

Analyzing the Educational Inequality Between Coastal and Inland Areas of China From an Economic Perspective

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Abstract. As society develops, education has become an important factor affecting personal growth, social progress, and national prosperity. China is currently showing differences in economic development among different regions, and similar trends are also emerging in education levels. How to achieve educational equity has also become a hot topic. Many researchers have conducted research from many perspectives, but there is still a gap in discussions that differentiate between regions and focus on economic perspectives. This paper collects relevant literature and data and analyzes them. The paper found that educational inequality is prominent in coastal and inland areas, especially in the application of technology and the distribution of educational resources; regional economic development processes and income gaps significantly affect educational imbalances. Based on this, this paper argues that the way to improve inequality includes the provision of preferential policies by national governments to provide guarantees. Local governments promote the concept of science education and schools promote the construction of teachers.

Keywords: Economic, educational inequality, regional differences.

1. Introduction

Education is an important way to improve personal cultural literacy, thinking ability, and skills. From an international perspective, the country's high-speed and high-quality development requires talent, and education and talent can improve the country's soft power in international competition. All countries attach great importance to the development of education, and China is no exception. From a domestic perspective, China has actively implemented compulsory education to improve the quality of its citizens. Education lays the foundation for promoting the progress of the knowledge society, the rejuvenation of the Chinese nation, and the prosperity of the country. General Secretary Xi Jinping once said that education is the fundamental way for mankind to inherit civilization and knowledge, cultivate the younger generation, and create a better life. However, China has a vast territory, and the political, economic, and cultural characteristics of various regions are not the same. The distribution of educational resources and the level of education are unbalanced. Since 1990, China has given priority to the development of the eastern coastal areas, making its economic development level relatively high, while the central and western regions are relatively low. Against this background, the issue of educational equity has attracted people's attention.

In the past, studies have analyzed the causes of differences in education inequality from different aspects. At the micro level, Liu, Cheng, and Wu mentioned the impact of parents' education inequality on children's education inequality. Their main research results are as follows. Firstly, parents' education level has a significant impact on children's academic performance in junior high school; second, parents' education level will affect the educational level of children through expected education and educational investment [1]. Differences in educational investment and parent-child interaction will lead to educational inequality.

At the macro level, Guo and Li's research demonstrated that regional differences in urban and rural educational development are the main cause of inequality in educational development at the national level [2]. They believed that further optimizing the allocation of educational resources between urban and rural areas and promoting the development of outstanding educational talents could improve inequality. In addition, some scholars believe that social stratification divisions are the main cause of educational inequality [3]. At the same time, scholars have studied the impact of educational

expansion on the economy. Feng and Zhang's research believed that educational inequality will widen the income gap among residents, and the impact will be more significant in the eastern region than in the central and western regions [4].

But in fact, there are few studies discussing the reasons for the existence of educational inequality between coastal and inland areas from an economic perspective. This paper will first explain the existing educational inequality from different perspectives. The differences are mainly concentrated in the application of technology, the allocation of educational resources, and educational opportunities. In the second part, the paper uses three economic-related reasons to analyze the above phenomenon, analyzing the differences in the overall economic development process, the income gap, and the differences in demand tendencies. Finally, relevant practical suggestions are given. The economy and education are closely related. Focusing on educational issues from an economic perspective can better formulate policies to regulate the economy and ultimately promote the balanced development of education between the two major regions in China.

2. Situation Analysis

2.1. Educational Technology Inequality

Technology is an important tool for rapid and high-quality development in many fields of contemporary society. Deng Xiaoping once put forward the important proposition that "science and technology constitute a primary productive force". Technology also shows good application prospects in the education industry. According to Pierce and Cleary, computers and the Internet are the foundation of personal academic success [5]. Information technology can broaden access to education and enrich the content of education. Distance education and search engines can improve the equality of access to education. People do not need to be limited to offline teaching. Even if they are thousands of miles apart, they can also receive high-quality educational information. The development of more and more educational software and even artificial intelligence in education reflects the importance of its development.

However, the development of technology is accompanied by the emergence of a digital divide, which is mainly manifested in the access divide and the application divide [6]. It may further widen the educational inequality between the coastal areas and the inland areas. Technology is open to everyone, but not everyone can use it equally. Compared with the coastal economically developed areas, the level of Internet access and technology use in the inland mountainous areas is relatively low. In 2022, the Internet penetration rate in rural areas is 60.5%, and the proportion of rural residents who have at least one intermediate digital skill is only 39.5% [6]. The paper can use this rural data to understand the difference in technological levels between economically developed and underdeveloped regions. Many people in inland areas still have difficulty participating in Internet activities due to hardware reasons such as a lack of electronic devices. Secondly, many people have not mastered the ability to use technology, and it is difficult for them to improve their knowledge reserves and other abilities through information technology, and they cannot enjoy the dividends brought by technology. Furthermore, the digital divide has widened the information gap between regions. Coastal areas can better use technology to obtain richer information and make the best decisions, while people in inland areas have lost some development opportunities.

2.2. Educational Resources Unequal

Human resources and teaching conditions are the focus of this paper's explanation of the differences in educational resources. Since the 1990s, the phenomenon of teachers flowing from economically underdeveloped inland areas to coastal areas has been increasing [7]. Teacher strength is an important factor affecting teaching quality. In inland areas, the teaching staff is relatively weak, subject teachers are insufficient, the overall educational level of teachers is low, and there is a serious outflow of teachers. The number of regions in the western inland primary and secondary schools with a teacher-student ratio lower than the national average is much higher than that in the east. The

national average student-teacher ratio for junior high schools is 13.59 [8]. There are nine provinces and cities in the western inland area that are lower than the national average, while there is only one in the eastern coastal area. In addition, schools in coastal areas can carry out more diverse subject education under the condition of sufficient teacher resources, such as geography and chemistry and students can learn knowledge other than basic subjects such as Chinese and mathematics. In contrast, there is a shortage of teachers in inland mountainous areas, making it difficult to carry out diversified subject courses, and some teachers even need to teach multiple subjects at the same time.

Secondly, there are differences in teaching facilities between coastal areas and inland areas. In today's era, educational infrastructure is no longer just libraries, stadiums, sports equipment, etc., but also computers, multimedia equipment, and online learning spaces. The coastal areas have more developed economies, which means they have more funds to invest in school facilities and can keep up with the pace of advanced educational technology. Students have a good campus environment, use rich and complete facilities, and use advanced technology to promote better learning. However, schools in inland areas are seriously lagging in facilities due to insufficient funds, a small student population, and inconvenient transportation, and even cannot even guarantee a basic classroom environment. According to data on school conditions across the country in 2012, the number of computers per 100 primary school students in Xinjiang is far lower than that per 100 primary school students in Zhejiang [8]. It can be seen that the disparity in resources, such as teaching facilities, is widespread between the eastern and western regions, and the gap is large.

2.3. Education Opportunities Unequal

The difference in educational opportunities is reflected between the two aspects, including access to educational opportunities and the number of years of education [9]. People in inland areas have a relatively simple way to get an education, and due to the lack of teachers and educational resources, the quality of education they receive is also relatively low. However, the coastal economically developed areas have sufficient investment in education and more abundant educational resources, so people can more easily obtain high-quality education. In 2009, among the general colleges and universities that entered the "211 Project", schools in the eastern coastal areas accounted for 61.2% [10]. People in the coastal areas have more diverse educational options, which are not limited to basic subjects, and they can understand and master more knowledge and skills. In addition, due to the relatively developed economy and rapid technological development in coastal areas, there are higher requirements for more advanced knowledge, and people in this area pay more attention to education than people in inland areas. Basic education lays the talent foundation for higher education. In contrast, the proportion of students in inland areas receiving higher education is much lower than that in coastal areas. In 2009, the average number of college students per 100,000 people in the eastern region was 3,000, while in the inland western region, it was only 1,667 [10]. Therefore, people in coastal areas are more likely to have longer years of education and higher academic qualifications, which may further widen the education inequity and income gap between the two regions.

3. Reason Analysis

3.1. Economic Development Process

Since the reform and opening up, China has implemented an unbalanced development strategy, and the gradient development strategy from East to West is a good example. The eastern coastal areas have developed rapidly due to their advantage of being more likely to develop foreign trade. China also complies with the strategic development principle of "efficiency first" to give coastal areas many policy preferences and support, hoping to drive the development of inland areas with the prosperity of coastal areas. However, one of the most direct impacts of the outstanding economic development achievements of coastal areas on inland areas is the expansion of the imbalance of development between the east and the west. The economic development level of inland areas is far behind that of eastern regions. And the development of education is closely linked to the economy. Regional

economic differences will lead to regional differences in education levels. In the national education fiscal policy, funding is also more inclined to the relatively developed coastal areas. Table 1 shows the total investment in education funds in some provinces (cities) in coastal and inland areas in 2022 [10].

Table 1. Table of total local education funding investment in some coastal and inland provinces (cities) in my country in 2022 [10]

Coastal Areas / Year	2022 (100 million yuan)
Zhejiang	3444.01
Fujian	1834.77
Shandong	3714.44
Liaoning	1167.45
Inland Areas / Year	2022 (100 million yuan)
Guizhou	1580.13
Qinghai	308.59
Chongqing	1314.7
Shanxi	1758.75

According to the data, it can be found that the government funding for education in the eastern coastal areas is significantly higher than that in the inland regions. Adequate education funding means that schools at all levels in coastal areas can better improve school conditions and teaching quality, and can attract and cultivate more talents. There is a strong correlation between the development of education and the cultivation of talents. The progress of all aspects of society requires the support of talent. Education in turn promotes the development of the entire region, which is a sustainable and virtuous cycle. On the contrary, the inland areas lag in the process of economic development, which is bound to weaken their ability to promote educational development. Not only is it difficult to guarantee the cultivation of talents, but it is also difficult to attract and retain talents. Without talents, there will be no innovation, and society will not have the vitality to keep moving forward, which will continue to widen the gap with economically developed regions.

3.2. Income Gap

At present, the distribution trend of both scientific and technological talents and high-quality teachers in China shows that there are more in the East and less in the West. Zhao, Zhang, and Niu's research predicted that the number of scientific and technological talents in the eastern region will reach 4,597,360 in 2028, while the number in the central and western regions will be less than 1 million respectively [11]. This prediction also confirms the current trend. Talent is an important resource to promote educational development, and one of the main factors affecting the distribution of talent is income and benefits. Everyone yearns for higher salaries and better benefits.

The economy in the eastern coastal areas is relatively developed, the science and technology industry is booming, and the ecological environment and social environment are relatively superior. For scientific and technological talents, the coastal areas have a stronger demand for talent, and their salaries are higher, attracting a large number of talent to gather. The impact index of per capita GDP on the number of scientific and technological talents has been rising across the country, indicating that income has an increasing influence on the flow of scientific and technological talents [11]. Scientific and technological talents promote the development of the science and technology industry, and the advantages of the "agglomeration effect" are gradually reflected. The industrial chain of the science and technology industry will be more systematic and complete, and it will be more convenient and have lower investment and maintenance costs when applying educational technology.

For teachers, the educational environment in the eastern coastal areas is good and the salary is relatively high. According to the "China Teacher Development Report 2019: Achievements, Challenges and Measures for the Construction of Primary and Secondary School Teachers", the average monthly salary of teachers in the eastern region is 5,133.17 yuan, which is more than 1,000

yuan higher than that in the central and western regions [7]. The "siphon effect" of the eastern coastal areas on talent is increasing. It not only reduces the number of talents in the inland areas on the surface but more profoundly will further promote the flow of various high-quality resources to the coastal areas, forming a "Matthew effect". Economic development there will promote the development of talents and education, and talents and education will feed back to the economy, allowing good regions to continue to develop in a better direction, while bad regions will not have sufficient resources to continue to develop in a worse direction.

What's more, the current cost of higher education is still mainly borne by the family. People's choice to continue their education or enter society to find a job is largely affected by the family's income level. This has led to the fact that although some students in underdeveloped inland areas can complete basic education, they lack the economic foundation to receive higher education and their education level continues to be low. On the other hand, people in economically developed coastal areas generally have high incomes and can support their children to continue their studies. Therefore, there are more highly educated talents in economically developed coastal areas.

3.3. Demand Preference

In the theory of demand and supply in economics, the demand tendency of consumers will affect the development of the entire industry. Maslow's hierarchy of needs theory divides human needs into five levels, the highest of which is self-realization. Education mainly belongs to the need for self-realization, and its satisfaction should be met after the basic needs such as physiological and safety are met. People in inland areas have relatively low income levels, and their needs for production and life may be greater than their education needs. They are more willing to invest money in matters that can promote production and improve the quality of life. In contrast, in coastal economically developed areas, social development has a great demand for highly educated talents, and people attach great importance to education, so they are willing to invest more money in the education and training of their children. Besides, the eastern coastal areas have strong economic strength, and the government is objectively more capable of supporting the development of education. When people in a region have a strong demand for education, this demand will also drive the government to expand its investment in education, so that educational facilities and equipment are improved and educational technology is advanced, which in turn will cultivate high-quality talents and promote the development of regional economy and culture.

4. Suggestions

4.1. Improve Teachers' Treatment and Teaching Ability

Building a teaching team is the key to improving the education level in inland areas. First, the governments of inland areas should consider attracting more teachers with high teaching abilities and high academic qualifications by increasing teachers' salaries and benefits to improve the problem of single subject structure. At the same time, the abilities of existing teachers should be improved. The school and local government can encourage and support existing teachers to participate in training and study, especially to go to universities in economically developed and highly educated areas. Education also needs to keep pace with the times. Learning newer and deeper knowledge can improve the teaching quality of teachers. What's more, there are many ethnic minorities in inland areas, which is a regional feature. The government should also pay attention to protecting regional culture when developing education. Teachers related to the culture of ethnic minorities should also be included in the teaching team to ensure cultural inheritance and integration.

4.2. Provide Preferential Policies for Inland Areas

If the economy of the whole country is to develop rapidly and vigorously, it is necessary to make up for the shortcomings of the inland areas. Education and economy complement each other. The country should formulate policies that promote the progress of education in inland areas, including

but not limited to financial support and support for higher education institutions. The national government should increase the investment in education funds for inland areas, especially for schools with poor school conditions and low teaching quality in mountainous and poor areas, and focus on improving their infrastructure and equipment and improving the skills of teachers. Higher education cultivates more advanced talents, and the number of higher education institutions can reflect the educational level of the region to a certain extent. The national government needs to consider investing in the construction of more high-level higher education institutions in inland areas, creating high-level disciplines, a good campus environment, and good future further study or employment plans. This measure can not only radiate talent from neighboring areas but also attract talent from other regions, laying the foundation for local development. At the same time, it's a good way to give priority to the development of majors that are highly related to local industries when running schools. For example, the China University of Petroleum-Beijing at Karamay, its petroleum major and oil and gas storage and transportation engineering major are urgently needed by the local oil industry. Especially in underdeveloped areas, talent training should strive to match the direction of regional development.

4.3. Driving Technology into Inland Areas

As a tool, technology can promote the development of many aspects of education, including changes in teaching methods and the acquisition of educational information. First, the government should invest in upgrading teaching facilities and equipment, such as multimedia equipment, so that students can learn knowledge more vividly, interestingly, and efficiently. Secondly, distance education and online education resource sharing are major contributions of science and technology to promoting educational equity. Campuses in inland areas should enrich scientific and technological equipment, such as computers so that students have channels to learn more abundant knowledge.

4.4. Strengthen Targeted Assistance to Schools

The education development in coastal areas now is in good condition. To alleviate the educational inequality in inland areas, schools in coastal areas can be encouraged to help schools in inland areas and promote the flow of high-quality educational resources. First, encourage high-quality teachers in coastal areas to go deep into schools with poor education levels in inland areas to conduct demonstration teaching. Secondly, encourage schools with high education levels in coastal areas to set up branch campuses in inland areas, which will not only help improve the scale and quality of education in inland areas but also expand the development space of schools in coastal areas [10].

4.5. Popularize Scientific Educational Concepts

As mentioned above, demand trends greatly affect residents' and governments' investment in education. In this context, governments in inland areas should publicize the importance of education through brochures and door-to-door promotion, so that people can pay more attention to education and realize that education can improve their production and lifestyle. For example, learning smart agriculture can make agricultural production more scientific and efficient. In terms of the target of publicity, special attention should be paid to people living in inland mountainous areas who still maintain the original educational concepts. More knowledge is brought into the mountains, more children can be brought out of the mountains, and they should change the living conditions of the mountains after learning. The plan of education is beneficial to the present and future generations. Although it may not be the most urgent social issue, the government of each region should attach importance to the basic role of education, earnestly implement nine-year compulsory education, and continuously improve teaching conditions.

5. Conclusion

From the explanation of the phenomenon to the analysis of the causes, this paper demonstrates that there is currently educational inequality between China's coastal and inland areas, and it is closely related to regional economic development, especially the economic development process, income gap, and demand tendency. The coastal areas have richer educational resources and higher educational levels, while the inland areas lack educational resources and the educational level still needs to be improved. To promote the balanced development of education, first of all, the local government should focus on improving the salaries and benefits of teachers and improving the overall quality of the teaching staff. Secondly, the national government should provide reasonable preferential policies to support the development of education in inland areas. Thirdly, promoting a closer integration of technology and teaching in inland schools can also improve the efficiency and quality of teaching. Besides, strengthening cooperation and communication between coastal and inland schools and promoting advanced educational concepts are also feasible measures. The causes of educational inequality are complex and diverse. This paper mainly analyzes from the perspective of economic impact on education, supplementing a thinking perspective that may be conducive to promoting the balanced development of education. Limited by personal ability and collected data, this article only covers several economic perspectives, and there are still many other discussion perspectives worthy of subsequent research by scholars. The economic situation in various regions is constantly changing with the development of the times, and its impact on education is also changing accordingly. Various data are being updated, and scholars' research conclusions in this field are also being improved. In the future, people can conduct more targeted research on certain economic-related factors according to social needs to provide more reliable reference information for decision-making.

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