

Variations of “Large Class Size” in Chinese Elementary Schools and Analysis of Policy Factors

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Abstract

This research aims to analyze variations of “large class size” in Chinese elementary schools and the influences of education policies on it. Through SPSS21.0, Independent-Samples T Test is adopted to analyze the continuous eleven years” data in “Chinese Educational Statistics Yearbook (2001-2011)”, and the findings are as follows. Firstly, the number of “large class size” in elementary schools presents obvious variations. Secondly, the absolute number of “large class size” in elementary schools shows large fluctuations, while the proportion of “large class size” in elementary schools constantly increases. Thirdly, obvious variations appear in the spatial distribution of the number of “large class size” in elementary schools. “Large class size” in elementary schools has already transferred from urban and rural areas to counties and towns, and the number and proportion of “large class size” in elementary schools in counties and towns has exceeded the sum of that in urban and rural areas. Fourthly, variations of “large class size” in elementary schools result from “closing and merging schools” policy and “two priorities” policy in China.

Key words: Large class size; Elementary schools; New trend; Education policy

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INTRODUCTION

Since 2000, China has launched a variety of reforms of compulsory education, especially elementary education, such as New Curriculum Reform of Elementary Education, Balanced Development of Compulsory Education and Reform of Quality-Oriented Education. It should be noted that small-sized class education is a part of elementary education reform experiment and promotes implementation of quality-oriented education (Fu, 2012). Though education administrations at different levels have developed multiple preventive measures, in reality the problem of “large class size” in Chinese elementary schools is still serious (He, 2011).

A. Small-Sized Class Is an Important Part of International Education Reform and Research

Theoretical studies of class size reduction have started in America since the 1970s, (Lu, 2001) and reforms have been carried out in some states. For example, Tennessee State started Student-Teacher Achievement Ratio (STAR) Project in 1985, which was an education experiment of the influence of class size on student achievement. Experimental results show that positive correlations exist between class size reduction and student achievement, and small-sized class is more advantageous than large-sized class in lower grades. Therefore, it was called as one of the greatest experiments in American education history by Mosteller and Light and Sachs. American scholars, G. V. Glass and M. L. Smith, conducted a research of relationship between class size and student achievement by the means of meta-analysis, leading to the finding of “Glass-Smith Curve”, which means within a certain limit the smaller the class size, the better the student achievement. (Glass & Smith, 1982) Ferguson and Wenglinsky’s research supported this conclusion. (Lu, 2001)

B. “Large Class Size” Is an Obstacle to Implementation of Quality-Oriented Education in China

The problem of “large class size” in elementary schools poses challenges to balanced development of compulsory education in China, and it also remains a large obstacle to implementing quality-oriented education. Studies show that large class size restricts teachers’ instructional mode (Ye, 1995), hinders personalized instruction (Ye, 2000) and negatively influences teachers’ mental health (Chen, 2000).

C. “Large Class Size” in Chinese Elementary Schools Presents New Variation Tendencies

In 2002, the General Office of the State Council clearly stated that the class size in urban elementary schools should be 40 to 45 students, in rural elementary schools reduced discretionarily.¹ Measures should be taken to control the class size under 55 students and curb the trend of “large class size” in some elementary and secondary schools. However, the proportion of “large class size” in Chinese elementary schools is still increasing year after year. Compared with that in 1991-2000, variations of the number of “large class size” in 2001-2011 are more obvious and disordered, and there are new changes appearing in its spatial distribution. It is found that variations of “large class size” in Chinese elementary schools are related with two policies implemented in this period. One is “Decisions of Elementary Education Reforms and Development” in March 2001, officially stating that school layout of rural compulsory education should be adjusted to local conditions and rural elementary schools should be moderately merged, which marked the beginning of another round of “closing and merging schools”. The other is “Opinions of Further Improvement of Migrant Children’s Compulsory Education” in 2003, aiming at facilitating migrant children entering local schools, which clearly stated that local government and full-time public schools should take the priority to ensure migrant children’s access to education.

In conclusion, for the sake of quality-oriented education in China, it is of vital importance to pay attention to the “large class size” in elementary schools. To solve the problem of “large class size” in elementary schools, it requires thorough consideration of the relationship among education reform policies.

1. RESEARCH DESIGN AND METHODS

1.1 Selection of Index

This research mainly focuses on the problem of “large

class size” in Chinese elementary schools, the essence of which is “class size”, that is “the number of students in a certain class or teaching group under the guidance of a certain teacher”. (Science and Education Press, 1990) However, different countries have different definitions of “class size”. In the research, “large class size” is defined as a class of 56 students or above, and proportion of “large class size” is referred as the percentage “large class size” accounts for of the total number of classes in elementary schools in an area.

1.2 Source of Data

This research collects the continuous eleven year’s data from “Chinese Educational Statistics Yearbook (2001-2011)”. The data includes the number of classes in urban and rural elementary schools (2001-2011), and the number of “large class size” (2001-2011), the latter is the sum of the number of classes of “56-66 students” and “over 66 students” in 2001-2011. All the data are analyzed by means of SPSS21.0.

2. STRUCTURAL VARIATIONS OF THE NUMBER OF “LARGE CLASS SIZE” IN CHINESE ELEMENTARY SCHOOLS

2.1 Time Distribution Variations of Number of “Large Class Size” in Elementary Schools

In terms of absolute quantity (Figure 1), in 2001-2011, the absolute number of “large class size” in elementary schools present fluctuations. Since 2001, it has been a “decrease-increase-decrease” process. In 2003, the number of “large class size” in elementary schools was 376,561, reaching the lowest during the recent 11 years, which in 2006 peaked at 412746. In terms of different stages, the number of “large class size” in elementary schools showed a rapid growth in 2003-2006, while it was decreasing from 2007 to 2009. Since 2010, it has resumed gradual growth. From this, we can see that there isn’t an obvious and consistent trend of quantity variations of “large class size” in Chinese elementary schools.

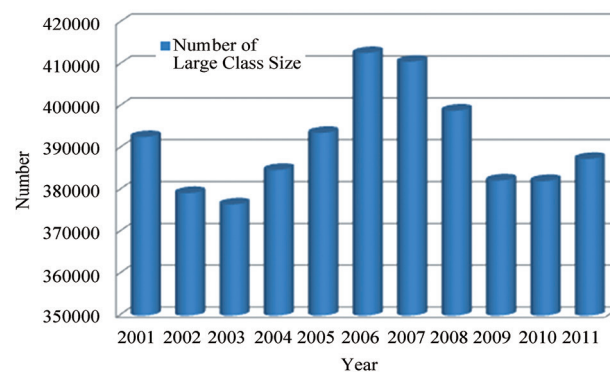


Figure 1
Number of “Large Class Size” in Chinese Elementary Schools in 2001-2011

¹ General Office of the State Council. (2002). Notification of establishing teaching and administrative staff quota standards in elementary and secondary schools.

Different from fluctuations of the absolute number of “large class size” in elementary schools, the proportion of “large class size” in elementary schools keeps increasing. In 2011, the proportion of “large class size” in Chinese elementary schools reached 15.02%, which meant in every 100 classes there were 15 classes of 56 students or above in Chinese elementary schools.

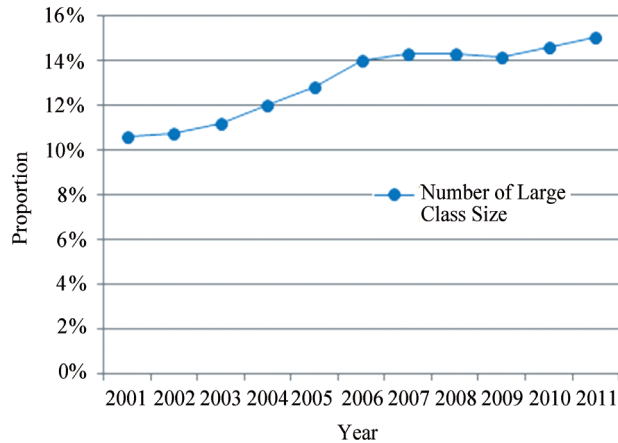


Figure 2
Proportion Variations of “Large Class Size” in Chinese Elementary Schools in 2001-2011

2.2 Spatial Distribution Variations of Number of “Large Class Size” in Chinese Elementary Schools

According to Figure 3, in 2001-2003, in the perspective of spatial distribution, elementary schools in rural areas have the largest number of “large class size”, followed by counties and towns and urban areas. Since 2004,

the spatial distribution of “large class size” in Chinese elementary schools started to change, the number of “large class size” in elementary schools in the counties and towns has been increasing dramatically, in rural areas decreasing rapidly, and in urban areas slightly fluctuated.

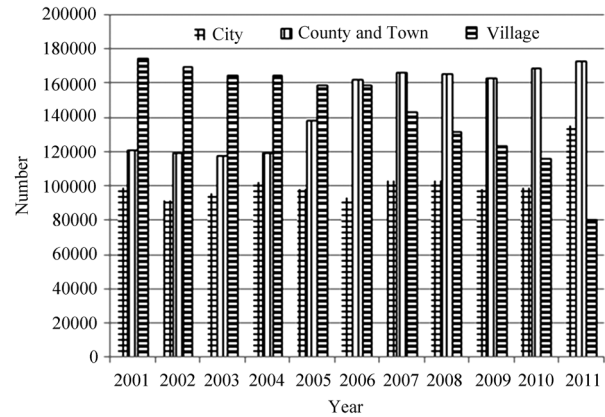


Figure 3
Spatial Distribution of “Large Class Size” in Chinese Elementary Schools in 2001-2011

At the end of 2011, the number of “large class size” in Chinese elementary schools was 387,451, among which that in urban areas was 135,050 accounting for 34.86% of the total number, in counties and towns was 172,329 accounting for 44.48%, in rural areas was 80,072 accounting for 20.67%. Compared with data in 2001, in 2011 the proportion of “large class size” in elementary schools in counties and towns increased by 13.81%, that in rural areas decreased by 23.68% (see Figure 4).

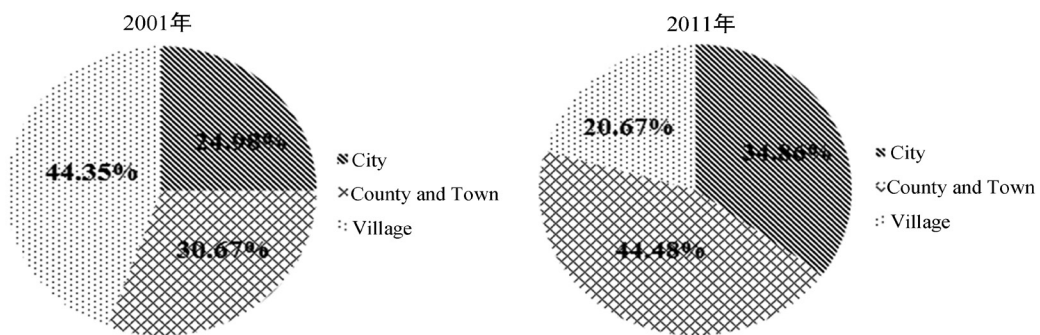


Figure 4 Spatial Distribution of Number of “Large Class Size” in Chinese Elementary Schools in 2001 and 2011

2.3 Difference Tests of “Large Class Size” in Chinese Urban-Rural Elementary Schools

Compared with that in the last ten years (1991-2000), there are three new trends of “large class size” in Chinese elementary schools. Firstly, the quantity variations of “large class size” in elementary schools present high fluctuations. Secondly, in the perspective of absolute number or proportion, “large class size” in elementary schools mainly abounds in counties and towns in China.

Thirdly, the proportion of “large class size” in rural elementary schools remains stable.

Differences exist in the growth trend of “large class size” in elementary schools in urban and rural areas, counties and towns. It is worth reflecting on whether these differences are normal phenomena resulting from natural increases of population in urban and rural areas, counties and towns, or related with any other factors. This research conducts Independent Samples *T* Test on

variations of annual growth rate of “large class size” in elementary schools in urban and rural areas, counties and towns. Results are as follows. *T* test result between urban areas and counties and towns ($t=-2.64, P=.027<.05$) show that annual growth rate of “large class size” in elementary schools in counties and towns is larger than that in urban areas, difference of which is significant. *T* test result between urban and rural areas ($t=27.1, P=.000<.05$) show that annual growth rate of “large class size” in elementary schools in urban areas is larger than that in rural areas, difference of which is significant. *T* test results among urban and rural areas and counties and towns all show significant differences, which mean that quantity variations of “large class size” in elementary schools in urban and rural areas and counties and towns are not natural phenomena but influenced by any other abnormal factors.

Table 1
***T* Test of Annual Growth Rate of “Large Class Size” in Elementary Schools Among Urban and County and Rural Areas**

| | Means | Standard deviation | <i>t</i> | <i>df</i> | Sig. (2-tailed) |
|---------------------------|-------|--------------------|----------|-----------|-----------------|
| City-county and town | -.019 | .023 | -2.64 | 9 | .027* |
| City - village | .193 | .022 | 27.1 | 9 | .000* |
| County and town - village | .212 | .039 | 16.9 | 9 | .000* |

Note. Data specification: “*” means $P<.05$

3. EFFECTS OF EDUCATION POLICIES ON VARIATIONS OF “LARGE CLASS SIZE” IN CHINESE ELEMENTARY SCHOOLS

Imbalance between supply and demand, especially the unbalanced distribution of high quality educational resources, is the reason why “large class size” exists. However, the structural variation trends of “large class size” in Chinese elementary schools in the recent eleven years have something to do with education policies. Analyzing the policies of Chinese elementary education in the last eleven years leads to the finding that policies of “closing and merging schools” of rural compulsory education and “two priorities” of migrant children’s education directly influence variations of “large class size” in elementary schools and are the key factors in the structural distribution variations of “large class size” in elementary schools.

3.1 Policy of Layout Adjustment of Rural Elementary and Secondary Schools (“Closing and Merging Schools”)

In the mid-1990s, China started to carry out “closing and merging schools” policy in rural elementary and secondary schools, especially in central and western China. In March 2000, the Central Committee of the Communist Party of China and the State Council focusing

on rural education system reform released “Notification of Experimental Reform of Rural Taxes and Administrative Charges”, and proposed moderate merging of rural schools and reorganization of teachers. In March 2001, the State Council released “Decisions of Elementary Education Reforms and Development”, officially put forward that school layout of rural compulsory education should be adjusted to local conditions and rural elementary schools should be moderately merged, which marked the beginning of another round of “closing and merging schools”.

Policy of “closing and merging schools” influences the time distribution of number of “large class size” in elementary schools. Closing and merging schools directly result in a sharp decrease in the number of elementary schools. According to statistics, in 2001-2010, 233,863 elementary schools have been closed and merged, accounting for 47.6% of number of elementary schools in 2001. During this period, the number of rural elementary schools has decreased by 205,304, accounting for 87.8% of the total number of nationwide elementary schools closed and merged. However, the enrollment in rural elementary schools has decreased by 30% year on year, and the reduction of rural elementary schools is far more than that of enrollment in rural elementary schools, which results in a larger supply and demand tension. A surge in “closing and merging schools” happened in 2001-2006, during this period the number accounted for 60% of that in these ten years, while the demand of students’ school attendance hadn’t decreased, which meant every school held more students, the number of “closing and merging schools” had been constantly increasing, to some extent leading to the ever-increasing number of “large class size” in elementary schools.

Policy of “closing and merging schools” also influences the spatial distribution of number of “large class size” in elementary schools. This policy has changed Chinese tradition of “elementary schools run by villages, secondary schools run by towns and high schools run by counties”, a large number of elementary schools run by villages were closed, and then the students flowed into elementary schools run by counties, resulting in a dramatic expansion of class size in county elementary schools, at the same time county elementary schools were closed and merged, Leading to the reduction of county elementary schools, which explained the reason why the number of “large class size” in county elementary schools dramatically increased. With the growth of number of “closing and merging schools” in rural elementary schools, the number of “large class size” in county elementary schools constantly increased, therefore, there was a rapid decrease in the number of “large class size” in rural elementary schools and a sharp increase in that in county elementary schools.

Not only the policy of “closing and merging schools” in rural areas but also the policy of migrant children’s “two

priorities” influences quantity variations of “large class size” in elementary schools in the counties and towns.

3.2 Policy of Migrant Children’s “Two Priorities”

The statistical data show that in 2012 there were 0.26 billion migrant workers in China, followed by a growing number of migrant children. According to data of the 5th census in China, “migrant children under 14 (school age of elementary school) of rural household registration account for 74%”, of which conservative estimate is 20 million (Department of Education, 2009). 65.13% of migrant children flow inside the province, meaning mainly flowing from rural areas to the county and urban areas inside the province.

Data in some provinces show that there were a great number of migrant children, accounting for a large proportion of the total number of local children. For example, in Tianjin there are 0.201 million migrant children, accounting for 12.84%, in Jiangsu 1.177 million, accounting for 12.06%, in Zhejiang 1.411 million, accounting for 14.51%, in Fujian 1.014 million, accounting for 12.08%. Before the policy of migrant children’s “two priorities” was released, it was quite difficult for migrant children to enroll in a local public school, so they usually went to migrant children’s school. Since the policy of “two priorities” was released in 2003, the number of migrant children local full-time public schools enroll has kept increasing. At the end of 2006, 45% of 0.201 million migrant children in Tianjin had enrolled in full-time public schools, 50.9% of 1.177 million in Jiangsu, 28,741 migrant children had enrolled in public schools in Wuhou District in Chengdu, accounting for 40.7% of the total number, which meant the school size was to increase by almost 50% (Statistics Office of Wuhou District in Chengdu). After the release of the policy, many migrant children flow into public schools run by counties which result in the constant expansion of “large class size”. That means the elementary school size in those areas is to increase by almost 12%, in Shanghai increase by 30%.

In the conclusion, in 2003-2006 migrant children flowing to public schools in the counties and towns is the reason why the number of “large class size” in elementary schools in the counties and towns increased sharply during this period, which demonstrated the significant influence of “two priorities” policy on rapid growing number of “large class size” in elementary schools in counties and towns in 2003-2006. This policy is still in force, more and more migrant children will certainly enroll in the local public schools, if the forceful measures are not taken, the situation of “large class size” in elementary schools in the counties and towns will face further deterioration.

CONCLUSION

Through analysis of official data, the research conclusions are as follows:

(a) The absolute number of “large class size” in Chinese elementary schools is decreasing, the proportion of which is increasing. The number of “large class size” in Chinese elementary schools presents fluctuations. Compared with the peak, the number in 2011 has decreased by nearly 30,000. The proportion of “large class size” in Chinese elementary schools has increased from 10.59% in 2001 to 15.02% in 2011.

(b) The problem of “large class size” in Chinese elementary schools has transferred from rural areas to counties and towns. The problem of “large class size” in rural elementary schools has relieved to some extent, because it has transferred to counties and towns. In 2001-2005, elementary schools in rural areas have the largest number of “large class size”, followed by counties and towns, and urban areas. In 2006-2010, elementary schools in counties and towns have the largest number of “large class size”, followed by rural and urban areas. In 2011, elementary schools in counties and towns have the largest number of “large class size”, followed by urban and rural areas. The number of “large class size” in elementary schools in rural areas has decreased by 54.03%, that in counties and towns has increased by 43.09%, that in rural areas has increased by 37.67%.

(c) Variations of “large class size” in Chinese elementary schools are largely influenced by education policies. The problem of “large class size” in Chinese elementary schools is not only related with the imbalance between school supply and demand, but also the orientation of education policies. Although the policy of “closing and merging schools” has optimized educational structure, integrated the educational resources and improved the school effectiveness in rural areas to some extent, it has objectively led to the shortage of educational resources in counties and towns and urban areas. At present elementary schools in county areas abound with “large class size”, and one of the most important reasons is implementation of migrant children’s “two priorities” policies. This policy aims to facilitate migrant children’s enrollment in local public schools. A large amount of labor transfer in China abounds in counties, therefore, on one hand, the policy of migrant children’s “two priorities” guarantees migrant children’s access to education, on the other hand, this policy has aggravated the burdens of local elementary and secondary schools, as well as the contradiction between enrollment demand and school load, resulting in increase of “large class size”.

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