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Research Article

Balanced Allocation Method of Preschool Education Resources Based on Coordinated Development of Urban and Rural Areas *

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Abstract

As the foundation of lifelong education, preschool education is related to the sustainable development of children's life and the prosperity of the country. Its importance has been paid more and more attention by the society, and the balanced allocation of preschool education resources has gradually been put on the agenda. This paper adopts literature review method, comparative analysis method, mathematical statistics analysis method and other research methods, and takes preschool education compensation function theory, education equity theory, education resource allocation theory, etc. as the theoretical basis; it selects Shandong Province as an example, from the two dimensions of rural and urban areas, with human, financial, and material as resource allocation indicators, it compares and analyzes the allocation of preschool education resources in 13 prefecture-level cities and counties in Shandong Province, and summarizes the influencing factors that cause pre-school education resource imbalance. On this basis, this paper proposes a balanced allocation method of preschool education resources based on the coordinated development of urban and rural areas, so as to provide a reference for the balanced allocation of preschool education resources and the sustainable development of preschool education.

Keywords

Preschool Education • Resource Allocation • Coordinated Development of Urban and Rural Areas

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In recent years, the issue of education equity has received wide attention from all walks of life and from the educational theory community. Realizing education resource allocation equity is a fundamental issue for education equity (Lister, 1987). With the continuous development of China's social economy, compulsory education has been basically popularized. Preschool education, as the foundation of basic education, has received more and more attention. Preschool education is an unbridgeable stage in the development of life and an indispensable part of the education system. Whether the allocation of preschool education resources is balanced is directly related to the development of preschool education and the improvement of preschool education quality (Clack, Baty, Perrin, & Eddleston, 2010). However, the problem of unbalanced resource allocation in preschool education in China is quite prominent, therefore the sustainable development of preschool education is constrained.

Han Zongli was the first to use the term education resources in China (Soyibo, & Sang, 1986). Then Gu Mingyuan, Wang Shanmai, and Li Zuchao gave their definitions of education resources separately (De Valenzuela, Copeland, Qi, & Park, 2006), but as the connotation of education resources becomes richer, the concept of education resources is also constantly updated. By summarizing, this paper defines the preschool education resources as the consumption of human, financial and material resources in the process of preschool education, while the allocation of education resources is to achieve sustainable, coordinated and healthy education development, and to reasonably allocate the limited resources so that they can be utilized effectively (Magnuson, Meyers, Ruhm, & Waldfogel, 2004). Xi Yongsheng, Liao Haoran, Li Jianning et al. conducted empirical researches on the urban-rural differences in the development level of early childhood education, the unbalanced development of early childhood education and countermeasures, and the differences in education resources of early childhood education (Barnett, 1992). In order to ensure preschool education equity, United Kingdom, United States, Japan and other countries adopt different national plans or apply preschool education compensation theory or even legislation method to ensure every child of preschool age could have the opportunity to receive preschool education, meanwhile, they also formulated related provisions for the training of kindergarten teachers and their professional growth (Barnett, 2010). However, because the allocation of preschool education resources received attention from people later than the compulsory education and the higher education, and the degree of attention is limited, there are few studies about it, and most related studies are summative and qualitative descriptions from a macro perspective, not empirical researches (Cascio, 2013).

Based on the above analysis, in order to promote balanced allocation of preschool education resources and enrich studies on preschool education equity, this paper investigates the preschool education development of 13 prefecture-level cities and counties in Shandong Province, and adopts mathematical statistics analysis to classify and analyze education resource allocation situation in Shandong Province, and sorts out the factors affecting the allocation of preschool education resources in Shandong Province. According to these, the countermeasures and suggestions for the balanced allocation of preschool education resources based on the coordinated development of urban and rural areas are proposed.

Survey on current situation of preschool education resource allocation

Current status of human resource allocation in preschool education in Shandong Province

The skill level of kindergarten teachers directly affects the quality of preschool education. The student-teacher ratio can reflect the sufficiency of teacher resources in a kindergarten (Pianta, Barnett, Burchinal, & Thornburg, 2009). Figure 1 shows the comparison of student-teacher ratio in 13 regions of Shandong Province. It can be seen from the figure that the gap between student-teacher ratio in different regions is large, and the shortage of teacher resources will seriously restrict the development of preschool education.

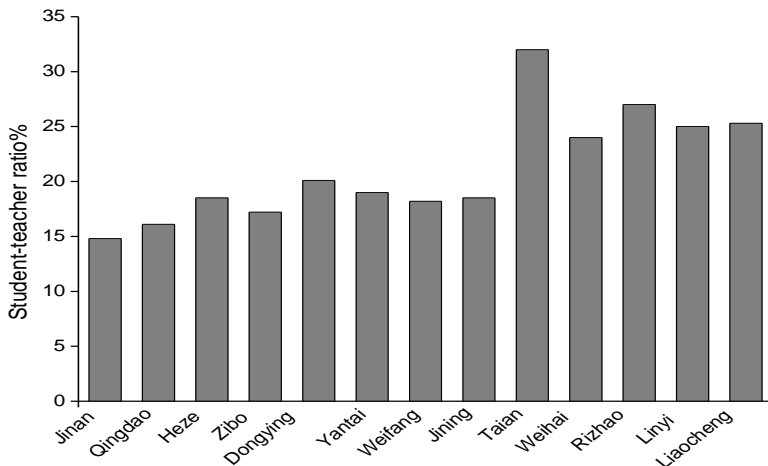


Figure 1. Comparison of student-teacher ratio in 13 regions of Shandong Province.

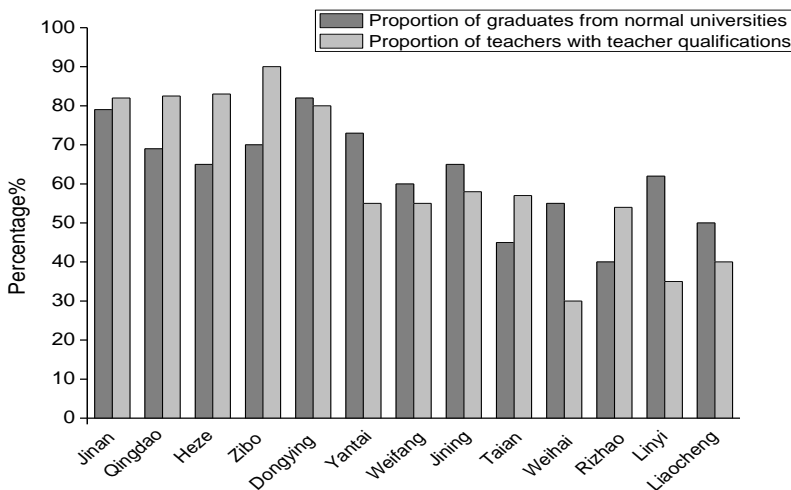


Figure 2. Proportion of teachers who are graduates from normal colleges and universities and proportion of teachers with teacher qualifications in preschool education

After trained by normal colleges and universities, kindergarten teachers can understand and master the necessary professional knowledge and educational skills for early childhood teaching. The teacher qualification certificate can also reflect the professionalism and skills of a teacher to a certain extent. Therefore, these two indicators can comprehensively reflect the teaching quality of kindergarten teachers (Temple, & Reynolds, 2007). From the survey results shown in Figure 2, it can be seen that in the regions of Shandong Province, there is a significant difference in the proportion of teachers who are graduates from normal colleges and universities and the proportion of teachers with teacher qualifications, in the figure, the difference between the city with the highest proportion of normal professional teachers (Dongying) and the city with the lowest proportion of normal professional teachers (Liaocheng) is about 30%, and the difference in teacher qualifications is as high as 60%.

Current status of financial resource allocation in preschool education in Shandong Province

Educational expenditure is related to the normal implementation of school teaching activities. It is an important indicator to measure preschool education equity and a basic indicator reflecting the equilibrium of education investment (Fridin, 2014). It can be seen from the comparison of the per-student average public expenditure of Shandong Province in Figure 3 that Jinan City is the highest in the province, while Liaocheng is the lowest in the province, the gap between the highest and lowest values is quite big, and there are also big gaps in the per-student average public expenditures of other cities.

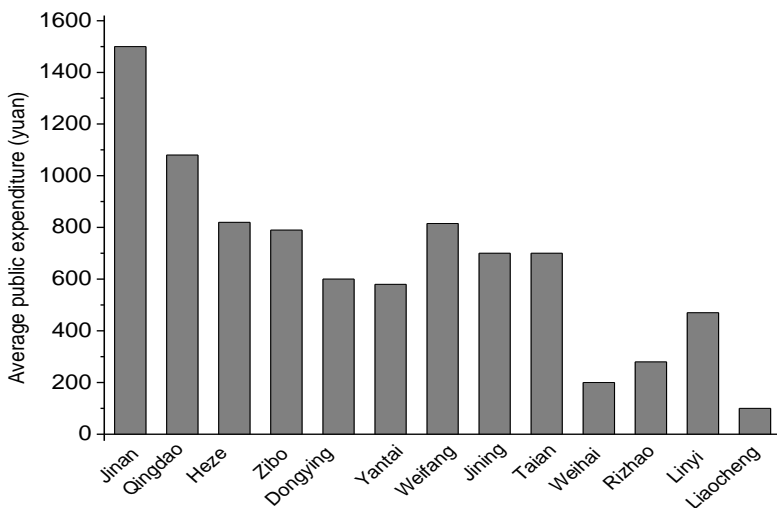


Figure 3. Comparison of per-student average public expenditures of 13 regions in Shandong Province

Figure 4 shows the sources of per-student average public expenditures, it can be seen from the figure that in the sources of the per-student average public expenditures of 13 regions, the proportion of financial investment and departmental investment in most areas is very small. Only Zibo City has a proportion of financial investment higher than the kindergartens' self-collected investment, while in other regions, the funding is mainly self-collected by kindergartens, indicating that Zibo City had attached great importance to the development of preschool education.

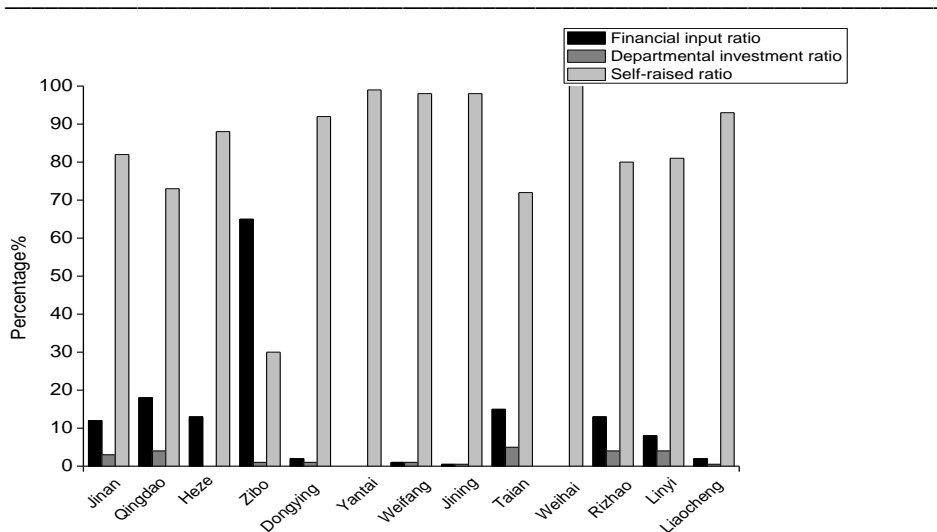


Figure 4. Comparison of sources of per-student average public expenditures in 13 regions of Shandong Province

The survey results in Table 1 show that the annual per-student average fees for different kindergarten systems are quite different, the charges of high-quality kindergartens are the highest, but most high-quality kindergartens are run by the state, they receive more financial support, while kindergartens in villages or communities are run by private owners, they receive little financial investment, and the government would charge them of corresponding taxes, while makes it difficult for them to survive.

Table 1
Annual per-Student Average Fee for Different Kindergarten Systems

	Provincial high-quality kindergartens	City high-quality kindergartens	Qualified kindergartens	Village kindergarten	Community kindergartens
Annual per-student average fee in the region	3058.205	2445.147	1569.36	765.6578	699.2432

According to the survey results shown in Figure 5, the wage gap of kindergarten teachers in various regions of Shandong Province is also large, and wage directly impacts their enthusiasm for teaching. Social status and wage of kindergarten teachers in public kindergartens are much higher than those of contract teachers and private kindergarten teachers. As shown in Table 2, the average annual employment salary of public kindergarten teachers is five times that of rural private kindergarten teachers.

Table 2
Annual average fee for different kindergarten systems

	Public kindergarten teacher	City kindergarten teachers	County kindergarten teachers	Rural private kindergarten teachers
Average annual salary of teachers	38748.75	12964.48	11488.52	7645.96

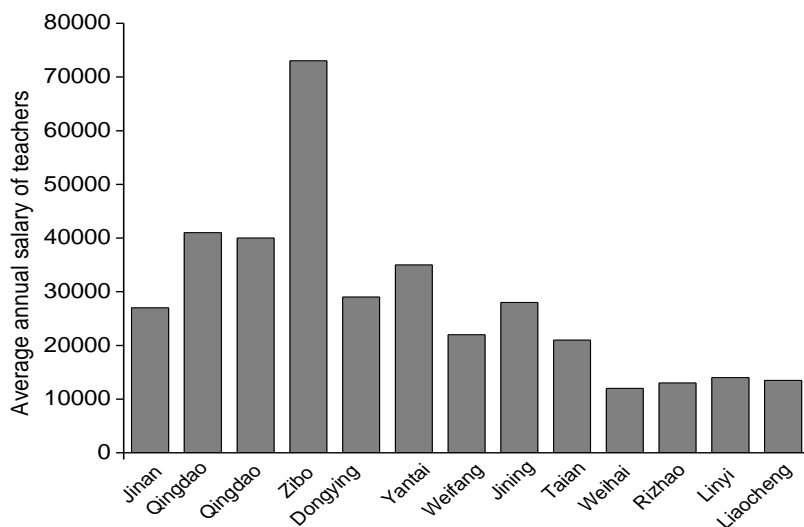


Figure 5. Comparison of average annual salary of kindergarten teachers in 13 regions of Shandong Province

Table 3

Comparison of the Ratio of Different Level Kindergartens in 13 Regions of Shandong Province

Municipal level	Provincial high-quality kindergarten ratio	City high-quality kindergarten ratio	Qualified kindergarten ratio	Unqualified kindergarten ratio
Jinan	64.9	15.9	18.8	0.4
Qingdao	57.2	22.1	19.8	0.9
Heze	67.4	11.9	17.8	2.9
Zibo	62.6	26.1	10.8	0.5
Dongying	54.2	20.9	23.8	1.1
Yantai	50.6	24.9	21.2	3.3
Weifang	44.3	19.7	32.0	4.0
Jining	47.5	25.1	23.9	3.5
Taian	28.6	19.9	27.6	23.9
Weihai	28.4	20.2	24.3	27.3
Rizhao	28.9	22.3	24.9	23.9
Linyi	30.7	18.9	21.8	28.6
Liaocheng	21.3	20.8	32.9	25

Current status of material resource allocation in preschool education in Shandong Province

The material resource allocation of preschool education is consisted of school buildings and teaching facilities, specifically, it includes indoor and outdoor venues, greenbelts, sports equipment, children's books, and faculty books. Different assessment levels have different requirements for the corresponding facilities of the school (Ho, 2006). Table 3 shows the ratio of provincial high-quality kindergarten, city high-quality kindergarten, qualified kindergarten and unqualified kindergarten in 13 regions of Shandong Province. It can be seen that, the highest ratio of unqualified kindergarten reaches 28.6%, and the lowest is only 0.4%, teaching facilities equipped in these kindergartens are relatively simple, and there may be no books or sports venues

suitable for children, or there may be only one classroom. Therefore, the teaching condition is an important factor restricting the development of preschool education.

Unbalanced status of resource allocation in preschool education in Shandong Province

According to the above survey results, the method of cluster analysis (Ramey, 1999) was used to classify the allocation of preschool education resources in 13 regions of Shandong Province into five categories. As shown in Table 4, it can be seen that the allocation of preschool education resources in Zibo City is the first in Shandong Province. Except for the per-student average public expenditure and the proportion of normal professional teachers, its other indicators are the best. The imbalance of education resource allocation in Shandong Province is quite serious. After further analysis, it is found that due to factors such as huge differences in government financial investment, teacher resources and teaching facilities in urban and rural areas, the supporting facilities of county and village kindergartens are insufficient, and the kindergartens there are mostly private or school kindergartens, the teachers are mainly technical secondary school graduates or high-school graduates, and they have no teacher qualification certificate, which seriously affects the development of preschool education.

Table 4
Cluster Analysis Results

Regional type	Region name	Percentage of the total sample
Class I area	Zibo	7.7
Class II area	Jinan, Dongying	15.28
Class III area	Qingdao, Heze, Jining	23.17
Class IV area	Weifang, Linyi, Taian	22.09
Class V area	Weihai, Rizhao, Linyi, Liaocheng	31.76

Analysis of influencing factors for unbalanced resource allocation in preschool education in Shandong Province

Economic factors

The government's financial support is an inexhaustible driving force for the development of preschool education, and the government's financial capacity is closely related to the overall level of economic development in the regions. Therefore, one of the main factors resulting in the imbalance of resource allocation in preschool education in Shandong Province is the uneven regional economic development (Kwon, 2003), the level of regional economic development directly determines the per-student average public expenditure allocated to the region under its jurisdiction.

Policy factors

Anything's development is inseparable from the institutional environment in which it exists, and the issue of preschool education resource allocation is no exception. Initially, China's preschool education was based on the principle of efficiency first while equity should also be considered (Shucksmith, Shucksmith, & Watt, 2010), and at that time, the education resource allocation is relatively balanced. With the reform of the economic system, the number of public kindergartens has decreased drastically, and private kindergartens have appeared

in large numbers. However, due to the lack of government financial support, the imbalance of resource allocation in kindergartens has become increasingly prominent, resulting in an increasing gap between urban and rural areas and regional disparities (Smith, & James, 1975). Although the state requires all levels of government to support the kindergarten units, it does not clearly define the proportion of financial support, making the counties and villages unwilling to undertake the responsibility of running the kindergartens, and the quantity and quality of preschool education is also worrying (Vasconcelos, 1997).

Countermeasures and suggestions for balanced allocation of preschool education resources based on coordinated development of urban and rural areas

Clarify concept of preschool education resource allocation equity

For a long time, people have put their work emphasis on compulsory education and high school education, while neglected the importance of preschool education. Therefore, we must first correct our perception and recognize that preschool education is an important and indispensable part of the national education system. It is necessary to comprehensively apply economic, policy and administrative measures; establish a correct preschool education resource allocation concept, and at the same time, gradually reduce the current imbalanced status of preschool education resource allocation, and achieve balanced development of preschool education resources in urban and rural areas.

Strengthen coordinated economic development of urban and rural areas

“Local government takes charge, hierarchical management, with counties as orientation” is China’s current education investment system (Levine, 2005), and the fundamental factor restricting government investment in preschool education is the economic development level, therefore, achieving balanced allocation of preschool education resources in urban and rural areas is essentially to realize the coordinated economic development of urban and rural areas. Vigorously promoting economic development of underdeveloped areas in counties and towns requires governments at all levels to improve their independent innovation capabilities, optimize industrial structure, and strengthen inter-regional cooperation.

Clarify government responsibilities and increase financial investment for preschool education

Preschool education has a significant public welfare characteristic. Achieving balanced allocation of preschool education resources has a long-term and huge impact on maintaining social stability, promoting social equity and sustainable social development, and the government is the first responsible person to achieve preschool education equity and social justice. Therefore, the government should clarify the specific proportion of preschool education funds in the financial education funds, treat the public kindergartens and private kindergartens equally, gradually establish a per-student average financial subsidy system, and set up special financial funds to support construction of kindergartens and faculties in less developed areas.

Strengthen construction of preschool education faculties

The teaching ability of preschool teachers will directly affect the quality of preschool education. Therefore, it is essential to build a well-structured faculty with sufficient teacher resources for the development of preschool education. The government should guarantee the salary and social status of kindergarten teachers, no matter it's a public or private kindergarten, the teachers' staffing, salary, social security policies and other relevant remuneration should be the same, and the teachers should not be treated differently. At the same time, we should establish a kindergarten teacher cultivating and training system, as well as an urban-rural kindergarten teacher exchanging program so as to narrow the gap between urban and rural preschool education development.

Conclusion

The balanced allocation of preschool education resources is directly related to the balanced development of preschool education. With the continuous development of economics, the imbalance of preschool education resources between different regions and between urban and rural areas has gradually attracted people's attention. Therefore, based on the related references at home and abroad, this paper studied the balanced allocation method of preschool education resources based on the coordinated development of urban and rural areas. The specific conclusions are as follows:

(1) This paper took 13 regions in Shandong Province as examples, from the two dimensions of rural and urban areas, and from aspects of student-teacher ratio, normal professional teacher ratio, ratio of teachers with teacher qualifications, per-student average public expenditures and the sources, teachers' treatment, school building conditions and teaching facilities, it analyzed the current status of preschool education resource allocation in Shandong Province, and the survey results showed that the imbalance of resource allocation in preschool education in Shandong Province was serious.

(2) Based on the survey results, the factors affecting the imbalance of preschool education were analyzed from the aspects of economy and policy.

(3) This paper proposed that we should promote and innovate the balanced allocation of preschool education resources from four aspects: the concept of preschool education resource allocation equity, coordinated development of urban and rural economy, increasing financial investment in preschool education, and strengthening faculty construction of preschool education.

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