

Current Status and Optimization Path of Basic Education Resource Allocation in Ethnic Areas of Guizhou — A Case Study of Qiannan Buyi and Miao Autonomous Prefecture

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Abstract: Education is the foundation for the renaissance of ethnic groups. As an important means to achieve educational equity and basic human rights, the rational allocation of basic education resources is a necessary requirement to address resource scarcity. Due to various factors such as geography, economy, and history, the overall level of educational development in ethnic areas of Guizhou is relatively low, with significant gaps compared to Han areas and the national average. Rational allocation of educational resources can help change the underdeveloped appearance of remote rural areas in Guizhou, providing continuous and solid intellectual support for the rural revitalization and socio-economic development of ethnic regions. This paper utilizes methods such as questionnaire surveys and on-site interviews to obtain data, summarizes the problems in the process of basic education resource allocation in ethnic areas of Guizhou, and provides targeted optimization paths and strategies. The aim is to provide policy reference and ensure the increasingly rational allocation of basic education resources in ethnic areas of Guizhou, facilitating the transformation from quantitative expansion to qualitative improvement.

Keywords: Ethnic areas; Basic education; Resource allocation; Optimization path

1. Introduction

The 20th CPC National Congress pointed out, "We must give priority to education and accelerate the development of an education powerhouse, provide quality education that satisfies the people, develop education with a people-centered approach, build a high-quality education system, promote quality-oriented education, promote educational equity, accelerate the high-quality and balanced development of compulsory education in urban and rural areas, and optimize the allocation of regional educational resources." [1] This reflects the importance the country attaches to the cause of education. However, there still exists a certain gap in the development of education and educational level in ethnic areas of Guizhou compared to other regions. Only by clearly understanding the causes of existing problems can we better allocate educational resources to promote sustainable development of education, culture, and economy in the local area, and lay a solid foundation for the effective connection between rural revitalization, poverty alleviation, and achieving common prosperity.

2. Significance of Rational Allocation of Basic Education Resources in Ethnic Areas of Guizhou

There has always been a difference in the quality of basic education between urban and rural areas. Rational allocation of basic education resources helps schools at all levels provide education in relatively favorable conditions, implement the educational policies of China, improve the moral and cultural qualities of students in the region, and cultivate outstanding talents for the country. It contributes to narrowing the gap in the quality of basic education between urban and rural areas. Different types of schools have different financial, material, and human resources, leading to insufficient educational resources in some schools and relatively abundant resources in others. Therefore, adjusting the structure of the education sector and allocating basic education resources in a reasonable manner can improve the quality of education, enhance the efficiency of resource utilization, and increase the utilization rate of educational resources. [2] The current contradiction between education demand and supply is prominent. Therefore, under certain conditions of education

demand and supply, the most effective way to improve education efficiency and achieve overall fairness in education is through the rational utilization of existing resources. Rational allocation of educational resources contributes to social fairness and justice, narrowing the gap between the rich and the poor, and curbing the trend of social polarization.[3] It helps guarantee the right to education for learners and promotes educational equity.[4] Furthermore, it plays a crucial role in supporting the strategies of revitalizing the country through science and education, building a strong talent pool, sustainable development, and providing important intellectual support for national economic and social development.

3. Current Status, Existing Problems, and Analysis of Reason in the Rational Allocation of Basic Education Resources in Ethnic Areas of Guizhou

3.1. Current Status of Basic Education Resource Allocation in Qiannan Prefecture

The current status of basic education resource allocation in Qiannan Prefecture mainly includes the allocation of financial resources, human resources, and material resources. The relevant data is obtained from the "Statistical Bulletin of Qiannan Prefecture's National Economy and Social Development". The specific situation is summarized as follows.

3.1.1. Allocation of Financial Resources

The allocation of financial resources for basic education in Qiannan Prefecture is shown in Table 1.

Table 1: Financial Status of Qiannan Prefecture in 2021

Indicator	Absolute Value (billion yuan)	Year-on-Year Growth (%)
Total Fiscal Revenue	209.6	3.3
General Public Budget Revenue	115.04	3.6
General Public Budget Expenditure	446.52	1.0
Education Expenditure	92.5	1.2

Data source: Statistical Bulletin of Qiannan Prefecture's National Economy and Social Development (2021)

3.1.2. Allocation of Human Resources

The allocation of human resources for basic education in Qiannan Prefecture is presented in Table 2.

Table 2: Development of Education in Qiannan Prefecture in 2021

Category	Number of Schools	Number of Students	Enrollment	Graduates	Number of Staff	Full-time Teachers
Primary Schools	665	348885	54881	52773	20012	17255
Junior High Schools	119	152623	53836	49454	12284	10744
Senior High Schools	37	81758	27857	26699	7489	6336

Data source: Statistical Bulletin of Qiannan Prefecture's National Economy and Social Development (2021)

3.1.3. Allocation of Material Resources

According to the "14th Five-Year Plan for the Development of Education in Qiannan Prefecture," significant efforts have been made to improve the educational conditions in Qiannan Prefecture. There has been an increasing investment and guarantee in terms of resources. Nearly 10 billion yuan has been invested, focusing on comprehensive improvement of school conditions and addressing challenges in senior high schools. A total of 1,859 new construction, renovation, and expansion projects have been implemented, particularly strengthening the construction of schools in rural areas. As a result, the school conditions in various levels and types of schools have significantly improved, alleviating issues such as difficulty in enrollment, high enrollment costs, and overcrowded classrooms. Education in various categories has achieved remarkable progress, accomplishing the goal of basic balance in compulsory education two years ahead of schedule, as well as achieving the goal of universalizing 15 years of education. Moreover, breakthroughs have been made in the establishment

of provincial demonstration high schools in each county and the zero breakthrough of first-class provincial demonstration high schools.

3.2. Questionnaire Survey

In order to better understand the allocation of basic education resources in Qiannan Bouyei and Miao Autonomous Prefecture (referred to as Qiannan Prefecture), I conducted a questionnaire survey and interviews with secondary school political teachers during my educational internship.

The questionnaire was distributed to and completed by students and teachers in the first grade of the 10th Middle School in Duyun City. Students in this grade were selected as the survey subjects because they have a deeper understanding of the allocation of basic education resources and are considered representative. The questionnaire consisted of 27 questions divided into two parts. The first part collected information about the respondents, including gender, education level, teaching experience, and occupation. The second part focused on the main content of the survey, including education funding, disparities in educational facilities, support from the government and various social forces, and the stability of the teaching staff. The survey adopted a random sampling method, and a total of 300 questionnaires were distributed to students and teachers in the first grade of the 10th Middle School. A total of 290 questionnaires were collected, resulting in a response rate of 96.6%.

3.3. Issues with the Allocation of Basic Education Resources in Ethnic Areas of Guizhou

3.3.1. Insufficient Investment in Education Funding

In terms of education expenditure, in 2020, the total education expenditure in Qiannan Prefecture ranked 7th in Guizhou Province and 5th in the city. However, the education expenditure in Qiannan Prefecture was significantly smaller compared to the highest expenditure in Bijie City, with a difference of 7.868 billion yuan, ranking the lowest in the city. The proportion of education expenditure was also relatively low at 2.07%, ranking lower in terms of proportion. Additionally, the coefficient of variation for education expenditure in the entire prefecture was 0.34, indicating significant disparities in education investment among different cities. The sources of education funding include not only government appropriations but also contributions from social forces and individuals, which can help alleviate the financial constraints on education. However, the survey conducted on the support of various social forces for the education sector in ethnic areas of Qiannan Prefecture revealed that the proportion of those considering the support to be "general" ranked first, indicating insufficient support from various social forces for education in minority areas. In conclusion, the analysis of the data from the table indicates a severe lack of investment in education funding in Qiannan Prefecture. It is crucial for the government to increase its investment in education funding and give this issue due attention. Please refer to Table 3 for a summary of the findings.

Table 3: Education Expenditure in Guizhou Province (2020) (Unit: billion yuan)

Region	General Budget Expenditure Coefficient of Variation	Education Expenditure	Education Expenditure Coefficient of Variation	Education Expenditure Ranking	Education Expenditure Proportion	Proportion Coefficient of Variation	Proportion Ranking
Total		967.04			0.211		
Guiyang City	0.34	132.22	0.34	3	0.195	0.07	8
Liupanshui City		76		8	0.235		1
Zunyi City		152.82		2	0.202		7
Anshun City		57.21		9	0.193		9
Bijie City		170.05		1	0.227		3
Tongren City		98.76		4	0.215		4
Qianxinan Prefecture		93.97		6	0.230		2
Qiandongnan Prefecture		94.64		5	0.204		6
Qiannan Prefecture		91.37		7	0.207		5

Data source: "Guizhou Statistical Yearbook" (2021)

3.3.2. Unreasonable Allocation of Teacher Resources

Based on the research and investigation of relevant data, it is believed that there are issues with the allocation of teacher resources in Qiannan Prefecture. The analysis will be conducted from three aspects: student-teacher ratio, stability of the teacher workforce, and educational qualifications.

Firstly, let's examine the student-teacher ratio, which is an important indicator of whether teacher resources are reasonably distributed in an area. Generally, there is an inverse relationship between the student-teacher ratio and the allocation of educational resources. A higher student-teacher ratio means that students receive less teacher input time, while a lower student-teacher ratio means that students receive more teacher input time (refer to Table 4).

Table 4: Student-Teacher Ratio in Qiannan Prefecture from 2019 to 2021

Year	Full-time Teachers			Student-Teacher Ratio (Teacher number = 1)		
	Primary Schools	Middle Schools	High Schools	Primary Schools	Middle Schools	High Schools
2019	17402	10370	5738	19.2	14.1	14.5
2020	18441	10329	5993	18.8	14.3	13.7
2021	17255	10744	6336	20.2	14.2	12.9

Data source: "Qiannan Statistical Yearbook" (2019-2021)

Based on Table 4, we can draw the following conclusions: The number of full-time teachers in primary schools in Qiannan Prefecture has been decreasing up until 2021, while the increase in the number of full-time teachers in middle and high schools has been relatively small.

According to the Ministry of Education's "Opinions on Formulating Standards for the Staffing of Primary and Secondary School Teachers" (2014), the unified student-teacher ratio standards for urban and rural areas are 19:1 for primary schools, 13.5:1 for middle schools, and 12.5:1 for high schools[5]. Referring to these student-teacher ratio standards and analyzing the student-teacher ratios in Qiannan Prefecture from 2019 to 2021, it can be observed that the student-teacher ratios in primary, middle, and high schools in Qiannan Prefecture have exceeded the standards set by the Ministry of Education. This indicates that each teacher has to handle a relatively large number of students, leading to a heavier workload for teachers and suggesting that the allocation of teacher resources is unreasonable.

Furthermore, the stability of the school's teacher workforce also reflects whether the allocation of teacher resources in an area is reasonable. The teacher workforce in Qiannan Prefecture is highly unstable, with a significant proportion of respondents considering it extremely unstable, followed by those who think it is somewhat unstable. The proportion of respondents who perceive it as very stable or basically stable is relatively small. This indicates that the teacher workforce in schools in Qiannan Prefecture is highly unstable, which indirectly suggests that the allocation of teacher resources is unreasonable.

Lastly, the educational level of an area can significantly reflect whether the allocation of teacher resources is reasonable. If the allocation of teacher resources in an area is reasonable, the educational level of that area would be relatively high, with smaller disparities compared to other provinces and cities. However, Qiannan Prefecture exhibits significant differences in educational levels compared to other regions in Guizhou Province, with only a small proportion having no differences. Therefore, this indicates that there are issues with the allocation of teacher resources in Qiannan Prefecture.

3.3.3. Unequal Distribution of Teaching Hardware Infrastructure

The allocation of teaching hardware infrastructure is also one of the important criteria for evaluating the allocation of basic educational resources in a school. The following is an analysis of the data obtained from a survey questionnaire conducted in the ethnic region of Qiannan Prefecture. According to the satisfaction survey on school hardware facilities in Qiannan Prefecture, overall, there is a relatively large proportion of respondents who hold a positive or highly positive attitude towards the school's hardware facilities. However, more than half of the respondents hold a neutral attitude. When investigating the disparity in teaching hardware facilities among schools, the largest proportion of respondents believe that there is a significant difference in teaching hardware facilities. This is followed by those who perceive some differences, then those who feel the differences are somewhat similar, and finally those who indicate a lack of understanding. This indicates that there are significant differences in teaching hardware facilities among different schools. The distribution of school hardware facilities is uneven, and there exists a certain gap between

the hardware facilities of different schools, which needs further improvement. In conclusion, based on the analysis of relevant data, surveys, and interviews with teachers, it is evident that Qiannan Prefecture faces issues such as unreasonable allocation of teacher resources, insufficient investment in education funding, and uneven distribution of teaching hardware infrastructure.

3.4. Analysis of the Causes of Problems in the Allocation of Basic Education Resources in Ethnic Regions of Guizhou

In terms of the overall allocation of basic education resources in Qiannan Prefecture, there have been certain achievements in recent years. However, there are still certain shortcomings in the allocation of basic education resources in certain aspects. The specific reasons are as follows:

3.4.1. Education Funding

Firstly, there is insufficient awareness of responsibility among government departments. The provincial-level and county-level governments have not effectively fulfilled their responsibilities as the main body for educational development, nor have they implemented the work responsibilities of government departments at all levels, schools, principals, homeroom teachers, and teachers, especially regarding the requirements for financial support. Secondly, according to the analysis of questionnaire surveys, there is relatively little support from other social forces in terms of education funding in Qiannan Prefecture, indicating insufficient efforts by the relevant government in this regard. Finally, according to the 2021 Qiannan Prefecture Statistical Bulletin on National Economic and Social Development, although the economic situation in Qiannan Prefecture has gradually improved from 2019 to 2021, it is still relatively low compared to 2017 and 2018. The education funding provided by the finance department is also limited, leading to inadequate investment in education funds.

3.4.2. Teacher Resources

Firstly, due to the insufficient tilt of favorable teacher policies towards schools in remote and impoverished areas by government departments, the attractiveness of high-quality teachers to these schools is not significant, resulting in significant disparities in teacher resources between regions. Secondly, government departments lack targeted training for high-quality teachers in rural schools, resulting in a generally lower level of teacher quality in rural schools. Lastly, through teacher interviews, it was found that a large proportion of teachers believe that only schools in urban areas or those with better conditions have greater opportunities for career advancement. In contrast, remote rural areas not only have inconvenient transportation and living conditions but also offer limited career advancement opportunities. As a result, a significant number of teachers are unwilling to stay and teach in remote rural areas, leading to an unstable teacher workforce and a large gap in the quality of teachers between urban and rural areas.

3.4.3. Teaching Hardware Infrastructure

According to the "Self-Assessment Report on Fulfilling Education Responsibilities for the Year 2022" by the People's Government of Qiannan Prefecture, it is mentioned that some counties (cities) have not yet formulated and implemented specific implementation measures for the construction and management of compulsory education schools and kindergartens in urban communities. Additionally, through interviews with relevant teachers, it was found that some schools do not make proper use of their good teaching infrastructure, leading to the misuse of teaching hardware. On the other hand, some schools lack adequate teaching hardware infrastructure, resulting in a poor educational environment and lagging educational standards. The relevant government and regional education departments tend to focus more on the development of key schools and prioritize meeting the hardware infrastructure requirements of these schools, which creates a significant gap in hardware facilities between ordinary schools and key schools.

Overall, the analysis of relevant data, questionnaire surveys, and teacher interviews reveals the existence of issues such as unreasonable allocation of teacher resources, insufficient investment in education funding, and uneven distribution of teaching hardware infrastructure in Qiannan Prefecture.

4. Further Optimizing the Allocation of Basic Education Resources in Guizhou's Ethnic Areas: Optimization Pathways

Education has always been valued by countries and ethnic groups. A nation's sustainable

development relies on education, as it fosters progress, stability, and a strong nation. To develop education, it is crucial to allocate reasonable funds, promote scientific institutional development, distribute teacher resources appropriately, and adopt effective methods.

4.1. Increase Education Investment

The government and relevant departments should increase the expenditure on education, securing more financial support for the development of education in Qiannan Prefecture. Specifically, increased investment should be made in education for remote and impoverished rural areas. This will bridge the education gap between these regions and others within the prefecture. [6]Due to the uneven economic development among different ethnic areas, the source of education funding cannot solely rely on government allocations. Local resources and advantages should be utilized to diversify funding sources, strengthen local economic capabilities, and gain support from society and individuals. This will allow for more education funding and meet the demands of education development in Qiannan Prefecture. Given the significant disparity in educational economic resources among regions, particularly between urban and rural areas, it is important for relevant government departments to allocate education funds fairly. This will prevent significant differences in education funding distribution among regions and schools, thereby addressing the imbalance between education supply and demand. Efforts should be made to narrow the gap between urban and rural areas and among schools in Qiannan Prefecture. The government should not only allocate education funds appropriately but also ensure the operational funds of schools in remote and impoverished areas, increasing overall investment.

4.2. Rational Allocation of Teacher Resources

The government of Qiannan Prefecture, along with relevant education departments, should establish mechanisms for the flow of teacher resources, job rotation, and teacher attrition management. This will facilitate effective management of existing teacher resources. The mobility of teachers within the system should be promoted, and efforts should be made to attract outstanding young teachers to rural schools by providing targeted training programs. Implementing a job rotation system for teachers can facilitate the cross-school and cross-district movement of teachers within the Qiannan Prefecture. Pilot programs for job rotation should be initiated in some schools, radiating the benefits of quality education services and optimizing the educational teaching process. By experiencing different student populations and colleagues in various school environments, teachers can adapt their teaching methods according to the characteristics and needs of students, breaking down barriers between students, parents, and schools. This will enable comprehensive development for students and enhance teachers' professional capabilities, contributing to the sustainable development of education. Qiannan's education authorities can implement teacher attrition mechanisms based on the needs and development requirements of schools in the region. This approach will improve the teaching quality of the teacher workforce and enhance their overall work capabilities, promoting long-term positive development in education. By enhancing teachers' sense of responsibility and competitiveness, the quality of education and teaching in schools can be significantly improved, facilitating orderly teacher mobility and balanced distribution of teacher resources within the region.

4.3. Rational Distribution of Educational Hardware Facilities

The implementation of differentiated policies for the allocation of teaching hardware facilities can optimize the distribution of such facilities in Qiannan Prefecture. Considering strategic development and democratic principles of fairness and equality, the government can utilize differentiated criteria to allocate teaching hardware facilities in different regions. This flexible approach should consider each school's characteristics and specific needs, alleviating contradictions between education demand and supply and preventing mismatches and misallocations of teaching hardware facilities. This will improve the efficiency of hardware utilization, narrow the urban-rural education gap, optimize the allocation of teaching hardware facilities, and enhance the quality of education development.[7] Schools at all levels should make reasonable use of teaching hardware facilities, ensuring that schools with sufficient facilities utilize them effectively, avoiding waste, and even allowing for their reuse when necessary. Additionally, schools with ample hardware facilities can support those with limited facilities, driving the development of education in the region. For example, urban schools can provide one-on-one assistance to remote rural schools, sharing surplus teaching hardware facilities and supporting the educational development of disadvantaged schools.

5. Conclusion

In conclusion, the rational allocation of basic education resources in Guizhou's ethnic areas is not only beneficial for the development of education in the region and the achievement of educational equity but also crucial for narrowing the education gap between different regions and promoting the overall development of the education sector in the country. Given the current emphasis on education by the government, it is essential for the government and relevant education departments to continue to intensify their efforts, increase investment, and ensure adequate support. They should strictly implement the requirements for educational development, while schools should make optimal use of teaching hardware facilities, and individual teachers should enhance their overall quality and competencies. These efforts will better promote educational equity and the development of the education sector in the region.

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