

# Research and Solution of Educational Inequality in Rural Areas - Based on Gini Coefficient Analysis

Jie Li \*

School of Foreign Language, Quzhou University, Zhejiang, China

\*Corresponding author: 2220643143@qzc.edu.cn

**Abstract.** Based on the Gini Index of educational inequality, China's educational development level is progressing steadily and remarkable achievements have been made. However, the gap between urban and rural education has been expanding, and the gap between urban and rural education development has become the most important factor affecting the educational inequality of the country and provinces. Based on the consideration of history, gender, family income and other factors as well as case analysis, this paper proposes the following solutions: (1) Make full use of the Internet and other information resources in the teaching process; (2) Rural children can conduct reasonable exchanges and visits to urban children; (3) Matching urban and rural assistance; (4) Increase the attraction of voluntary education. Although nowadays, rural education and higher education in China become more and more popular but education inequality exists in detail. Moreover, solutions should be put into effect multiaspectly. In the process of urban and rural development, the study of educational inequality is conducive to solving the mental health problems of rural students and urban students. It can also improve the ability of rural students and urban students to live independently outside and adapt to the environment, so as to reduce the living economic cost as much as possible and enlarge the social benefits at the same time.

**Keywords:** Education Inequality; rural area; Gini coefficient analysis.

## 1. Introduction

When education prospers, the country prospers, it is the common ideal of the society to pursue the healthy development of education. Equity is the eternal value pursuit of human society. It has been proved by many studies that inequality in education that will lead to income inequality in all social classes [1]. In the study of education inequality, the usual methods include the Gini coefficient and Lorenz curve, Theil index, coefficient of variation, and coefficient of distortion. In the modern measure, Bonferroni index and De Vergottini index provide relatively straightforward graphs. As shown in figure 1, based on these two indexes, the author of this paper analyzes the advantages and disadvantages of each index and its application and compares the B index, V index, and G index. It found that the Gini index is best used when someone need to break down inequality by the source of income [2]. Therefore, this paper analyzes educational inequality based on the Gini index.

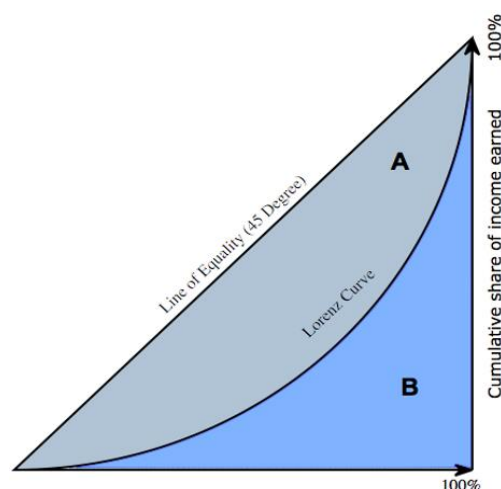


Fig 1. Gini coefficient [1].

Most human capital is measured by years of education. Currently, the Gini coefficient are usually used to measure the structure of human capital. To measure the absolute degree of educational inequality, and of education to indicate the relative degree of inequality standard deviation of years of education, the basic idea of education's Gini coefficient is the same as that of income's Gini coefficient. However, in rural areas, the education of families and individuals is affected by various factors, which ultimately leads to the slow process of education modernization. Moreover, children from rural families still have more significant psychological contradictions compared with those from urban families after entering university. This paper first exhibits the reasons of education inequality, presents the Gini coefficient of the rural area. Then, it analyzes cases of the existing inequality in education. Last, it reveals the corresponding solutions to the educational inequity factors affecting rural children and individuals.

## 2. Education Inequality Factors

### 2.1 Historical Factor

Throughout human history, rural areas were the dwellings of enslaved people. In continental Europe, the residences of serfs and nobles were called cottages and manors, and the change of status also depended on blood ties rather than equal education. In India, Brahmins are still dominant in the caste system. Brahmins and Kshatriyas are very different in family education between the ages of 0 and 7. In China, the ritual system was also a hierarchical tool of class rule. Although the imperial examination system allowed talents to be selected to a certain extent, the selection criteria were improved with the progress of the government's economic strength [3].

The closed-door policy started by Kangxi of the Qing Dynasty made official education exist in name only, and rural education naturally became riddled with defects. In addition, there was no sign of communication with its ethnic groups in the Qing Dynasty after the prosperous period of Kangxi and Qianlong. A policy of isolation has further corrupted the country's education and left it lagging behind international standards. During the period of the Republic of China, education had a history of civilization, but it still could not be popularized in rural areas. The families of military officers possessed absolutely excellent educational resources to support their children in contacting the international community. As a result, the rural illiteracy rate has always existed. During the Anti-Japanese War, the rural literacy rate was even lower. From the founding of New China to the resumption of college entrance examination reform, rural education is always on the tail of the bottom of education. In the 2010, China is the world's second-largest economy but because of the regional geography, this country is highly uneven development [4].

### 2.2 Gender Factor

Gender difference is closely related to educational inequality, and gender difference has a strong influence on educational inequality. Educational inequality, as measured by the Gini coefficient, is negatively correlated with GDP per capita growth.

The Gender Development Index (GDI) is a comprehensive index reflecting the degree of equality between men and women, which has been used by the Human Development Report of the United Nations since 1995 to measure the inequality of the basic human abilities of different genders and rank the GDI of various countries according to the measurement results every year [5]. From the calculation results, the national gender balance index has not decreased in the past two decades, especially the urban gender balance index has increased the most. When the educational Gini coefficient and the overall illiteracy rate have decreased, such a situation seems to indicate that the gender discrimination in education has not been alleviated [6]. The GGGI quantifies the extent to which the gender gap has closed in a country as a whole and across four dimensions. China's GGGI quantities was 0.682. It is the 13th consecutive year that the ranking has fallen since 2008, when it reached a record high of 57. In terms of future employment, although China has legislated to protect equal pay for equal work, it is far from being fully realized. The labor market participation rate of

women and men is 68.6 percent and 82.8 percent, respectively ranking 72. The projected income of women is 61 percent of that of men ranking 76, and women occupy only 16.8 percent of management positions ranking 132.

### 2.3 Policy Support Factor

The urban priority development policy leads to the unequal distribution of educational resources between urban and rural areas, and the concentration of secondary and higher education in cities. Secondary and higher education in cities can completely consume full part of high-quality students. Such an education cycle makes quality education in cities less popular than in rural areas, and rural basic education and secondary education have been neglected for a long time.

As well, the structure of investment in education is unreasonable. The newly increased educational resources are going to famous universities and insufficient investment in compulsory education. At the stage of compulsory education, the investment received by urban primary and secondary schools is much higher than that of rural kindergartens and primary schools distributed more in towns and villages, the investment in school facilities in rural areas is also far less abundant than in urban areas.

### 2.4 Family Income Factor

According to the statistics of 2020, the per capita disposable income of rural residents in China is 17,131 yuan, and the median per capita disposable income of rural residents is 15,204 yuan. The ratio of per capita disposable income of urban and rural residents is 2.56 yuan, which is 0.08 less than the previous year [7]. It illustrates the increasing trend in per capita disposable income in rural area. But from fig 2 below, it shows the growth rate is slower and slower.

Therefore, the economic conditions of rural families are limited, and the increase in the number of children does not promote the progress of family education. On the contrary, parents in rural families get into trouble in the distribution of limited resources, and gender factors often take a greater proportion of consideration in the distribution of resources.

Under the higher education fee system, many poor people in rural areas have to give up the chance to go to school, and only some of the rich people in rural areas are able to attend. The urban poor are more likely to get information about financial support and student loans. Every year, many rural students choose to drop out because of the lack of funding and information. In addition, most of the junior high school population flows to cities, which also increases the Gini coefficient of rural education to a certain extent.

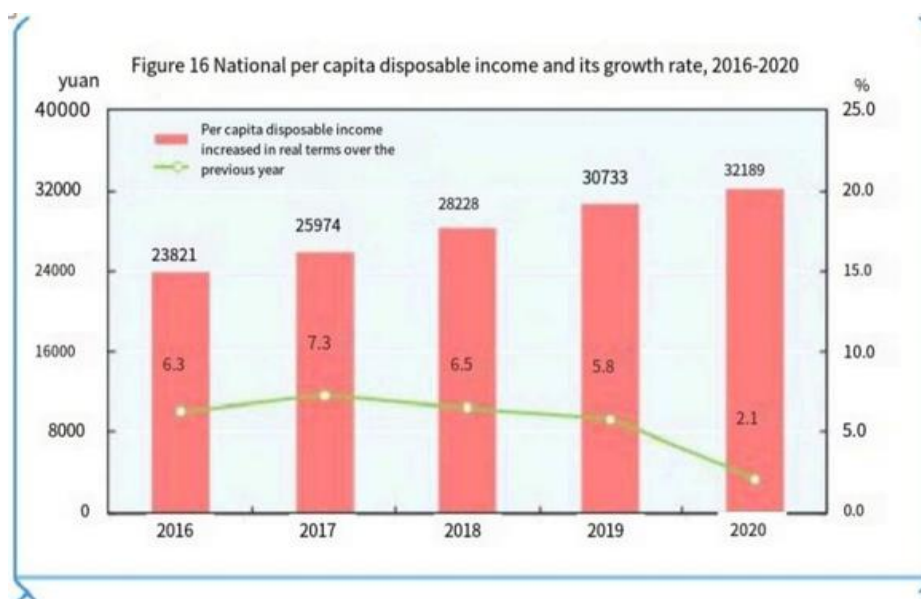


Fig 2. National per capital disposable income and its growth rate, 2016-2020.

### 3. Solutions

#### 3.1 The state shall increase the investment in informatization construction in rural areas

Information technology has become an independent teaching subject in primary and secondary school education, and primary and secondary school students are also full of strong interest in information technology. The main reason is that information technology can better satisfy the pursuit of self-presentation in students' time. QQ, the social software with the largest number of users among Chinese students, is very familiar with the chatting habits of primary and secondary school students [8]. Most rural students' relief methods also come from social communication or games.

At the same time of normal teaching in schools, teachers can learn from the game's attraction to primary and middle school students and replace the reward and punishment mechanism into visual window information, so that students can really see their progress. Although the degree of information technology is not high in rural schools, the management of mobile phones is also quite strict, but the students have no IQ gap, nor do they need to flock to urban schools. The main gap between urban and rural education is in the management mechanism. Most urban schools adopt an open and inclusive attitude towards information technology and allow students to use tablets, computers, and mobile phones to study, while rural schools impose more constraints on students and strictly limit their exploration of information technology.

They also prefer paper books. It seems that the thicker the book, the more knowledgeable the students appear. Electronic dictionaries, translation pens and so on hardly enter rural schools, and students never know about these learning tools. Rural schools should strengthen supervision over students' self-discipline rather than restrict their exploration of information technology. Under the current condition of big data, almost all students' online data will be associated with the police, and the data information will be protected by privacy [9].

Provinces with low per capita expenditure on basic education need to establish a diversified mechanism to raise funds for basic education and further increase non-financial investment in education.

#### 3.2 Rural teachers and students can conduct reasonable exchanges and visits to urban schools

Urban schools must consider the students' physical and mental development and development planning more comprehensively. In terms of school district construction, urban schools cover an area sufficient to cover three rural primary schools. Urban schools also better meet the pursuit of future development of children from different family backgrounds. For example, urban schools will set up domestic college entrance examination departments and international departments for domestic students and overseas students, while rural schools only set up the college entrance examination. All teaching is to conform to the most basic theoretical results, lack of quality expansion. Therefore, teachers or students from rural schools can apply for regular visits to students from urban schools through school channels, and school managers must send teachers or students after comprehensive consideration. Therefore, rural teachers can have short-term observation and experience of school buildings, facilities and management system of urban schools, and feel different styles of study [10]. Rural students could feel the advanced teaching level and complete teaching facilities. For the psychological gap of rural students, friendly communication and warm embrace of urban students may reduce the estrangement, and regular activities and invited travel is also a way to establish an equal relationship. Rural students do not have to pay too much attention to the level of consumption, but to take the current situation as the motivation to struggle, do an inspirational figure to urban students. Rural teachers should encourage students erect lofty ambitions and

#### 3.3 Matching urban and rural assistance

At present, the entrance examination for primary and secondary school students is formulated by the Municipal Bureau of Education, while the college entrance examination and other personnel examinations are formulated by national ministries and commissions. Urban schools, due to

geographical reasons, are usually able to get the information of the reform immediately. For urban tutors, in addition to the results of their own class, it should also give some help to students in rural schools and disseminate reform information to rural schools in a timely manner. Rural teachers generally focus on students' physical and mental development rather than test scores. The number of top students in rural areas is small and few have sufficient economic conditions to develop and improve, which is the point that urban and rural development has to pay attention to.

Therefore, urban tutors should compare the overall scores of urban and rural students, analyze the question types that rural students commonly have questions about, understand the gap between urban and rural development behind, and report to the municipal Education Bureau.

### **3.4 Increase the attraction of voluntary education**

The government should make policies to attract teachers to volunteer teaching in local areas. Rural schools are not able to popularize school and family education because of the reasons of lacking teachers. Some schools have begun to pay attention to the implementation of volunteering teaching in recent years. Volunteer teachers usually come from teachers' colleges and universities and can choose to teach in rural areas upon graduation. In addition to conforming to the rural education policy of national government, the government in rural areas had better add some additional welfare subsidies to attract more volunteer teachers come to teach.

The role of parents is also important. The parents of urban children should support their children to be a rural teacher and change the stereotypes of rural area. In fact, just a part of rural parents are almost not clear about how to conduct family education for their children at home. That is, to some rural children, it is inconsistencies of their performance at home and at school. If conditions permit, teachers in rural schools can hold regular parent-teacher meetings to let parents know the school's teaching progress, children's performance at school, and parents' personal views on family education [11]. Also, it is better for rural governments to propose the central finance department to improve the overall ability for basic education funds and establish a diversified mechanism for raising basic education funds at the provincial level [12].

As rural areas, living condition is a crux element of attracting voluntary teachers. As we all know, rural areas have the better air environment and simple relationships, if the housing conditions could be improved, the voluntary teachers may prefer to stay. Another advantage of rural areas is the land use rate, there could get more land for less money and set up bigger floor space.

## **4. Conclusion**

Based on the Gini Index, it can be learned that there are problems of inequality in urban and rural education. Rural schools and urban schools have less advantages than urban schools in terms of history, gender, policy orientation, family background of students and investment structure. Meanwhile, the hard teaching environment of some rural schools also makes it difficult for students to continue learning. The level of information technology in schools is needed to be improved, and organize volunteers to teach rural students regularly, stimulate urban teachers help rural students by letters or so, popularize family education and other ways to seek solutions.

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