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The Influence of Unequal Educational Resources in Eastern and Western China on Gender Equality Education

— Take Guiyang and Nanjing as Examples

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Abstract: Nowadays, the importance of education is more and more emphasized as the society move forward. Progress in research on gender education, the relationship between education and the economy, and regional education differences has already been made. However, there is still a research gap in the relationship between educational resource differences and gender equality education. This paper employs the method of case analysis to conduct research, comparing one specific city in the eastern and western regions. By collecting and screening data related to education in Nanjing and Guiyang in the year of 2020, the differences in educational resources in the two regions is analyzed and evaluated from three aspects: government society, people's lives, and school conditions, so as to consider and analyze the impact of educational resources on gender equality education in the region as well as discrepancies. It turns out that the comprehensive indicators in Nanjing surpassed that of Guiyang, which resulted in Nanjing's superior educational resources. Therefore, the upbringing, the ideology and the faculty qualification of residents in two cities were affected and varied a lot.

Keywords: educational resources, gender equality education, regional differences

1. Introduction

With the proposal of the strategy of invigorating the country through science and education as well as the development of economy and society, education is becoming increasingly valued [1,2]. According to the theory of the two-way effect of economic growth on education development [3], there are considerable differences between the allocation of educational resources in Eastern and Western China because of the ongoing unbalanced regional economic development in the two regions. In terms of education scale, the number of colleges and universities in the eastern region is close to 1.5 times that in the western part, with 37.95% of Chinese universities in the east and 26.45% in the west in 2019, while the amount of critical universities is almost 2.5 times greater than that in the western area, taking up 54.31% and 20.70% of the total, respectively [4]. Regarding educational level, the cultivation of high-level talents, including undergraduates, masters, and doctors, is relatively

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deficient and the platform's distribution for scientific research is insufficient in Western China [4]. Regarding education funds, Eastern China vastly outpaces the western region in investment in education hardware facilities, average teacher salaries, student tuition and scholarships [1,4]. As for soft educational facilities, the western area generally shows inferiority when compared to the east. These gaps lie in the eastern part's more excellent faculty, including a higher proportion of teachers with higher professional titles and advanced degrees, a relatively appropriate teacher-student ratio, and more students [1,3,4]. Moreover, the natural geographical environment, educational policy, and the flow of high-quality teacher resources also contribute to the educational resources assignment in the east and west [1,3].

The fundamental role of gender equality, which is a precondition for, and indicator of sustainable and people-centered development, has been emphasized by the United Nations Children's Fund [5]. In recent years, as feminism and the conception of gender equality prevailed and are being recognized extensively [5], gender equality is receiving more and more attention. Gender equality education, which aims at cultivating the subjective spirit of modern citizens with clear responsibilities and rights and promoting the personality perfection of both sexes, is regarded as a kind of gender enlightenment education [6]. Many researchers [5,7,8] have studied gender equality education and stereotype, giving the society a further understanding and comprehension of gender equality education. Practicing gender equality education can not only weaken social prejudice against gender roles [9], but also demonstrate respect and tolerance to various characteristics along with the freely chosen gender image, gender behavior, and gender role [5].

It is revealed by several types of research that gender inequality restricts economic development. Amaia Altuzarra, Catalina G á lvez-G á lvez and Ana Gonz á lez-Flores applied the method of case study and regression analysis to study the relationship between economic development and gender equality in developing countries. They found that gender equality in education is conducive to economic growth [10]. F Atiq, FS Qadri investigated the impact of gender inequality on economic growth in Asian countries based on the World Bank by data using panel data analysis. The result is that reducing gender inequality in higher education positively affects economic growth [11]. From the study of AC Bertay, L Dordevic and C Sever, industries with a high proportion of women grow relatively fast in countries of a high degree of gender equality [12]. In view of the two-phase effect of economy and education, it can be inferred that the standard of economic development will influence gender equality education to a certain extent. Therefore, it can also be speculated that gender equality education in China's eastern and western regions will be impacted by the huge differences between the two regions, from the hardware facilities to the cultural environment. There are few studies on the inequality of educational resources and the regional differences of gender equality education based on economic discrepancies. Thus, the probe of such issues is of great significance to the physical and mental health development and career planning for adolescents of both sexes.

This paper takes example of Guizhou in Guizhou Province in Western China and Nanjing in Jiangsu Province in Eastern China. Then it aims to analyze the differences in educational resources between the two cities and the reasons for their occurrence comprehensively and try to find out the possible impact of this imbalance on gender equality education. This study applies the research method of the case study. Firstly, data information such as the economic index, teachers' strength, enrollment, the gender ratio of teachers and students, and government policies of the two cities were collected and compared. Secondly, the relationships between the inequality of educational resources in the two cities and gender-related factors like qualification, employment, family, and gender equality are analyzed. Finally, the paper tried to expand the scale of the general phenomenon of gender equality education from cities to eastern and western parts of China.

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2. Comparative Analysis of Nanjing and Guiyang

2.1. Educational Investment by Government and Society

The basic line of "focus on economic construction" in China indicates the fundamental role of economic construction, which is the precondition and foundation for development. Firstly, this paper presents some educational related investment and construction data of municipal governments and society of Nanjing and Guiyang in 2020 in table 1.

Overall, the income and expenditure of the municipal government in Nanjing exceeds that of Guiyang in 2020. To begin with, total financial revenue and general public budgetary revenue in Nanjing stood at about 3100 and 1600 billion yuan respectively, both of which were almost four times as much as that in Guiyang, with the figure of around 880 and 400 billion yuan. Meanwhile, regarding to expenditure in general public budgets, the target was 1754.62 billion yuan in Nanjing and 678.16 billion yuan in Guiyang, with a nearly threefold gap existing. However, by comparison with Nanjing, the share of education in total budget expenditure in Guiyang was two percent higher, and the proportion of science and technology in Guizhou among total public spending was just two percentage points lower. Although there were no distinctive differences in the ratio of educational resources investment between Nanjing and Guiyang, the huge discrepancies in the actual amount of capital related to education matters. As the graph shown, Guiyang government spent 35.62 billion yuan on R&D and 8468 full-time equivalents of R&D personnel were recorded, compared to the spending of 228.44 billion yuan on R&D and the figure of over 112 thousand whole R&D staff of full-time equivalence. In addition, both cities own a similar number of libraries, but there was a much larger quantity of museums as well as the number of accepted and granted patent applications in Nanjing.

Government's financial revenue determines the proportion of capital investment and project construction in various aspects of a city. As the cornerstone of people's livelihood, education is an indispensable part of urban development and social construction. Although education and science and technology, two areas related to education in society, account for a similar proportion of their respective public budget expenditures, they have huge different amounts of actual capital investment duo to the significant financial income gap between Nanjing and Guiyang. Given that education was emphasized to the same extent by two cities' governments, it is literally difficult to make up for the huge deficiency brought about by the fundamental factor of the economy. Tremendous economic disparities can still cause distinct differences in educational resources.

2.2. Economic Life and Education of People

Education is vital in people's livelihood whose root lays in the economy development. Then the paper looks into more details on the information about the economic level of the people in Nanjing and Guiyang in 2020, which are shown in table 2. It is clear that the economic level of the people in Nanjing is far higher than that of Guiyang. In 2020, the Gross Domestic Product of Nanjing was 14817.95 billion yuan, versus 4311.65 billion yuan of that in Guiyang. Although Nanjing held a larger resident population at around 9319.7 thousand people compared to the figure 5989.8 in Guiyang, per capita GDP of Nanjing was double more than that of Guiyang, at 159322 and 72246 yuan, respectively. When it comes to people's income and expenditure, the paper limits the scope of data analysis to urban residents. In Nanjing, there were almost 2.16 million people working in urban non-private units and the average wage of them was around 130 thousand yuan, while the registered unemployment rate was at 1.71%. By contrast, the figure for both employee numbers and their payments in Guiyang were much less, with approximately 1.13 million employed people and 99 thousand yuan of average payment, and 4.04% of the unemployment rate was recorded. Correspondingly, urban per capita

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disposable income varied considerably between Nanjing and Guiyang, at nearly 68 and 40 thousand yuan. A gap in consumption expenses of approximately 10000 yuan between the two cities can also be seen, among which the expenditure of education, culture and entertainment accounts for 15.97% in Nanjing and 10.40% in Guiyang, respectively. The relationship between people's economic standard and education is mainly reflected in family.

From the data presented above, it is apparent that there was a gap ranging from 1.5 to 3.5 times between the two cities in terms of GDP, employee earnings, disposable personal income of city people, the proportion of education expenditure, and even the registered urban unemployment rate. These immense disparities in economic levels lead to dramatic differences in the investment of families or individuals in education and its related resources. The economic situation of the family and the level as well as the experience of parents' education interact with each other, with both mutual constraints and mutual enhancement. As a result, family economic status along with parents' personal qualities have a decisive influence on the purpose, nature, method, time, etc. of children's education, thus affecting the educational resources that originate from family environment and background. Therefore, the average abundance of educational resources in households in Nanjing and Guiyang vary significantly due to the differences in the economic conditions of the people in the two regions.

2.3. Relevant Conditions of the School

To probe further into educational situations about school in two cities, the paper narrows down the range to four types, postgraduate training institution, ordinary university, general middle school and primary school. Some data related to schools of these four levels were collected in table 3. The whole Nanjing city held a total of 1769 schools, with over 2.3 million students and 142 thousand full-time teachers. In contrast, there were more schools in Guiyang city, at 2641, but much less numbers of enrolments and special faculties were shown in the year 2020. To be more specific, the figure for institutions cultivating postgraduates, common universities, middle schools and primary schools in Nanjing stood at around 59, 53, 259 and 384 respectively, compared to that of Guiyang which were approximately 7, 35, 335, 538 in order. As for the number of school enrolments of four mentioned educational types, postgraduate training institution and regular higher education saw more pronounced differences, with over 161 thousand and more than 757 thousand in Nanjing versus 25 thousand and 440 thousand in Guiyang, while see was no huge differences in the number of students in general middle school and primary schools. With regard to full-time teachers, the number of practicing educators registered in Nanjing in normal university, general middle school and primary school were around 55, 27 and 32 thousand respectively, much greater than that in Guiyang, at about 21, 20 and 23 thousand full-time staff.

The comparison of the number of schools at various levels, the amount of students on campus, and the teacher situation in the two cities intuitively reflects the unequal investment in school education in the two regions. Among four kinds of educational institutions that were surveyed and analyzed, even though more schools were constructed in Guiyang than in Nanjing, current students and regular teachers in Nanjing outnumbered that in Guiyang. It can be suggested that Guiyang lagged far behind Nanjing in terms of financial support for educational construction and its quality was inferior to Nanjing's. With tremendous diversities in school quality, construction funds, and talent condition existing, the chasm generated by the insurmountable gap in introduction of teachers, teaching and education methods, and the cultivation of students' quality in schools was extremely hard to surpass. Within the specific data involved four institutional schools, there was no evident difference in elementary and secondary schools, while the relevant indexes of the two cities show enormous differences in higher levels of graduate training institutions and ordinary universities. A circumstance can be inferred that Guiyang had endeavored to improve the basic compulsory education system in 2020, whereas the lack of attention and investment in higher education can still be witnessed.

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The shortage of talents in higher education may exert a negative impact on the following three aspects. 1. the educated with the insufficiency in the motivation of student role models; 2. students' deficiency in guidance from teachers' role models; 3. absence of excellent talented role models' leading in the whole society. Without role model effect, people will lack a forward-looking vision, a sense of the overall situation and the awareness of the importance of education. They tend to abandon the right and the opportunity to receive higher education for short-term immediate benefits, which prevent them from the chance to discard old and outdated ideas and accept new ones. As a result, the impact of the differences in educational resources between Nanjing and Guiyang schools will be infinitely magnified in the social environment.

Table 1: Data of government and society.

Comparison Item	Guiyang City	Nanjing City
Financial Revenue/ billion yuan	881.51	3009.55
Public Budgetary Revenue/ billion yuan	398.13	1637.7
Public Budgetary Expenditure/ billion yuan	678.16	1754.62
#Education (Proportion in budget expenditure/ %)	132.22 (19.50)	306.28 (17.46)
#Science and Technology (Proportion in budget expenditure/ %)	25.73 (3.79)	100.86 (5.75)
Full-time Equivalent of R&D Personnel/ person-year	8468	112500
Expenditure on R&D/ billion yuan	35.62	228.44
Public Libraries/ unit	14	15
Museums/ unit	11	68
Number of Patent Applications Accepted / piece	20230	120938
Number of Patent Applications Granted/ piece	15379	76323

Nanjing Statistical Yearbook 2021 [13]
Guiyang Statistical Yearbook 2021 [14]

Table 2: Data of people economic situation.

Comparison Item	Guiyang City	Nanjing City
Gross Domestic Product/ billion yuan	4311.65	14817.95
Per Capita GDP/ yuan	72246	159322
Resident Population/ 10000 person	598.98	931.97
Number of Employed Persons in Urban Non-Private Units/ 10000 person	113.27	216.11
Average Wage of Employed persons in Urban Non-Private Units/ yuan	98610	130155
Per Capita Annual Disposable Income of Urban Households/ yuan	40305	67553
Consumption Structure of Urban Residents/ yuan	26433	35854
#Education, Culture and Recreation	2750.15	5725
# Proportion of education, culture and entertainment/ %		
Registered unemployment rate in cities and towns/ %	4.04	1.71

Nanjing Statistical Yearbook 2021 [13]
Guiyang Statistical Yearbook 2021 [14]

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Table 3: Data of four types of educational institutions.

Comparison Item		Guiyang City	Nanjing City
Total	Number of School/ units	2641	1769
	Number of Enrolments/ people	1636995	2318351
	Number of Full-time Teachers/ people	88138	142029
Institutions Providing Postgraduate Programs	Number of School/ units	7	59
	Number of Enrolments/ people	25091	161005
Regular Institutions of Higher Education	Number of School/ units	35	53
	Number of Enrolments/ people	440212	757136
	Number of Full-time Teachers/ people	21351	55134
Regular Secondary School	Number of School / units	335	259
	Number of Enrolments/ people	248774	275496
	Number of Full-time Teachers/ people	19964	26926
Primary School	Number of School/ units	538	384
	Number of Enrolments/ people	445829	470994
	Number of Full-time Teachers/ people	23146	32285

Nanjing Statistical Yearbook 2021 [13]
Guiyang Statistical Yearbook 2021 [14]

3. Conclusions

Based on the above three aspects of data analysis, it can conclude that divergence of city economic development can lead to significant differences in educational resources. This enormous gap can affect the upbringing of children, the qualification of the faculty and the thinking mode of people.

It is well known that the concept of gender inequality and numerous stereotypes associated with it account for a large proportion of Chinese traditional conception. If old and backward ideas prevalent in a city with low economy standard, girls need to make greater efforts than boys to obtain valuable resources and opportunities; teachers who do not receive quality education use gender inequality rule unconsciously when teaching; elder members in multi child families tend to expose boys to superior educational resources than girls and implement conservative thoughts such as ‘men are superior to women’ and ‘men dominate outside and women dominate inside’ in lives. There is an inherent correlation between economic conditions and educational resources. Under a higher economic level such as Nanjing, parents are more capable to provide their children with relatively high-quality and more suitable educational resources, including location, type, partner, etc. of education, and children of both genders will be treated equally. At the meantime, teachers with higher education qualifications will attach more importance to implementing, applying, and imparting the concept of gender equality in the teaching process, while also utilizing gender characteristics in teaching flexibly and skillfully.

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Furthermore, the rise in the average level of education in society can counteract the investment of the government and society in educational resources, thereby enabling people to accept and internalize new notions as well as promoting gender equality education by enhancing the popularization of high-quality educational resources.

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