

Analysis of the Situation of Primary School Education in Rural Areas and Research on the Application of Cloud Classrooms

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Abstract: The development of quality education in rural primary schools holds profound significance, and cloud classrooms have emerged as a novel impetus. This article centers on the development model of cloud classrooms in rural primary education, conducts an in - depth analysis of the current status and requirements of rural primary education, and delves into the application value of cloud classrooms. Based on research and analysis, cloud classrooms manifest diverse modes in aspects such as resource sharing, teaching interaction, and teacher professional development. They effectively break down the barriers between urban and rural educational resources. Not only do they enrich educational resources, thus broadening students' horizons and innovating teaching - interaction forms to stimulate students' learning enthusiasm, but they also furnish a platform for teacher trainees with a dedication to rural education to familiarize themselves with the teaching environment and enhance their teaching capabilities. Nevertheless, the issues of technical support and teacher adaptability remain to be addressed. This article offers support for the construction of a cloud - classroom development model tailored to rural primary schools, with the aim of facilitating the enhancement of rural quality education and the advancement of the educational informatization process.

Keywords: Cloud classroom; Quality education; Village primary school; Supportive teaching

1. Current Status of Rural Education Quality

1.1. Insufficient Educational Resources

In rural primary schools, the scarcity of educational resources is a widespread issue. Whether in terms of hardware facilities or teaching equipment and library materials, there is a general shortage. Many primary schools have insufficient hardware facilities such as classrooms, laboratories, and gymnasiums, as well as software equipment including textbooks, books, computers, and projection equipment to meet basic teaching needs. In addition, there is a lack of equipment needed for subjects such as music, art, and physical education. Taking basic courses such as Chinese and mathematics as an example, there is also a shortage of equipment in primary schools. This has severely restricted the learning and comprehensive quality cultivation of rural children [1].

1.2. Weak Teaching Staff

Rural areas often face the problem of a weak teaching force. On the one hand, due to factors such as working environment and salary, many talented teachers are unwilling to teach in rural primary schools. On the other hand, due to fewer teacher training opportunities in rural areas, the professional abilities and qualities of teachers improve slowly and it is difficult to meet the educational needs of students. In addition, the level of some rural primary school teachers is limited and it is difficult to meet the educational needs of students [2,3].

1.3. Generally Poor Conditions

The learning and living conditions in rural primary schools are generally poor, such as crowded classrooms, poor accommodation conditions, and low-quality food. These all have an impact on the physical and mental health of students. In addition, due to the improvement of family economic conditions, many students choose to study in cities or other places, resulting in a year-on-year decrease in the number of students in rural primary schools, further exacerbating the imbalance of educational resources [4].

1.4. Backward Teaching Concepts

In some rural areas, the traditional "cramming" teaching model still exists. It focuses on massive knowledge infusion and lacks teaching methods that stimulate students' thinking and cultivate practical

application abilities. This teaching model cannot meet the requirements for talent quality in modern society and limits the improvement of students' comprehensive abilities [5].

2. In-depth Analysis of the Current Situation of Traditional College Student Volunteer Teaching Practice

2.1. Instability in teaching status during volunteer teaching and insignificant results in talent cultivation

In recent years, in order to narrow the educational gap between urban and rural areas and alleviate the dilemma faced by many remote rural areas due to the extreme scarcity of teacher resources, major colleges and universities have launched large-scale college student volunteer teaching projects. A large number of enthusiastic college students bravely devote themselves to places in need and contribute their youth and strength. However, the volunteer teaching period is usually only a short-term choice of one semester or even only one to two years. This short-term volunteer teaching activity is undoubtedly like a relay race. With each handover, new teachers need to fully understand and take over the work tasks of their predecessors in classroom management and teaching content design. Nevertheless, after each teacher turnover, students still need to spend some time adapting to the new teaching methods. During this period, it is reasonable that there will inevitably be some omissions or repetitions in education, teaching, and management. However, in the long run, students in aided primary schools cannot get rid of the instability of the teaching state. Coupled with the fact that the educational concepts of most volunteer teachers are limited by local infrastructure, the educational resources of students in the aided schools can only maintain a basic balance and no significant progress has been made.

2.2. Relatively high costs and complex risk factors involved in the actual volunteer teaching process

Volunteer teaching activities, especially in poverty-stricken and backward areas in central and western regions such as Xinjiang, Yunnan, Guizhou, Sichuan, and Ningxia, often face various risks, including harsh living environments, backward transportation facilities, and unstable communication networks. These factors not only increase the difficulty of the volunteer teaching team in carrying out their work but also increase the risks for volunteers in their work. In these areas, due to the harsh living environment and backward transportation conditions, the volunteer teaching team may need to live and work in remote areas. The limitations of transportation tools may also affect their work efficiency and personal safety. In addition, due to the unstable communication network status, the volunteer teaching team may not be able to obtain and process important information in a timely manner, thus affecting their work quality. Similarly, the difficulty in daily language communication in these areas may also affect the work efficiency of the volunteer teaching team. Due to language barriers, the volunteer teaching team may need to spend more time and energy communicating with local people, thus affecting their work quality and efficiency. Despite the many challenges in these areas, the volunteer teaching team still needs to overcome difficulties and actively participate in the educational work of aided primary schools. They need to provide better educational opportunities for local students and contribute to the development of local education. For the volunteer teaching team, when carrying out volunteer teaching activities, how to effectively deal with various risk factors faced in the volunteer teaching process will directly relate to the final effectiveness of the entire volunteer teaching activity. Therefore, the volunteer teaching team needs to take effective measures, such as strengthening cooperation with local governments and communities and improving the team's risk awareness and emergency response capabilities to ensure the smooth progress of volunteer teaching activities.

2.3. Teaching in weak schools: Challenges and explorations for outstanding normal school students

Outstanding normal school students usually have high professional qualities and teaching abilities. However, in schools with extremely poor student sources, they may find that students have weak basic knowledge and low learning interest, which greatly increases the difficulty of teaching. Teachers need to spend more time and energy improving students' foundations while stimulating students' learning interests and motivation. In schools with poor student sources, students often have weak discipline, which brings great difficulties to class management. Teachers need to maintain classroom discipline while also handling various emergencies to ensure the smooth progress of teaching activities. Secondly, the lack of educational resources

also puts great pressure on outstanding normal school students. The lack of advanced teaching equipment and rich library materials limits their teaching methods and makes it difficult for them to fully exert their teaching abilities. Facing the school environment and student conditions of extremely poor student sources, outstanding normal school students may experience frustration and powerlessness, which pose a threat to their career development and mental health.

3. Construction and Advantages of "Cloud" Classroom

With the development of the Internet and information technology, online volunteer teaching in "cloud classrooms" has become a new and promising teaching model. It uses the Internet to deliver high-quality educational resources and services to students in remote areas, realizing remote teaching and interaction.

This mode is centered around the concept of a cloud classroom. In the diagram, three core elements - "students", "teachers", and "quality expansion" - are intertwined, jointly supporting the framework of educational innovation in the "cloud classroom".

In terms of "teaching reform", the cloud classroom emphasizes problem-oriented learning and pursues a precise and efficient teaching model, dedicated to quality education. Through teacher-student and student-student evaluation mechanisms, teaching interaction is enhanced, promoting personalized and efficient education.

"Balanced development of high-quality education" is another highlight of the cloud classroom. It breaks geographical limitations and allows high-quality teacher resources to be widely spread. Precise teaching and personalized teaching strategies meet the needs of different students, while course sharing and a carefully selected test question bank provide students with abundant learning resources.

"Curriculum construction" focuses on learning experience and growth. The cloud classroom allows students to access learning resources anytime and anywhere through online teaching and research and an online homework platform, realizing comprehensive coverage and personalized customization of learning. The integration of autonomous learning and lifelong learning concepts further cultivates students' exploration spirit and continuous learning ability.

"Learning reform" reflects the cloud classroom's integration and optimal allocation of educational resources. Through precise learning and project-based learning models, students can make full use of various educational resources to achieve deepening and expansion of knowledge.

3.1. Construction and Resource Integration of Cloud Classroom Platform

The primary task in building a college student cloud classroom is to establish a stable, efficient, and user-friendly online volunteer teaching platform. In terms of platform construction, an online volunteer teaching platform integrating functions such as live teaching, recorded playback, and online interaction is needed. Attention should be paid to user experience and the operation process should be simplified. At the same time, integrate high-quality educational resources such as course videos and teaching courseware, and establish a volunteer database and student information database to provide strong support for volunteer teaching activities.

3.2. Volunteer Recruitment, Training, and Incentive Mechanism

Volunteers are the core of cloud classroom volunteer teaching activities. For recruitment, strict recruitment standards need to be formulated to select college students with professional qualities and teaching abilities to join. Recruitment is carried out through channels such as university cooperation and social media promotion to attract more aspiring young people to participate. At the same time, strengthen volunteer training to improve their teaching skills and psychological counseling abilities. In addition, establish an incentive mechanism to recognize outstanding volunteers, provide internship opportunities, and stimulate their enthusiasm and creativity.

3.3. Teaching Quality Monitoring and Evaluation System

The teaching quality monitoring and evaluation system is the key to ensuring the effectiveness of volunteer teaching. Clear teaching goals, plans, and evaluation standards should be formulated, and a multi-dimensional evaluation mechanism should be established to timely discover and improve problems in the volunteer teaching process. Use big data and artificial intelligence technologies to provide personalized learning suggestions and tutoring for students to improve learning efficiency and interest.

3.4. Cloud Classroom: Bridging Geographical Gaps and Building the Dream of Educational Equity

The cloud classroom uses the Internet platform to closely connect volunteers and students. As long as they have an Internet connection, no matter where they are, they can participate in volunteer teaching activities. This model not only provides a vast number of college students with the opportunity to engage in volunteer teaching, but also brings more diverse learning resources and opportunities to students in remote areas, playing a positive role in achieving the fair distribution of educational resources. More importantly, it also provides a platform for normal school students who are determined to devote themselves to rural education to understand the volunteer teaching environment and improve their teaching skills.

4. Realization Path of Quality Education in "Cloud" Classroom

4.1. Cloud Classroom: Empowering Rural Quality Education and Precisely Cultivating Future Stars

The cloud classroom platform cleverly combines online education and quality education, accurately meeting the needs of rural basic education. While ensuring the standardization of courses, this platform focuses on enhancing the innovative thinking and comprehensive qualities of rural students, integrating it into daily education in rural primary schools and fully stimulating individual development potential. To achieve individual development goals, college student volunteers need to deeply explore the laws of students' physical and mental development. Education has a profound impact on people's all-round development, and respecting the laws of physical and mental development is the cornerstone of promoting psychological development.

Rural education undertakes the mission of filling the spiritual void of rural youths in the context of the virtualization of rural culture, and is committed to nourishing students' souls in an all-round way and shaping sound personalities and rich emotions. Rural primary schools need to not only deepen traditional intellectual education but also become warm homes for the spiritual growth of rural youths. Quality education in cloud classrooms also pays attention to individualized teaching and values students' individual differences. Here, "individuality" covers the uniqueness shown in psychological activities such as cognition, emotion, and will. Individual differences in students' psychology are both the product and prerequisite of education. Quality education in cloud classrooms implements targeted teaching strategies by studying students' personalities, temperaments, and characters to ensure that each student can make progress. On the basis of knowledge education, the cloud classroom also promotes traditional cultures such as traditional Chinese culture, art, etc., making educational content more diverse and meeting students' individualized needs. In addition, the platform also integrates aesthetic education to promote the improvement of students' morality, ethics, and moral self-discipline[5].

4.2. Improve the Dual-Teacher Teaching Model and Strengthen the Effectiveness of Online Teaching

The dual-teacher teaching model of the cloud classroom is an innovative educational practice that combines the advantages of online cloud teachers and offline local teachers to jointly provide efficient teaching services for rural students. Online cloud teachers are responsible for providing high-quality teaching resources and professional teaching guidance. Through the online platform, they transmit rich and diverse teaching content to students and stimulate students' learning interests. Offline local teachers are responsible for classroom management and personalized tutoring of students. They are familiar with the actual situation of students and can provide more considerate and effective help. This dual-teacher teaching model not only strengthens the effectiveness of online teaching but also improves students' academic performance and comprehensive qualities. At the same time, it also promotes the deep integration of online and offline education, providing new ideas for the future development of rural education.

4.3. Establish a Learning Resource Database and Enrich Teaching Materials

The learning resource database of the cloud classroom is a platform that gathers rich teaching materials and provides convenient learning tools for students and teachers. This resource database includes various high-quality teaching courseware, videos, audios, pictures and other materials, covering the teaching content of various disciplines and grades. During collective lesson preparation, teaching resources for lesson preparation of various disciplines can be integrated to create course packages, etc. At the same time, the application of teaching platforms such as DingTalk, Tencent Meeting, and ClassIn makes teacher-student

interaction more convenient and the teaching process more intelligent. Students can choose appropriate learning materials from the resource database according to their learning needs and interests for autonomous learning and exploration. Teachers can use the materials in the resource database to create more diverse and interesting teaching courseware and improve the interactivity of the classroom. In addition, the learning resource database is constantly updated and improved to ensure that students and teachers can obtain the latest and most comprehensive teaching resources. This practice of establishing a learning resource database not only enriches teaching materials but also improves teaching effectiveness and learning efficiency.

4.4. "Cloud Classroom" Online Volunteer Teaching: An Innovative Practice Integrating Public Welfare and Education

The "cloud classroom" project deeply integrates the advantages of online and offline education, joins hands with public welfare institutions, and uses the expertise of normal school students to create a diversified learning platform for rural primary schools. The project formulates strict management systems to ensure the long-term and stable operation of online volunteer teaching activities. Volunteers are required to undertake teaching tasks on an academic year basis and ensure that at least one quality education course is offered every week to innovate the education model. At the basic education level in rural areas, the project strengthens the foundation of offline teaching and promotes the construction of multimedia classrooms to broaden the path of quality education. The "cloud classroom" not only provides practical opportunities for college students majoring in normal education but also becomes an important platform for them to teach and learn from each other and optimize teaching. During the implementation of the project, emphasis is placed on mutual respect and understanding between college student volunteers and rural primary school teachers, and timely communication is advocated to ensure smooth teaching. Volunteers need to deeply understand the situation of students, especially the needs of special children, adopt encouraging education, and use the functions of the online platform to stimulate students' enthusiasm. What is more worthy of mention is that while promoting rural quality education, the "cloud classroom" deeply integrates public welfare and education. Through public welfare activities such as online volunteer teaching and educational donations, it provides more learning opportunities for rural students and cultivates their sense of social responsibility and dedication. These activities not only improve students' comprehensive qualities but also promote social harmony and development. Through participating in public welfare activities, rural students understand the value of education more deeply, cherish learning opportunities, and strive to become useful talents.

5. Conclusion

With the rapid progress of Internet technology and the continuous innovation of big data technology, online education has quietly entered our world and is gradually becoming a solid supplement to traditional education. Quality education in "cloud classrooms", this emerging teaching model, through the perfect integration of Internet technology and big data technology, realizes the deep integration and wide sharing of educational resources, significantly improves teaching efficiency and quality, and injects vitality into the development of rural education.

As an indispensable part of the education cause, rural education plays a decisive role in promoting common prosperity and rural revitalization. Quality education in "cloud classrooms" is like a clear spring, bringing more precise support and personalized educational services to rural primary schools, strongly promoting the all-round development of rural students, and opening up new ideas and directions for the progress of rural education.

However, in the process of implementing quality education in "cloud classrooms", rural primary schools also need to carefully consider how to skillfully combine online education with offline education to achieve complementary advantages. Offline education brings rich sensory enjoyment to students with its intuitive and vivid teaching experience, while online education provides students with a vast knowledge world with its rich and diverse learning resources. Therefore, when implementing quality education in "cloud classrooms", we should adhere to the leading position of offline teaching, supplemented by the flexibility and convenience of online teaching, and make full use of Internet big data technology to promote the rural education cause to move forward steadily in a more equitable and excellent direction.

The innovation of Internet big data technology will surely give wings to the improvement of rural education quality, help urban and rural education achieve balanced development, and provide strong support for rural revitalization and social harmony and stability. Looking ahead, with the vigorous development of technology and informatization, educational resources in different regions will be more evenly distributed, and the education quality in rural areas will usher in a qualitative leap.

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