Development Effectiveness, Question and Strategy Research on the Education Informationization of Primary and Secondary Schools in Lijiang's Countryside

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Abstract: With the deep promotion of the national "Three Links Two Platforms" and the "Comprehensively Improve the Basic Conditions for Compulsory Education in Poor Areas "of Yunnan province, the education informationization in Lijiang has been greatly developed. "Internet + Education" has gradually become the dominant mode of education informationization promotion. It should not be underestimated in promoting the balanced development of the county area and strengthening the construction of new socialist countryside. However, there are problems still facing the information development of small and medium-sized schools in rural areas, including unsatisfactory education informationization equipment configuration, lack of regional quality resources, lack of professional teams and coordination etc. The resource coverage of network digital education and the information teaching faces many difficulties. Based on the analysis on the basic information infrastructure of rural primary and secondary schools in Lijiang, this paper proposes the establishment of a government-led diversification investment mechanism, hopefully improving the improvement on digital education resources construction, and the construction of demonstration areas and schools, and other countermeasures that can help the rural primary and secondary schools digital education resources construction and development of the project to promote the balanced development of education.

1. Introduction

According to the latest statistics of October 2017, Lijiang has 576 schools (including 45 teaching points) which include 9 rural primaries and secondary schools, and 45 teaching points.

Since the 12th five-year plan period, the state has increased its commitment to the education informationization. Through the implementation of projects such as "Modern Distance Education Project in Rural Primary and Middle Schools", "Weak School Reform Plan" and" comprehensively improves the basic conditions for compulsory education in poor areas ", Lijiang has made great improvement on education informationization equipment in rural primary and secondary schools. Until October 2017, 462 of the 576 schools at all level were connected to the Internet, with an access rate of 80.2%. It is slightly higher than the provincial average (the provincial average is 79%). There are 4,994 classes of primary and secondary schools of Lijiang, with a total of 2,970 classes and 60% coverage. The bandwidth of the city is up to 200M, and the minimum is 2M. The number of primary and middle school students in the city is 150,000, and in the ratio of computer to students, the primary school students are 15:1, the junior high school students are 11:1, and the high school students are 13:1. The penetration rate of multimedia classrooms in the city's public schools is 59.9%. Education informationization infrastructure and information resources have been widely used in education teaching activities.

2. Questions on the Education Informationization on Primary and Secondary Schools in Lijiang's Countryside

2.1 Unsatisfactory education informationization equipment configuration of small and medium-sized schools in rural area.

It is the foundation of digital education to configure the required information multimedia equipment. The central question is whether the network is unimpeded. If not, high-quality education resources will not be able to achieve the sharing effect. At present, the network accesses rate of small and medium-sized schools in Lijiang is lower than the provincial average. Network bandwidth can only basically meet the school's daily office needs, and cannot satisfy the teaching requirement. The main performance are: 57 schools with the Internet access bandwidth of less than 4M in the whole city, 179 schools between 4M and 10M, and the bandwidth is greater than 10mb in 343 schools, greater than100M are 82 schools. There is no campus network of small and medium-sized schools in the whole city's countryside. Most remote schools have a wide range of multimedia equipment. Some of the multimedia devices distributed over 2011 have been scrapped. The source of multimedia equipment is different as well as the using problems. There are also some areas did not use the Internet based on the transportation is difficult that the school has to pay for the laying of the lines and maintenance costs. These problems seriously impede the construction of digital education resources. Then, in the case of good installation of multimedia equipment and unblocked network in some schools, it is also facing problems to make full use of education resources. For example, when using the demonstration course, the demonstration course was neither online nor downloadable that had to be registered, and teachers even had no idea how to use it. It can be seen that the new resources of education are not properly applied. In the end, there is the question on funding. The school multimedia electricity bill and the net fee needs the school to bear. Therefore, some schools' information education is in the form, which is also an important factor that some teaching points cannot install broadband. These problems seriously impede the construction of digital education resources.

2.2 Lack of regional quality education resources.

At present, the application of high quality education resources in Lijiang is mainly achieved through the introduction to national resources and sharing among provincial platform resources. The education application based on network is gradually carried out in urban and rural schools in this city. But the application is not ideal. According to incomplete statistics, only 50% teachers in rural primary and secondary schools can use the technology to implement classroom teaching. The use of information resources in teaching hours account for 40% of the total hours. Since 2014, the Ministry for National Education has implemented the "one teacher, one excellent course, one class, one famous teacher" quality information course evaluation activity. Until now, there are few teachers obtain quality courses for primary and secondary schools in our city. Otherwise, there is no public service platform for education resources in our city, and we have not form the scientific system of resource content construction. The standard of practical application is still missing, and the effectiveness, interactivity and integration of digital education resources are not enough. The mechanism of quality resource sharing and access evaluation has not yet formed, which restricts the application of the city's digital education resources.

2.3 Lack of professional team and coordination.

First of all, there is a shortage of information professionals in rural primary and secondary schools in our city. Most of the school education informationization workers are part-time, which greatly affects the normal development of all kinds of work. Most of the information technology personnel of the school is mostly part-time workers, who are neither competent nor devoted to the application of education informationization. Whenever the school information equipment meets the maintenance problem, the school can only report to the education bureau to appoint the relevant technical personnel to handle, or stop using it. Information education equipment has long lacked the

reference to professional talents, so it cannot guarantee the timely, effective and full use of education resources in education teaching process. Although in recent years, our city has increased the teacher education technical capacity building especially the rural area teacher education informationization application training strength. Education informationization professionals, especially in rural areas, are still seriously understaffed. It still has a long way to go to cultivate high-quality teachers and professional technical teams that adapt to the reform and development of education in the information age.

In the second place, teachers in rural primary and secondary schools lack the professional skills and quality of education application. Due to the limitation of geographical environment, rural primary and secondary schools generally have problems such as the aging of teachers, low degree of education and low information literacy. Most teachers lack the basic information technology ability and cannot meet the subject foundation corresponding to information teaching. They lack enthusiasm and interest in information teaching, and are not active enough to learn new things, and pay more attention to teaching in teaching. At the same time, teachers in rural primary and secondary schools have unreasonable structure, more Chinese and mathematics teachers, while teachers in English, music, art and information technology are severely lacking.

Finally, the backward concept of education has become the key to the development of information-based education. Although some rural schools have started to use information technology and have offered information technology courses, there are still under the "technology" and "traditional" ways. The teaching level is still in the traditional teaching mode, not fully reflect the characteristics of education informationization. The principal of most rural schools lacks information leadership, and education informationization ecological environment has not been formed.

3. Education Informationization Promotion Strategy of Rural Primary School in Lijiang

3.1 To promote the construction of education school broadband network.

By the end of 2018, according to the state policy and strategy development in Yunnan province and based on the unified planning, unified technical standard and unified construction mode, we build a basic education stage cover all schools and education management departments at all levels. It can support mobile learning, which has a dedicated network channel. It is a manageable high-speed network of education services--the backbone network bandwidth will be up to 10 million, 000 megabytes to schools, 100 megabytes to class full fiber education networks. Set up a network environment for all kinds of education teaching applications. The school has the campus network, and uses the 4G signal to realize the conditional school wireless coverage. Realize efficient interconnection between city, county (district) and school. We will comprehensively optimize the rural education technology and equipment environment, and further promote the implementation of the "Comprehensively Improve the Basic Conditions for Compulsory Education in Poor Areas" in Yunnan province (2014-2018).

3.2 To promote the construction of high-quality resource platforms.

Firstly, to build our municipal digital education resource public service platform. The public service platform of the digital education resources in Lijiang was completed by means of government investment or cooperation between government and enterprises. Construction of education informationization integrated service platform, which provides network access, resource application, education management, teaching support and teaching exchange for the small and medium-sized schools in the whole city. To provide teachers and students with effective support and teaching tools, collaborative communication tools and knowledge visualization tools to reduce the burden of teaching and learning and improve teaching quality.

Secondly, we will achieve high quality teaching resources, develop mutual assistance among urban and rural teachers, and share outstanding teaching resources. With the level model of city, county (district) and school, we will gradually improve the sharing and running service mechanism

of digital education resources in our city. The application of education will be widely promoted, various interactive teaching and research activities are carried out based on the network.

Thirdly, deepen education resources to move to the countryside. The advanced education concept and high-quality education resources are sent to rural areas in time. At the same time, we will further improve the education cooperation alliance between urban and rural areas, improve the support mechanism, innovate the mode of assistance, and improve the benefits of assistance. Promote the integration of information technology and high-quality digital education resources in teaching process. We will vigorously organize and carry out experiments on teaching reform based on the network. Explore "mail class", "inquiry learning", "the teacher lecture hall", "famous network classroom", "network collaborative research between urban and rural areas", "collaborative research across the LAN" and other network teaching application modes, promote reform and innovation of traditional teaching mode.

3.3 To set up demonstration first and conduct mutual exploration development.

In May, 2017, Yunnan provincial education department announced the list of pilot demonstration areas and schools for education informatization. Gucheng district of our city is listed as a pilot demonstration area. Yulong Baisha Middle School, Yulong Jiuhe Middle School and other agricultural village schools are listed as pilot demonstration schools. Through the construction of demonstration areas and demonstration schools, we will build an equal and efficient school informatization support environment, and continuously improve the level of information technology in various fields of education, which is effective and innovative. Explore how to rely on new technology, new mode to build a new quality education ecological system, in campus environment, school management, teachers team, teaching system, teaching mode, education scientific research aspects such as effective use of new technology New technologies are effectively utilized in campus environment, school management, teachers' team, teaching system, teaching mode, education research, etc. Promote education innovation, deepen experimental research, improve relevant standards and specifications, and form regional scale promotion and application plan. To guide the construction and application of education in primary and secondary schools, and promote the in-depth development of education informatization in our city. Cultivate an expert teacher and technical team. We will continue to train teachers in the application of information technology innovation, and cultivate expert teachers with modern education thinking and modern education wisdom and proficient in modern education technology. Cultivate master education rules, innovative thinking, and skilled technical personnel. To foster the management of education law, service awareness and post capacity, and promote the sustainable development of regional education informatization.

3.4 To intensify the training of teachers' information technology applications.

Firstly, implementation of the school information leadership training project. In addition to send teachers to participate in national and provincial school informationization leadership training, start the municipal informatization of small and medium-sized school leadership training project, to the relevant person in charge of school leadership and school information, improve the ability of school leaders in the informatization environment planning, decision-making ability, ability of organization, implementation, evaluation and communication ability, promote the competitiveness of the school age and comprehensive strength.

Secondly, to deepen the training of teacher information application ability. According to the work arrangement of teaching resources for the whole "and the need of teaching reform, in order to promote information technology in immersive applications with an emphasis in the process of teaching, synchronization to carry out the teachers' information technology and digital education resources application ability training; Pilot application teachers study space, carry out the special experiment of individual independent selection, teacher network research, teaching interaction and so on, and summarize the experience in time to better promote the application.

3.5 To establish the investment guarantee mechanism of education informationization.

To give play to the main role of municipal and county (district) governments in the investment of education informatization. The municipal and county (district) should formulate policy measures such as education informationization construction and operation maintenance guarantee fund standard. In education input, we will increase the tilt of education informationization and guarantee the development demand of education informatization. Strengthen the financial support for the informatization of education in rural and remote areas. We will encourage enterprises and social forces to invest and participate in the information construction and education services, and form a multi-channel investment guarantee mechanism to raise education informationization resources.

Strengthen the inspection and supervision of education informatization. The education administration department of the municipal and county (district) should attach great importance to education informatization. The relevant index system of education informationization is included in the government education supervision and evaluation system, and the inspection and supervision is strengthened. The implementation units of education informationization and schools at all levels should improve the relevant system of promoting education informatization, and establish corresponding inspection and supervision system.

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