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Strategies for Promoting Educational Equity through Educational Informatization

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Abstract: With the advent of a new era, China's education development has entered a new stage, and the expectation for "quality education equity" is increasingly strong. Educational informatization, as an important force driving education modernization, plays a crucial role in promoting educational equity. Leveraging the advantages of information technology can break geographical limitations, widely disseminate high-quality educational resources, and provide a fair starting point for basic education. The popularization of online courses, distance education, and other forms allows students in remote areas to enjoy equal educational opportunities as urban students. Furthermore, educational informatization can achieve personalized teaching processes, meet diverse learning needs of students, and promote fairness in the educational process. However, influenced by objective factors, the process of advancing educational informatization also faces a series of practical obstacles. This paper, in line with the goal of promoting educational equity through educational informatization, analyzes the practical obstacles in promoting educational equity and explores practical paths to address these issues to further advance educational equity.

Keywords: Educational Informatization; Educational Equity; Innovative Strategies.

1. Introduction

With the rapid development of artificial intelligence technology, our society is gradually moving towards the era of intelligence, yet there still exist inequalities in the field of education. The "digital divide" in education has become a significant factor constraining the balanced development of China's education. Educational informatization, as an emerging educational approach, offers new possibilities for narrowing this gap. By leveraging the unique advantages of educational information, it can rapidly disseminate information, replicate high-quality teaching resources, and meet personalized needs, providing strong support for achieving educational equity. However, educational informatization also has various drawbacks, including uneven distribution of educational resources, differences in teaching environments, and varying levels of abilities among teachers and students, posing practical obstacles to promoting educational equity through educational informatization. This paper combines the current situation, addresses the problems encountered in promoting educational equity through educational informatization, proposes solutions, and strives to achieve educational equity as much as possible.

2. Objectives of Promoting Educational Equity through Educational Informatization

2.1. Advancing Educational Integration

The disparity in economic development between urban and rural areas has led to uneven distribution of educational resources, which is particularly evident in educational informatization. Children in major cities, due to their exposure to highly developed information environments, can easily access various high-tech educational media, leading to profound changes in their learning and lifestyles [1-3]. However, for children in remote mountainous areas, accessing basic computer equipment may be difficult, let alone using information technology for learning. This disparity is reflected not only in the allocation of hardware resources but also in teachers' information technology capabilities and teaching philosophies. Teachers in major cities have higher information literacy and can better utilize information technology for teaching innovation. In contrast, teachers in remote areas may lack relevant training and support, preventing them from fully leveraging the advantages of information technology in teaching. Therefore, in the process of promoting educational informatization, it is imperative to pay close attention to the urban-rural education gap. The government should promote equitable distribution of high-quality educational resources through policy guidance and resource integration, ensuring that every child can enjoy fair and quality education. Additionally, there is a need to enhance teachers' information technology training to improve their information literacy and teaching abilities, providing strong talent support for the development of educational informatization.

2.2. Sharing High-Quality Resources

In basic education, the gap between ordinary schools and key star schools is referred to as inter-school development imbalance, involving factors such as teaching staff, teaching resources, and student quality. To effectively narrow this gap, educational authorities are actively utilizing the power of educational information technology to promote the sharing and equitable distribution of high-quality resources. Specifically, through MOOC platforms, educational authorities invite renowned teachers to record high-quality online courses[4-5], enabling students in ordinary schools to access teaching resources at the same level as key star schools. This model breaks geographical restrictions, allowing "celebrity teachers" to truly enter the classrooms of ordinary schools, providing every student with the opportunity to receive quality education. Additionally, using micro-video technology, teachers can observe the teaching methods of renowned teachers, learning from their advanced teaching methods and experiences to improve their own teaching abilities. This interactive learning mode helps enhance

teachers' teaching levels, promote innovation and reform in education and teaching methods, achieve equitable distribution of high-quality educational resources, and create a fair and quality educational environment for every student.

2.3. Narrowing Group and Individual Disparities

Table 1. Strategies for Narrowing Group and Individual Disparities through Information Technology

Special groups	Information technology application strategy
Children of migrant workers	Provide online education platform, convenient to learn anytime and anywhere
	The "Home Education" program was implemented to provide counseling for migrant students
Ethnic minorities	Development of bilingual or multilingual teaching resources
	Minority culture is displayed through online classes to enhance cultural confidence
	We have implemented "dedicated classrooms" to ensure that ethnic minority students have access to quality educational resources
Left-behind children	Remote video technology is used to strengthen the communication between left-behind children and their parents
	Online education support will be provided to ensure that left-behind children receive basic education
	A "one-to-one" counseling program was implemented to provide personalized counseling for left-behind children

Group and individual differences are realities that cannot be ignored in the field of education, stemming from each person's unique growth environment, educational background, and thinking patterns. In the process of promoting satisfactory basic education for the people, it is necessary to consider the needs of the majority of students. Groups such as children of migrant workers, ethnic minorities, left-behind children, and disabled children may encounter more difficulties in receiving education. To narrow the gap between these special students and others, educational authorities should actively utilize information technology to break geographical and resource limitations, as detailed in Table 1. For example, innovative methods such as "teaching delivery" and "teleclassrooms" can directly deliver high-quality educational resources to these special groups of students. Educational authorities can also develop personalized education plans based on the specific circumstances of each student, ensuring that each student receives education tailored to their needs. Such practices help reduce exclusion of marginalized groups, effectively narrow individual differences, and enable every child to receive education in a fair environment, realizing self-growth and development.

3. Realistic Challenges in Promoting Educational Equity through Education Informatization

3.1. Challenges in Teaching Environment

The key elements of the teaching environment include both hardware and software components. Regarding hardware, it covers various devices ensuring smooth online teaching, such as network access equipment, dedicated online teaching terminals, and multimedia classrooms[6-7]. In terms of software, it encompasses various online teaching platforms, educational software, auxiliary tools, and necessary support services. Despite initiatives like the "Modern Distance Education Project for Rural Primary and Secondary Schools" and "Full Coverage of Digital Education Resources for Teaching Sites," which laid the foundation for online education in rural areas, rural regions still face numerous challenges in response to the growing societal demand for online education. Due to lagging infrastructure, rural areas significantly lag behind urban areas in terms of network coverage and stability, leading to difficulties for many teachers and students in attending online classes. Moreover, economic pressures related to personal purchases of teaching terminals, coupled with unstable network signals in remote areas, make the implementation of online education particularly challenging in rural regions.

3.2. Challenges in Educational Resources

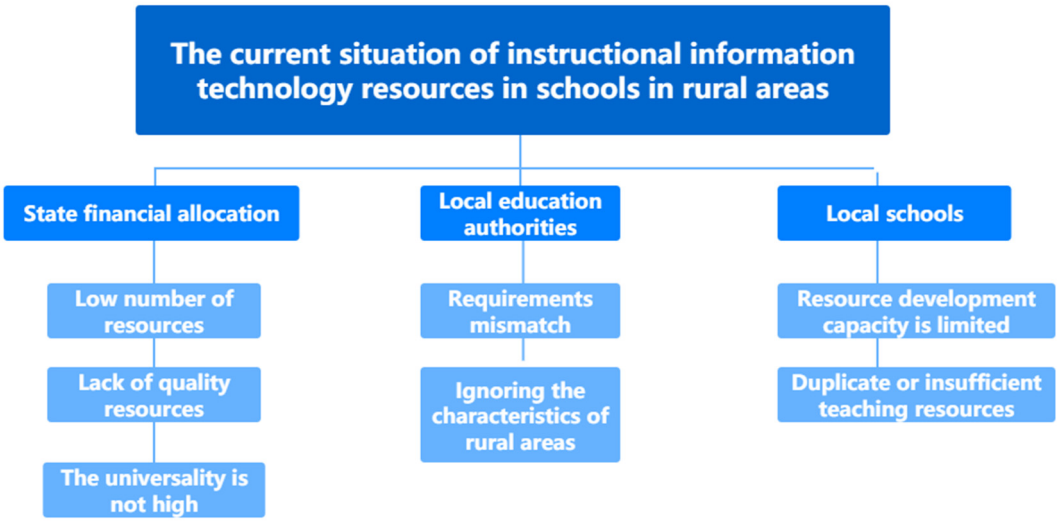

Figure 1. The current situation of instructional information technology resources in schools in rural areas

The current teaching information technology resources in rural schools mainly rely on national financial allocations and support from local education authorities. This includes free digital teaching resources, introduced high-quality corporate resources, and locally developed school-based course resources. Although these resources have to some extent enhanced the accessibility of teaching resources in rural schools, the quantity and quality of digital resources are still insufficient (Figure 1), particularly in terms of high-quality resources. Many high-quality digital teaching resources currently available often stem from teaching practices of urban educators, which may not align with the actual needs of rural students. Additionally, these resources often overlook the specificity of rural areas and the actual developmental needs of students, posing various challenges for rural teachers in their usage.

3.3. Challenges in Practical Application

Practical application refers to teachers actively utilizing information technology in daily teaching to promote educational innovation under the concept of "Internet Plus Education," facilitating personalized student development and contributing to educational equity [8-9]. However, in current teaching practices, teachers face three major challenges (Table 2). Firstly, due to heavy daily teaching tasks, teachers lack the initiative to deeply learn and apply information technology, finding it difficult to allocate time and energy to master and use digital teaching methods. Secondly, some teachers, when attempting online teaching, lack the design and implementation skills for online teaching, resulting in less than ideal teaching outcomes. They often simply transfer traditional teaching content to the internet, neglecting the interactivity and flexibility of online teaching, resulting in monotonous classes where students struggle to focus, significantly reducing the effectiveness of teaching. Lastly, many teachers fail to truly understand and grasp the essence and principles of online teaching and the concept of online education. During online live classes, they tend to directly adopt traditional teaching methods and approaches, failing to fully utilize the advantages of online teaching, thus failing to achieve the desired outcomes.

Table 2. Dilemmas in the application of informatization teaching practice

Category of distress	Potential impact
Lack of motivation to learn information technology	The slow progress of information-based teaching affects the improvement of teaching quality.
	Teachers' personal career development is limited, and it is difficult to adapt to the trend of informationized education.
Lack of online instructional design and implementation skills	Online teaching is not effective and student participation is low.
	The lack of effective communication between teachers and students affects the teaching effect.
Do not really understand the essence of online teaching	Online courses lack pertinence and effectiveness, and it is difficult to meet the personalized needs of students.
	The interaction and communication between teachers and students are limited, which affects the teaching effect and learning experience.

4. Paths to Promoting Educational Equity through Education Informatization

4.1. Increase Infrastructure Investment

In the current educational environment, many areas in our country still need to strengthen their educational infrastructure. Therefore, increasing investment in campus hardware and software has become an urgent need. This is not only crucial for improving educational quality but also an essential step in promoting the construction of school informationization. Through comprehensive planning and upgrading of educational teaching equipment, an efficient and practical networked information system can be established to provide strong support for the educational and teaching management of primary and secondary school students. Additionally, improving infrastructure construction will promote the equitable distribution of educational resources, ensuring that every student can access high-quality educational resources [10]. Education authorities should cooperate closely with schools to jointly improve campus infrastructure, ensuring that schools can efficiently and orderly carry out educational and teaching work in the context of modern information management.

4.2. Strengthening the Construction of Teacher Teams

In the context of educational informatization, the informationized education and teaching literacy of teacher teams have become the key to promoting educational development. Especially in rural areas, the improvement of the teaching staff is even more urgent. Education authorities should fully utilize remote online training methods to provide convenient and efficient learning platforms for rural teachers, allowing them to access the latest informationized education concepts and technologies. Additionally, teachers themselves need to actively select and integrate informationized education and teaching resources, ensuring that the selected materials not only match the characteristics of the subject but also meet the actual needs of students. Schools should encourage teachers to integrate information technology into daily teaching, exploring teaching models suitable for their own schools and classes. At the same time, establishing a comprehensive evaluation system for teachers' overall quality, incorporating the application of modern educational technology and its results, will incentivize teachers to continuously improve their educational technology application levels, thereby promoting the deep development of educational informatization construction.

4.3. Establish an Informationized Education Framework

The construction of educational informatization is indeed a massive and complex systematic project involving multiple levels and departments, requiring joint efforts from all parties to form a strong collaborative force. Firstly, education authorities should play a leading role in formulating specific plans and schemes, as well as providing necessary policy support and financial guarantees. Schools should implement specific measures for informationized teaching based on their actual situations, strengthening teacher training and

equipment updates. Secondly, by building a rich online teaching resource library, diverse learning materials and tools should be provided to teachers and students, promoting teaching model innovation and teaching method improvement[11]. Furthermore, strengthening campus network infrastructure construction, improving network bandwidth and stability, and ensuring that teachers and students can smoothly access online resources and engage in online learning. Lastly, leadership groups should regularly convene meetings to study and resolve difficulties and problems encountered in their work, ensuring the smooth progress of educational informatization construction.

4.4. Close Collaboration of Various Resources

In the era of educational informatization, families, schools, and society should collaborate closely to build a comprehensive and perfect educational platform, thereby meeting the personalized learning needs of students and promoting effective integration among the three parties. Through this platform, teachers and students can fully utilize information technology to break through time and space constraints, achieve teaching and learning anytime and anywhere, greatly enhancing educational efficiency. School administrators can utilize advanced network technology to monitor the online environment, filter out harmful information, ensure that students receive healthy and positive content, and guide them to form correct values and outlooks on life. Parents, teachers, and students can also achieve convenient communication through this unified platform, forming a networked mode of communication. Through such communication, mutual understanding and trust can be strengthened, promoting the healthy growth of students collectively.

5. Conclusion

With the advent of the era of educational informatization, China's educational informatization construction has entered a new stage, and the application of information technology in teaching is becoming increasingly widespread, playing a crucial role in improving educational quality and efficiency. However, while informationized teaching brings convenience and efficiency, it is also a double-edged sword, and its potential challenges cannot be ignored. On the one hand, educational informatization greatly promotes the sharing of high-quality educational resources. Through the internet and various teaching platforms, high-quality teaching content and experiences can be quickly disseminated nationwide and even globally, breaking through geographical and time constraints, allowing more students to access high-quality educational resources. On the other hand, informationized teaching may exacerbate the "digital divide." In today's rapidly developing information technology, the gap in information technology levels between different regions and schools remains significant. Some schools in remote or economically underdeveloped areas may not be able to enjoy the benefits of informationized teaching due to a lack of necessary hardware and software support, thus further widening the educational gap with developed areas. Therefore, while developing informationized educational teaching methods, more attention should also be paid to the development concept of educational equity. From this perspective, planning, monitoring, adjusting, and reflecting on educational informatization should be carried out to promote educational equity.

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