A Study on the Allocation of Special Education Resources in China

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Abstract

Education, as a core of a country, is the significant orientation of development. Recently, Chinese society pays more attention to the disabled group, which makes special education become a popular research field. The special education has been emphasised by the National medium and long-term educational reform and development program (2010-2020) and the 13th Five-Year Plan for National Education development. This research applies the multivariate statistical analysis to explore the special education resources allocation in China's thirty-one provinces, autonomous regions and municipalities (not include Hong Kong, Macau, and Taiwan), which aims to investigate the status of the Chinese special education and provide appropriate proposals for the future. The use of factor analysis carries out the imbalanced resources allocation is not same as the Chinese economy distribution; due to the various status of special education, this paper proposes several suggestions based on the statistical analysis.

Keywords - *China, Special education, Resource allocation, Factor analysis, Cluster analysis.*

I. INTRODUCTION

'Education for all,' as an educational idea, has been presented for many years but it still cannot be entirely achieved. After solving some problems, such as gender discrimination, religious harmonisation, and racism, education seems to be fair indeed. However, recently, education for the person with the disability has already become an essential concern of the world and of course, in China.

The first record of the disabled person in Chinese history is controversial. One agreement is that the earliest record of the disability was in Liji (the Book of Rites), but the other statement believes Shangshu, another Chinese classic, was the literature recorded the disabled person [1][2]. There is no doubt that Chinese education was impacted by Confucian thoughts notably in ancient China. He presented the idea of harmony society that included help disabled civics[3]. Although the positive attitude towards to the disabled group existed, like 'those who have no kith and kin as well as the disability should be supported,' the contrary opinion was still the dominant based on the feudalistic superstition. For example, the majority believed the disabled individuals have evil powers, or they are punished because of their previous sin. Therefore, most of the people with impairments lived at the lowest social level in history [4]. The records of the education for the disabled group can be found in many Chinese classics, but these are not the special education that we are talking about nowadays. A famous Chinese expert, Chen illustrates that as a product in the modern time, the special education in China emerged in the middle and later periods of the 19th century, which profoundly impacted by the Western countries with the explicit ecclesiastical characters [5]. However, special education was trapped in long-term because of the turbulent social environment until the Open and Reform period. The New constitutional amendment required providing education and social supports to all citizens with special needs in 1982, and the Nine-year compulsory education law was enacted in 1986, which laid a solid legal foundation for the improvement of Chinese special education [6][7][8]. During the late 1980s and early 1990s, China's special education has moved towards inclusive education because of the Chinese conditions and international stream.

Through decades endeavour, special education in China has improved and received more attention than ever before. The National medium and long-term educational reform and development program (2010-2020) (the national program) emphasises concerning and supporting the special education, improving the special education system stipulates, and promoting the special education security mechanism as three core elements of the special education[9]. It reveals that more investment will be provided to encourage and help the regular schools, where enrol the disabled students, to create the appropriate learning and living conditions. Similarly, the seventh section of the 13th Five-Year Plan for National Education development demonstrates that comprehensively enhance the level of educational development and sharing to protect the educational rights of the masses with difficulties particularly to provide high-quality special education[10]. As one of the initial education goals, the development of special education draws all levels of governments' attention. It is because the status of special education development and the degree of its coordinated improvement not only present the educational development level for a country but also display the comprehensive, coordinated, and sustainable development of the society. Nowadays, the 12th Five-year plan has been done, and the 13th is in a

process, which the status of special education development is still a focus for the state as well as social communities. Under this social background, both the program and the 13th Five-year plan make the specific requirements to improve the special education, which reflects the national and local attention to special education. Therefore, finding a reasonable and adequate way to measure the level of national special education is imperative to evaluate the development trend of special education in China. Also, it will promote the development of special education rapidly, improve the educational level of the disabled individuals, and implement special education plan.

Except for the official documents, Chinese scholars also have already researched on special education widely. Zhang and Zhang in their article introduce that in the field of Chinese special education, Yongxin Piao and Yunying Piao are the famous scholars, as the pioneers and founders, who provide an essential contribution[11]. Besides, Junming Fang, Wanjin Meng, Fujian Wang, Fei Xiao, Xiaoman Wei, and Meng Deng are the 'high yield' authors in the recent fourteen years. Their studies are quoted in high frequency, and they are recognised as the experts in Chinese special education field. Zhang and Zhang conclude three research themes of Chinese studies on special education including the special education system and model, the curriculum and teaching, and the mental health of the special people. The first research topic is the most significant of all. With the development of the special education, a new pattern has been established gradually, which is the dual-track approach that the special schools as the basis and setting special classes in ordinary schools and receiving disabled students in the regular classroom as the mainstay[12]. Based on this research topic, many articles focus on a Chinese educational model for disabled students called "Learning in the regular classroom (LRC)," which means the traditional schools should accept the student with disabilities. In 1990s, after the 'education for all,' 'inclusive education,' and some other perspectives raised in the worldwide, the scholars in the field of special education in China, represented by Professor Meng Deng and Professor Fei Xiao, have started to pay attention to how to integrate such concepts into the special educational practice in China [13] [14]. Although inclusive education has own definition and is different from special education, it seems to be one of the dominant research directions in Chinese special education field. Although the government and scholars declare special education is an important section of education, many problems of special education still exist. For example, the lack of special schools, the lack of technical teachers, insufficient investment, and unbalanced resources allocation need further discussion [15].

According to the various studies on special education, it can be found thatspecial education is improving gradually, especially in people's values.

However, the special education conditions in thirty-one provinces, autonomous regions and municipalities are imbalanced because of the various economic development. Simultaneously, the allocation of educational resources is the prerequisite and basis of social justice, and the balanced development of education is one of the critical goals of national education reform. Thus, as a significant part of education, special education is deserved more attention.

To explore the development and shortage of special education in China, this paper will focus on: 1. what is the status of the educational resources' allocation in Chinese provinces, autonomous regions and municipalities? 2. what are the characteristics of the special education in Chinese provinces, autonomous regions and municipalities? This paper will be based on the multivariate statistical analysis to apply the factor analysis and cluster analysis to assess the question one and two. Finally, this paper will summarise some reasonable strategies and recommendations to further improving inclusive education.

II. THE SOURCE AND MEANING OF DATA

A. Source of Data

All data used in this paper are recorded by the Ministry of Education of the People's Republic of China in 2015 and published on its official website. There are ten main indicators are selected by this paper to assess the quality of special education in Chinese provinces, autonomous regions and municipalities. Those indicators are: the proportion of pupil (x_1), the proportion of secondary school students (x_2), the proportion of students in high schools (x_3), students and teachers' ratio (x_4), the proportion of students enter secondary schools from primary schools (x_5), the proportion of students enter high schools from secondary schools (x_6), the average of areas occupied per student (sq.m.) (x_7), the average of floor space occupied per student (sq.m.) (x_8), the average of books occupied per student (x_9), the average of digital resources occupied per student (GB) (x_{10}), the class size (x_{11}).

To choose such indicators is because they are official data used to describe and evaluate the status of special education, which covers the educational stages from primary to high school. Furthermore, these indicators not only are the description of physical facilities, but alsohumanity resources. Therefore, these eleven indicators could be a comprehensive group of data on evaluating special education.

B. Data Sorting

The indicators, proportion of pupil, secondary schools' students, and high schools' students, represent the ratio of students in each stage of special education. Those indicators can reflect the population of students with different special educational processes. The proportion of students enter secondary schools from

primary schools means in an academic year, comparing the number of secondary schools' enrolment with the number of students who graduated from primary schools. Theoretically, these two number of students should be equal in the same academic year, and the relationship between the high schools' enrolment and the number of graduations in secondary schools are similar. Those relationships mirror the development of special education in each stage in different Chinese regions and the case of students receiving special education continually.

When the percentage over 100, it would reflect the local secondary schools or high schools have enough capacity to accept students with special educational needs. In other words, we also could say those schools have a high quality of special education attracting students from other areas. Oppositely, if the percentage is less than 100, it would reveal the shortage of cultivating students with special educational needs in the local schools, which causes their low enrolment.

The indicators, x_6, x_7, x_8, x_9, and x_{10}, are aims to test the utilisation of educational facilities and resources in special schools. Finally, the class size is the specific value of the number of students in special schools and the number of classes, which is the average number of students in each class. It also reveals the students' studying and teachers' working environment. For instance, in a small size class, an individual student will receive more attention from teachers and the teachers' workload will be less than working in a big size class.

C. Analysis Method

The primary method of factorial analysis is to synthesise relative or overlapping information due to their correlation, which will make data become several independent aggregative indicators that easier analysed. It reveals the factorial analysis is a statistical approach that using few independent factors to describe the relationships among significant elements. Therefore, this method can evaluate comprehensively and has the following characteristics: (1) The number of factor variables is much less than the original variables, which can reduce the computational workload. (2) The factor variable is not to accept or reject the original one but re-construct, which can reflect significant information of the original variable. (3) The analysis of the factor variable is convenient because there is no linear correlation among such variables. (4) Naming interpretive is a characteristic of

the factor variable; in other words, it is integration and reflection of some original variables.

Another method used in this research is clustering analysis, a kind of classified multivariate statistical analysis methods, which can classify the sample data due to their characteristics. Individuals in the same category have the highest possible homogeneity, while groups should have the highest possible heterogeneity. Clustering analysis widely used in marketing, psychology, archaeology, and sociology.

III. RESULTS

This paper mainly investigates eleven indicators in thirty-one provinces, autonomous regions and municipalities, which will be a massive number of data. Thus, the author considers integrating those indicators into a few indexes utilising factorial analysis.

A. Educational Resources Allocation in Chinese

The factor analysis can be represented by the following mathematical model:

$$\begin{cases} x_1 = a_{11}f_1 + a_{12}f_2 + \cdots + a_{1m}f_m + \varepsilon_1 \\ x_2 = a_{21}f_1 + a_{22}f_2 + \cdots + a_{2m}f_m + \varepsilon_2 \\ \quad\quad \ldots\ldots \\ x_p = a_{p1}f_1 + a_{p2}f_2 + \cdots + a_{pm}f_m + \varepsilon_p \end{cases} \quad (1)$$

In this model, $x_1, x_2, \cdots, x_p$ are the normalized handling of source data (1, 2, ···, p), which the average is 0 and standard deviation is 1. $f_1, f_2, \ldots, f_m$ are the factor variables (1,2, ··· ,m) and m less than p. $\varepsilon_1, \varepsilon_2, \cdots, \varepsilon_p$, the special factors, present the original variables' portion that cannot be interpreted by factor variables.

The first part is to analyse the normalized handling of source data. It begins with the test and the results showed in the below table.

TABLE I
KMO and Bartlett Test

Kaiser-Meyer-Olkin measurement		0.669
Approximate chi-square		441.765
Bartlett Sphericity test	df	55
	Sig.	0.000

In tableI, the KMO is 0.669 greater than 0.5 and the probability of Bartlett (p) is less than significance level 0.05. Therefore, the original hypothesis is rejected, and the data is considered suitable for factor analysis. The following step is to analyse the eleven factors and obtained the results of factorial analysis (See tableII).

TABLE II
Total Variance of the Factors Explaining Original Variables

	Initial Eigenvalues			Extracting square sum and loading			Rotated square sum loading		
	Eigenvalue	Contribution rate of variance (%)	Cumulative variance contribution rate (%)	Eigenvalue	Contribution rate of variance (%)	Cumulative variance contribution rate (%)	Eigenvalue	Contribution rate of variance (%)	Cumulative variance contribution rate (%)
1	4.994	45.400	45.400	4.994	45.400	45.400	3.987	36.249	36.249
2	2.715	24.679	70.080	2.715	24.679	70.080	3.199	29.086	65.335
3	1.164	10.578	80.657	1.164	10.578	80.657	1.607	14.605	79.940
4	1.102	10.016	90.673	1.102	10.016	90.673	1.181	10.732	90.673
5	.419	3.805	94.477						
6	.234	2.123	96.600						
7	.157	1.431	98.031						
8	.136	1.233	99.263						
9	.045	.413	99.676						
10	.035	.319	99.995						
11	.001	.005	100.000						

According to the rule that eigenvalue is greater than 1, the first four elements are chosen. Their eigenvalues are 4.994, 2.715, 1.164, 1.1.02; their contribution rates of variance are 36.25%, 29.09%, 14.61%, 10.73%; and their cumulative variance contribution rates are 90.67%. It means the four extracted principle components include 90.67% information of the original variables. In general, the information loss of original variables is less, and the results of factor analysis are satisfactory relatively.

By orthogonal rotation of the factor loading matrix, the factor is given a naming interpretation, and thefactor loading matrix, after the rotation, is as the following table III.

TABLE III
Factor Loading Matrix (After Rotation)

	Factors			
	Factor 1	Factor 2	Factor 3	Factor 4
the average of floor space occupied per student (sq.m.) (x_8)	0.951	0.027	0.195	-0.003
the class size (x_{11})	-0.899	-0.174	-0.129	0.232
the average of areas occupied per student (sq.m.) (x_7)	0.897	-0.247	0.119	0.248
students and teachers' ratio (x_4)	-0.884	-0.240	-0.203	0.078
the average of books occupied per student (x_9)	0.695	0.513	0.151	-0.196
the proportion of pupil (x_1)	-0.055	-0.964	-0.091	-0.091
the proportion of secondary school students (x_2)	-0.044	0.950	-0.121	0.148
the average of digital resources occupied per student (GB) (x_{10})	0.192	0.817	0.099	-0.089
the proportion of students enter high schools from secondary schools (x_6)	0.228	-0.121	0.948	0.085
the proportion of students in high schools (x_3)	0.327	0.513	0.737	-0.166
the proportion of students enter secondary schools from primary schools (x_5)	-0.066	0.106	0.010	0.974

It can be seen in table III that indicators, x_8, x_{11}, x_7, x_4, and x_9, have sizable loads on factor 1, which means this factor can explain those five variables. The factor 2 can be a representative of the x_1, x_2, and x_{10}because their loads on this factor are considerable. Similarly, factor 3 can interpret $x_6$andx_3, and factor 4 mainly presentx_5. Thus, those four factors' meaning is clear.

According to the Component Score Coefficient Matrix, the expressions of 4 factors are obtained:

$$f_1 = 0.048x_1 - 0.029x_2 - 0.096x_3 - 0.231x_4$$
$$+ 0.035x_5 - 0.126x_6$$
$$+ 0.303x_7 + 0.272x_8 \qquad (2)$$
$$+ 0.157x_9 - 0.008x_{10}$$
$$- 0.246x_{11}$$

$$f_2 = -0.314x_1 + 0.325x_2 + 0.115x_3 - 0.022x_4$$
$$+ 0.036x_5 - 0.103x_6$$
$$- 0.138x_7 - 0.053x_8 \qquad (3)$$
$$+ 0.126x_9 + 0.257x_{10}$$
$$- 0.003x_{11}$$

$$f_3 = -0.011x_1 - 0.137x_2 + 0.490x_3 + 0.050x_4$$
$$+ 0.021x_5 + 0.716x_6$$
$$- 0.094x_7 - 0.060x_8 \qquad (4)$$
$$- 0.064x_9 - 0.007x_{10}$$
$$+ 0.110x_{11}$$

$$f_4 = -0.080x_1 + 0.123x_2 - 0.120x_3 + 0.008x_4$$
$$+ 0.837x_5 + 0.093x_6$$
$$+ 0.276x_7 + 0.062x_8 \qquad (5)$$
$$- 0.124x_9 - 0.065x_{10}$$
$$+ 0.140x_{11}$$

Taking factor variance contribution rate as the weight, the comprehensive score formula is obtainedby weighted and summed:

$$f = \frac{36.25}{90.67}f_1 + \frac{29.09}{90.67}f_2 + \frac{14.61}{90.67}f_3 + \frac{10.73}{90.67}f_4 \qquad (6)$$
$$= 0.40f_1 + 0.32f_2 + 0.16f_3 + 0.12f_4$$

Hence, the four factors and the overall score of 31 provinces and municipalities can be achieved, see tableIV.

TABLE IV
The Factors and Comprehensive Score of 31 Provinces and Municipalities

Regions	Factor 1	Factor 2	Factor 3	Factor 4	Overall	Rank
Beijing	0.105	1.663	-1.100	-1.224	0.251	10
Tianjin	0.353	0.095	3.067	-1.282	0.508	5
Hebei	2.070	-0.964	0.074	-0.635	0.455	6
Shanxi	0.279	0.603	0.198	-0.200	0.312	9
Inner Mongolia	0.666	-0.571	-0.130	0.917	0.173	14
Liaoning	1.332	0.978	1.177	0.088	1.045	2
Jilin	1.704	-0.248	-0.482	0.618	0.599	4
Heilongjiang	0.942	0.053	-0.629	0.462	0.349	8
Shanghai	-0.200	4.214	0.648	0.556	1.439	1
Jiangsu	0.392	0.313	0.405	-1.229	0.174	12
Zhejiang	0.462	0.404	0.626	-0.242	0.385	7
Anhui	-0.444	-0.909	0.469	-0.274	-0.426	22
Fujian	-0.946	-0.190	-0.308	-1.669	-0.689	29
Jiangxi	-1.196	-0.499	-0.477	0.774	-0.622	28
Shandong	1.421	0.180	-0.284	1.083	0.711	3
Henan	0.791	-0.537	-0.593	0.301	0.086	15
Hubei	1.457	-0.433	-1.293	-0.433	0.185	13
Hunan	-0.552	-0.250	-1.048	2.017	-0.226	19
Guangdong	-0.679	0.569	0.122	0.352	-0.028	17
Guangxi	0.033	-0.722	-0.993	-1.492	-0.556	26
Hainan	-0.468	-1.096	1.076	-1.100	-0.498	23
Chongqing	-1.618	0.096	-0.518	-0.038	-0.704	30
Sichuan	-1.776	-0.019	-0.579	-0.769	-0.901	31
Guizhou	-0.579	-0.831	0.143	-0.786	-0.569	27
Yunnan	-1.271	0.289	-0.884	0.486	-0.499	25
Tibet	-0.593	-1.228	2.529	2.461	0.070	16
Shaanxi	0.218	-0.372	-0.830	-0.888	-0.271	20
Gansu	-0.631	0.323	-0.314	0.578	-0.130	18
Qinghai	-1.053	-0.289	-0.496	0.788	-0.499	24
Ningxia	-0.869	-0.425	1.080	-0.317	-0.349	21
Xinjiang	0.650	-0.197	-0.655	1.098	0.224	11

The table IV presents that based on the overall score, Shanghai, Liaoning, Shandong, Jilin, Tianjin, Hebei, Zhejiang, Heilongjiang, Shanxi, and Beijing ranked on the top ten; and Sichuan, Chongqing, Fujian, Jiangxi, Guizhou, Guangxi, Qinghai, Yunnan, Hainan, and Anhui are the bottom ten.

In the comprehensive score formula, 1). Factor one, occupied 40% of weight, has the highest influence, which means the teachers' resources and physical resources per student occupied are the vital sectors in Chinese special educational development. Based on the original data, in the bottom provinces, they have the high ratio of students and teachers' and large-size classes, but low in the average of areas occupied per student, the average of floor space occupied per student as well as book occupied. 2). Factor two has 32% and shows the enrolment ratio and digital resources are significant indicators that evaluate Chinese special educational development. Shanghai and Beijing have the highest score revealing that students with special educational needs have high enrolment ratio in primary and secondary school level, and the digital resources are plentiful. Oppositely, Tibet and Hainan have the lowest score in factor two. 3). In factor 3, Tianjin, Liaoning, Ningxia, and Hainan achieve a higher score, which reflects the proportion of students with special education enter high schools from secondary schools is high. By contrast, Hubei, Hunan, and Beijing need to be promoted. 4). The last

factor, Shanghai and Liaoning are better than in other regions. It supposes that special education in primary schools is excellent and the proportion of students enter secondary schools from primary schools is the highest in China. Therefore, the major students receive special education at the primary level have an opportunity to be enrolled in secondary schools. On the other side, Fujian, Guangxi, Hainan, Tianjin, and Beijing are not good enough.

B. Features of Chinese Special Education

Based on the results of factorial analysis last section, classification can be obtained by employing a dispersion squared clustering method (ward). See the Fig. 1.

The results are divided into five groups: group 1 includes Beijing, Fujian, Guangdong, Sichuan, and Ningxia; group 2 has Tianjin, Hebei, Shanxi, Shandong, Henan, Hubei, Shaanxi, Liaoning, Jilin, and Heilongjiang; group 3 consist of Inner Mongolia, Jiangsu, Zhejiang, Guangxi, Qinghai, and Xinjiang; Shanghai, Anhui, Jiangxi, Hunan, Guizhou, and Gansu are in group 4; Hainan, Chongqing, Yunnan, and Tibet are in the last group. According to the clustering results, the regions, geographical proximity, havesimilar conditions of educational resources allocation. The geographical gap between the groups is evident.
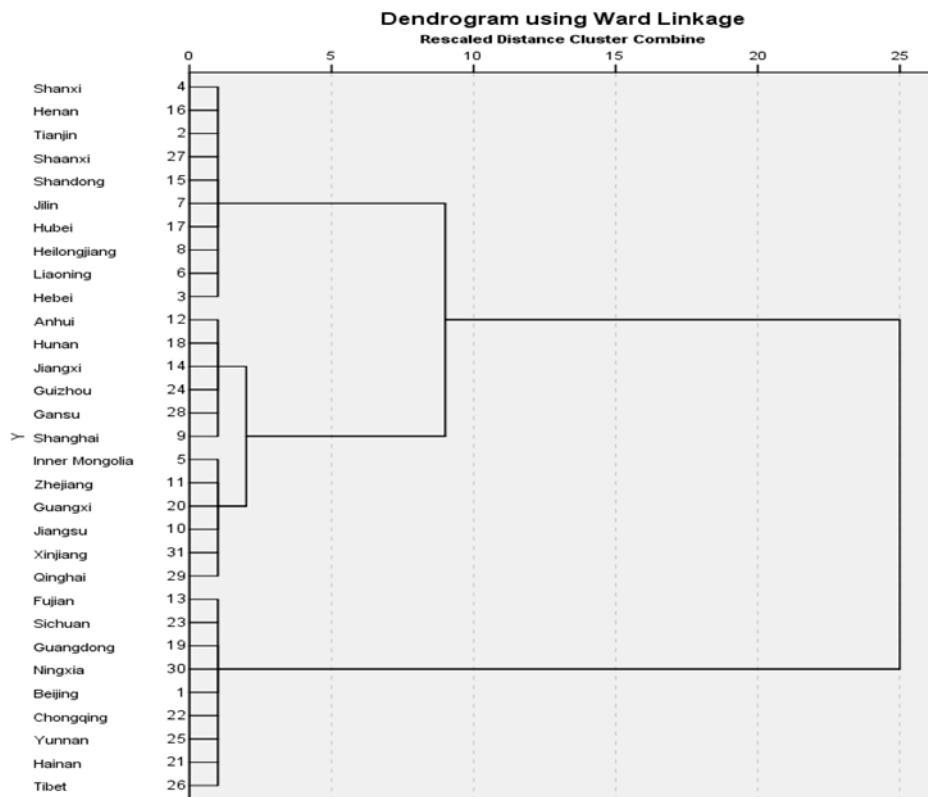

Fig. 1. Tree graph of cluster analysis results based on factor score

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Further analysing with the results of factor analysis, the conclusions can be drawn as follows:

1) The group one, except Beijing, group four and five have the minus scores on factor one below the average, particularly, in Sichuan, Chongqing, Yunnan, Jiangxi, and Qinghai. It reveals that educational investments including physical and teachers' resources and book resources have a certain gap in those five provinces. Therefore, the local governments should increase the educational investment towardsinfrastructure and special education teachers, meanwhile reduce the ratio of students and teachers' and the class size. Also, the local government should provide abundant teaching resources to those students receiving special education. Furthermore, the Ministry of Education, Provincial governments and Local Education authorities should mainly support the regions with less developed special education in their developmental planning.

2) In group two, Hebei, Jilin, Hubei, Shandong, and Liaoning achieve higher scores on factor one and other provinces all have a positive number. It reflects the class size is smaller than other regions, and students and teachers' ratio is low, which means the local special education teachers are sufficient. Theoretically, a large number of teachers will reduce the ratio of students and teachers, and the class size. Additionally, the teacher can spend more time on individuals in special education and further improve the quality of special education. Moreover, the provinces in this group also have high scores in x_4, x_7, x_8, x_9 and x_{11}.

3) Although Jiangsu and Zhejiang, in group three, belong to the south-eastern coastal regions with a high level of economic development, their score on factor one seems not to be matched. It illustrates the local government should pay more attention to special education like an investment of infrastructure and special education teachers.

4) Beijing, in group one, and Shanghai, in group four, own the high level of special education because of their excellent location, developed economy, relevant authorities' attention, high-quality resources of special education, and the entire special education atmosphere. However, from the results, it can be found that they do not have too many advantages of special education resources because the total number of students receive the special education is too large in these two cities.

IV.DISCUSSION

A. The Imbalanced Chinese Special Education

To sum up, if the imbalanced resource allocation is the inherent problem of special education, the different characteristics in each province would be the external forms. Apparently, the status of education and economy among Chinese provinces are distinct; thus, enhancing special education requires the policies that should be tailored to local conditions. Therefore, the improvement of special education cannot be achieved overnight, which not only needs support from the government, ministry of education and the entire society, but also requires a long-term accumulation of human resources and material resources.

If the imbalanced allocation of special education only depends on the economy, the South-east provinces should rank at the top. However, as the result shows, many North-east provinces in China are doing better than other regions. Although the government conducts many projects to support special education and obviously it achieves progress, China's special education still stay at a fairly low level compared with Western countries. The results also reveal that special education in early education and high school lag the period of compulsory education, which may link to the educational system. For instance, from primary school to secondary school, students do not need to pay anything, and schools should not reject anyone school age children. However, in high school, students need to pay all the tuition, and the form of education become selection instead of compulsory. This change makes the students with disabilities turn to a disadvantaged group and the threshold, usually the academic performance, becomes a reason that school reject those disabled students. Another significant condition is China does not have enough professional teachers, although the teacher is the most essential factor of special education. The lack of teachers with specific abilities causes many students' special needs cannot be satisfied. Therefore, cultivating professional teachers will be a primary step to Chinese special education.

B. Suggestion on Improving China's Special Education

1) The number of special education schools needs to be increased, which can further improve the capacity of special education. China has a vast territory and many disabled children, but, due to various reasons, the number of students in the LRC model is limited. Hence, Chinese special education needs investment from the government or other sponsors to expand the existing special schools or build new schools, which can further provide a better environment and more places to the children with special educational needs. Particularly, the funding

towards special education in remote regions should be increased, which release their stress on special education and further achieve the balanced development of special education in China.

2) China needs more professional teachers in special education in the future, and their salary should be boosted. In detailed, the local Normal university could set the curricula of special education to cultivate special education teachers. At the same time, the state gives preferential policies to special education teachers regarding the promotion of treatment and evaluation of excellence and should vigorously publicise those with outstanding achievements. Local governments should formulate similar policies to stabilise the special education teachers and attract new teachers to be willing to engage in special education.

3) Communication between areas is significant and should be strengthened, which can help every province to learn from others. Especially, the contiguous geographical regions should share experience and sources with each other. Moreover, in the province, communication among special schools can be increased as well and achieve the prosperity and development of special education.

4) Further study of special education should be promoted. All provinces need to improve the special education level, especially in the primary schools, because the basis is important. During the time of primary schools, the students' learning abilities, as well as the proportion of students, enter secondary schools from primary schools should be improved gradually. The governments need to reinforce the construction of special schools at the secondary level because an excellent connection between primary and secondary schools could make the children with special educational needs receive more education. Such special education processes have better to provide a speciality to the students, which lay a good foundation for their future.

5) The number of students with special educational needs under the LRC model should be increased or setting up the special class in primary and secondary schools, which can reinforce integrated or inclusive education in China. However, whether integrated or inclusive education does not develop well, and most schools are not willing to accept the students with special educational needs because of our examination system, evaluation system, and limited conditions. Therefore, local governments should formulate similar policies and incentive mechanisms to promote integrated or inclusive education. Having education is a right for all, so providing equal opportunity of education to every child can be treated as a reflection of a country's educational level.

C. Limitation

The time-effectiveness of the data in this paper is a limitation because the data are second hand based on the new Chinese "Five-year project" from 2015, which would not be provided year by year. Although the time-effectiveness may restrict the analysis, those data are reliable and accurately collected by government relatively.

As the results' reflection, the status of special education in China is imbalancedbut has various external characteristics because of the complex local conditions. This paper cannot provide specific advice to every single province because of various conditions in China, but by evaluating the all results above could help special education at general level.

V. CONCLUSION

The educational resources allocation is unbalanced that we can find the development of special education in Eastern China is better than the Western areas, and Northern China is better than the South of China slightly. According to factorial analysis, teacher resource could be the most significant indicator to evaluatespecial education. In other words, improving special education in China must cultivate more professional teachers in this field. Furthermore, the portion of enrolment that refers to disabled students is another core factor to evaluate special education. In this result, it could be found that the cities, doing better, are generally located in the East of China. Thus, the unbalanced allocation of special education in China is notable from East to West, and North to South.

Combining the results of the factorial analysis with clustering analysis can reveal that most provinces of South-west China need to increase their budget on infrastructure and teacher resources. By contrast, many provinces of North-east China have good conditions to support local special education. Here is an interesting point that South-east China, where is the wealthiest area, seems not to pay much attention to special education, which can be reflected by the score of the first factor. It reflects the progress of special education is not only about economic development, but largely depends on the social value. Finally, the specific examples, Beijing and Shanghai, reveal an essential characteristic of special education in China. Based on the scores, these two cities have the best resources and educational level, but the number of students offsets their advantages, which also can reflect the unbalanced resources allocation.

Currently, China's special education must tackle a lot of issues, such as educational forms and contents, quantity and quality, facility development and teachers' cultivation, traditional value and international trends. The imbalanced allocation not only refers to the resources among the provinces but also the factors in each province. Therefore, developing special education should promote every relevant factor with local conditions and cooperation among all regions. It can effectively avoid mass students with special educational needs only flow into several cities. Except for the physical investment, Chinese society should encourage citizens to build a positive value towardsthe group people who have special educational needs, which is more important than external investment.

Overall, enhancing special education is not only about repeating and imitating, but also creating and exploring an appropriate pathway that fit in the local conditions.

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