivates Individualized Students and Thus Strengthens the Effectiveness of the Main Position of Education

Co-education is an intricate procedure. Under the direction of the Double-Reduction policy, and in contrast to the previous teaching model and methods, schools do an excellent job of fostering the primary education function, with innovative thinking, multi-angle training, and personalized students. From teaching to learning this block chain, students can attain more extracurricular knowledge expansion through the use of digital education resources and the public service system. For instance, the incorporation of digital teaching materials into the classroom to assist teachers with instruction, homework review, curriculum evaluation, and other resource-rich databases. We can also employ diverse teaching methods such as "Internet + education" and "intelligent system + teaching" to enhance classroom teaching activities and increase students' motivation to learn [5]. In addition, we are pleased to use intelligent information technology to construct a technology platform based on big data, artificial intelligence, Web development technology,

and IoT visualization digital twin in order to meet the needs of students' personalized growth, thereby promoting in their overall development.

3.3 Social Purification of the Educational Environment, and then the Integration of High-Quality Resources to Collaborate and Share

The society corrects the negative culture and purifies the educational environment, while the government implements high-quality educational resources. We can classify and upload them to major educational learning platforms using the Internet. Then, revise iterations in time for school teachers and parents of students to choose them as references. Additionally, a feedback platform for educational resources can be established. Parents and teachers are subsequently able to provide feedback to the platform based on students' progress. The platform employs big data analysis to push out student-friendly learning resources. Second, the new infrastructure will be implemented in schools, particularly those in remote locations and those with inadequate information technology. We must eliminate the barriers of closed independent education in rural areas, open a "green channel" for sharing basic education resources in rural areas, improve the quantity and quality of digital education resources, expand the coverage of information-based education resources, and encourage the sharing of basic education resources between rural and urban areas.

4   Conclusion

The collaborative education of rural families, institutions, and communities appears to be more diverse and transparent in the context of Double-Reduction. Particularly, the use of information technology to improve the comprehensive development of rural primary and secondary school students and the reasonable and effective integration of the consensus of three-party education of home, school, and society can maximize their respective strengths and weaknesses. In the end, it can accelerate the enhancement of the education system's moral, intellectual, physical, social, and aesthetic components. The development of education informatization + rural basic education collaborative education and assistance in enhancing the quality of education also presents an opportunity to reconcile the rural education.

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