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## Chinese Students' Academic Achievement Differentiation and its Affecting Factors--Based on Data Analysis of CEPS

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### **Abstract:**

Nowadays, the academic achievement differentiation of Chinese students at school is a process of human-caused succession in some sense and has a considerable relevance to the social class difference, urban-rural difference, difference in father's/mother's education level and occupation, and gender difference. Research data show that, on the whole, students who are from the upper-middle class of the society, urban areas, or the family where the father or the mother has higher education level and takes up the occupation requiring more knowledge reserve undoubtedly have an obvious advantage in possessing and utilizing various high-quality educational resources and make a more outstanding academic performance. Yet, the effect of gender difference on academic differentiation still needs further data for verification.

**Key Words:** Academic achievement differentiation, Gender difference, Urban-rural difference, Social class difference, Differences in father/mother's education level and occupation.

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## INTRODUCTION

Is school education a cultivating mechanism or a selective mechanism; is it a guarantee of social fairness or an accelerator of social differentiation; is it a reconstructor of the established social order, or a defender thereof? For a long time, such focus questions have attracted much attention of domestic and overseas educationists, sociologists, politicians, and even the whole society. The reason why we probe into such questions is that we have a more fundamental question to be answered, i.e. are the various differentiation phenomena that the students manifest at school caused by personal intelligence and psychological factors or by school environment, family environment, and even the overall social environment? In other words, are the differences that the students manifest at school as the result of a process of natural development or a process of human-caused succession? From the perspective of students' academic achievement differentiation and based on the relevant data of the China Education Panel Survey (CEPS), this research attempts to reveal the current situation of Chinese students' academic achievement differentiation and development in the overall social organization system and analyze how this differentiation process is manifested, what factors are affecting it, and if there is any law or pattern that can be followed.

This paper involved a tracking survey in 2009 and 2010 on 5,100 university students from 15 higher educational institutions in Beijing. This kind of survey can ensure the stability of groups to be tracked. Moreover, such 15 universities included six levels of sampling frames, i.e. the Peking University, the Tsinghua University, the Renmin University of China, all 211 universities directly under the Ministry of Education or under other ministries and commissions, all non-211 universities directly under the Ministry of Education or under other ministries and commissions, as well as all the Beijing municipal universities, which almost included universities at all levels. This paper collected their academic details since their entry into the school system: whether one attended a key school of any kind at any level during middle-school period; whether one took an Olympiad class, advanced placement class, got a school-level (or above) scholarship, acted as a class cadre, the person in charge of student journals or a school radio host; the division of liberal arts and science; grade repeating & skipping at primary & secondary schools; senior high school entrance examination (zhongkao) and college entrance examination (gaokao) whether one obtained admission eligibility; whether one got tutors or took part in extra-curricular tutorial classes during primary & secondary school period; whether one took part in independent recruitment; how is the gaokao's one-time pass rate; and how is the differentiation (division) of liberal arts and science at universities, etc., and then a chi-square test ( $p < 0.05$ ) of the results was conducted in an attempt to clearly reveal Chinese students' academic achievement differentiation and its affecting factors in China's current social reality <sup>2</sup>:

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<sup>2</sup> The following parts only show the relevant results through chi-square test.

## ECONOMY, POLITICS, AND CULTURE

In 1920s and 1930s, studies have been made on the analysis of the students' academic achievement differentiation and its causes from the perspectives of the existing social organization system and its social stratification mechanism and associating internal and external systems of the education. Such studies are advanced with the development of the progressivism, the reconstructionism, the liberalism and the radicalism in pedagogy, the social critical theory, the cultural critical theory and the social conflict theory in sociology, and the moderate revisionist's and the radical revisionist's theories in history. In the development for more than half a century, these studies not only have investigated the students' academic achievement differentiation through the social system within school education, but also examined the relation of students' academic achievement differentiation with politics, economy, culture, class, race and gender on the whole through the structural process of a bigger social system as a whole which has given birth to the school education.

	Economy	Politics	Culture
Gender			
Race			
Class			

Figure 1 Research Dimensions of Social System's Structural Process

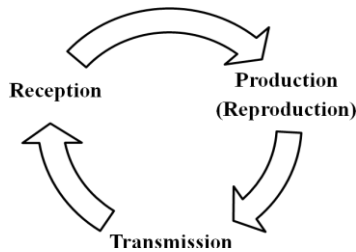


Figure 2 Analysis Strategy

Fundamentally, some studies have suggested that the school education not only incorporates as a social system, but also, as a whole, is born in the structural process of a bigger social system. This is a community of contradiction: on the one hand, the school education as a social system undertakes the mission of knowledge production, knowledge preservation and knowledge inheritance, in that it inevitably produces, preserves and inherits all knowledge in a value-free and universal way; on the other hand, the school education is a social subsystem of a bigger

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social system, and therefore it is bound to serve other social systems and the bigger social system as a whole, which requires the schools to make a value selection and distinguish between "useful" and "useless" knowledge and cultural concepts. Hence, "obviously, there is a basic and inevitable connection between selective educational contents and social relationships that play a dominant role in reality"(Williams, 1977). The school education has been claiming to be able to become a "huge democratic engine", which can expand horizons, enrich knowledge, and realize and ensure the social mobility. But on the other hand, the school education becomes an important means of social control, and has necessary relations with the social, political, economic and cultural controls in the whole society. Just because of this, the school education is regarded as a place inundated with value selection, with an aim of continuing the "tradition" that is approved and authorized by the social mainstream groups, instead of the reform or the revolution. It mandatorily urges young people to accept dominant culture, realize political socialization, and provide them with necessary tools for the special roles they expect to play in the established society. (Sigel, 1970) Carl Kaestle described this matter with his highly ironic language: "Like the vast Atlantic, we must decompose and cleanse the impurities which rush into our midst", "there is but one rectifying agent – one infallible filter – the –SCHOOL", "Most schoolmen were probably not averse to the success of limited numbers of the poor through education, but the schools' mission – and most promoters were quite frank about it – was to inculcate cooperative attitudes among the city's children whatever the vicissitudes of urban life might bring them. Acculturation is thus a more accurate term for the school's intention than assimilation, although the terms are sometimes used synonymously."(Kaestle, 1973). Therefore, the school system since its birth has become a means of bureaucratic control, a "sorting machine" that produces human capital to serve economic and social development and; (Katz, 1968; Katz, 1971; Spring, 1972; Spring, 1976) and students' academic differentiation became a fatalistic inheritance cycle ever since they step into the school system.

First, students' academic development is related to the development of existing social-economic structures. Whether a student's academic performance is good or poor is in essence dependent on an individual's ethnic background and parents' economic level. Education system is a complete set of social relations and organizational forms that correspond to the labor market. "The educational system operates in this manner not so much through the conscious intentions of teachers and administrators in their day-to-day activities, but through a close correspondence between the social relationships which govern personal interaction in the work place and the social relationships of the educational system."(Bowles & Gintis, 1976) They believe that between education system's social relation and production system's social relation lies a "principle of correspondence", which is reflected in every aspect, e.g., school education at different levels is used to successively cultivate young people into general workers, farmers, white collar workers, lower-level managers, senior managers, civil servants, government officials and intellectuals, i.e. to provide corresponding work force for different levels of social occupational structure. And such correspondence integrates batches of young people into the

existing economic system and social relation. Likewise, the education system, through the school education corresponding to social-economic structures, reasonably maintains and reproduces such a structure, thus becoming a factor in the reproduction of social relation. "Principle of correspondence" takes priority in guiding the school education, and is followed by educational institutions to ensure the realization of "reproduction", whether the cultivation objective of education, the social relation in schools, school atmosphere, educational methods, or the educational structure, school's social composition, educational expectation and educational finance.

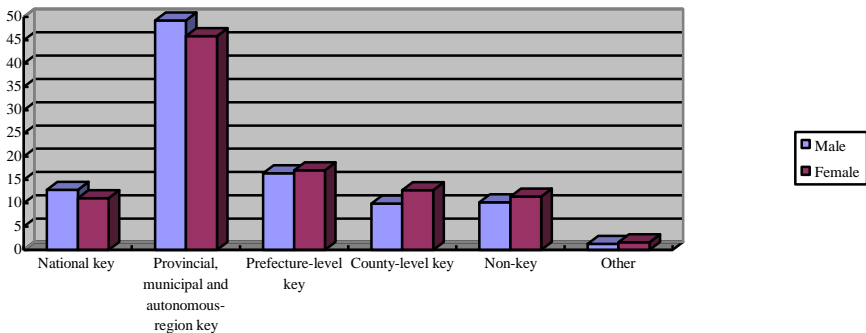
Second, a student's academic development is also related to the "cultural capital" that his/her family possesses. That is, the culture in a class society is not singular: the culture of the established ruling class and the culture of other classes and social groups coexist; the dominant culture and the secondary culture coexist. Individuals with different cultural backgrounds of the class and rank to which the family belongs develop different language competence and social skills, such as language pattern, professional skills, thinking model and behaviors, which constitute the "cultural capital" of the individual. In a highly stratified social system, upper-class children are possessed of superior "cultural capital", while the "cultural capital" of middle-class or lower-class children is in an inferior position. What's propagated by the school education, however, is generally the ruling class's culture or society's dominant culture, which is close to upper-class children's "cultural capital". The schools are trying hard to prove the rationality of such culture, so as to establish a "cultural reproduction" mode. The "cultural capital" of middle-class or lower-class children is assimilated to the upper class's "culture", thereby rationalizing the culture of the upper class and, through the cultural immersion, achieving the aim of social control.(Bourdieu, 1984)

Third, students' academic development is affected by "school politicization". A school is a main place for reproduction of social economy, politics and culture, and plays a significant role in selecting, preserving, and imparting relevant knowledge concepts, ideology norms and values(Apple, 2003). Through schools, unequal power is continued and challenged; through schools, the "legal" knowledge and values determined by the State and the ruling circles as well as the established social and political governance structure are reproduced and inherited; and it is through schools that the conflict between "knowledge" in the general sense and the "statutory and lawful" knowledge as well as the conflict between the "impartment" in the general sense and the "statutory and lawful" impartment come to be revealed. Now that school issue and education issue have been internalized into the political agenda and that school issue and education issue have existed in the universal relation between social politics, economy and cultural power, the educators, education researchers, as well as the general public that are engaged in educational affairs should confront and challenge the issue of "school politicization", instead of denying or evading it.

## GENDER MADE THE DIFFERENCE

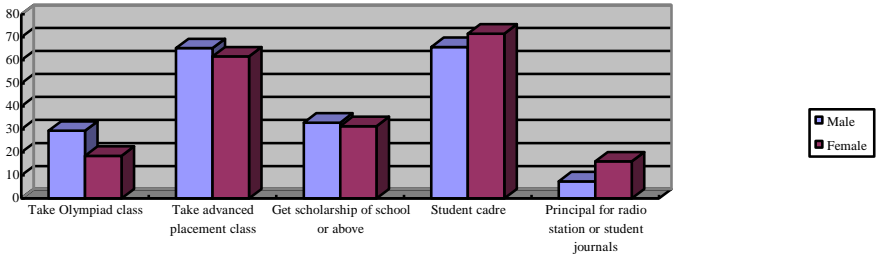
Studies on the effect of gender factor on students' academic achievement differentiation dated from long ago, and peaked in 1960s and 1970s while being promoted by western liberalism. It is generally recognized that, during the school education's filtering and differentiation, women are undoubtedly at a disadvantage. Women receive more significantly unequal treatment on a higher-level education ladder. For example, in America, to fight for equal access to education as the man has become one of the most important development fields for civil rights movement. And from the present situation of China, we find:

First, with respect to the possession of high-quality educational resources during middle-school period, there indeed lies a gender difference. The male tends to possess a higher ratio of higher-quality middle schools' educational resources. Data show that, a higher ratio of boys who attend national key middle schools and provincial (municipal) key middle schools than girls, and the ratio of boys to girls is 12.87%: 11.14%; and the ratio of boys to girls who attend provincial (municipal) key middle schools is 49.22%: 45.91%. While, from prefecture-level key middle schools, up to county-level key middle schools, and even in non-key middle schools, the ratio of girls is higher than that of boys. (See Figure 3)



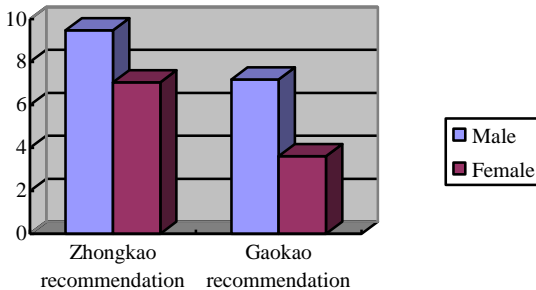
**Figure 3 Gender difference among students at key middle schools of all kinds and at all levels**

Second, with respect to taking an Olympiad class, advanced placement class, getting a school-level (or above) scholarship, and acting as a class cadre, the person in charge of student journals or a school radio host during middle-school period, the boys have an advantage in knowledge learning; while women's advantage is reflected in recreational and sports activities. Data show that the male-female ratio for entering an Olympiad class is 29.41%: 18.54%; the male-female ratio for entering an advanced placement class is 65.26%: 61.65%; the male-female ratio for getting school-level (above) scholarship is 32.94%: 31.42%; the male-female ratio for acting as class committee members or class cadres is only 65.79%: 71.59%; and the male-female ratio for acting as a school radio host or the person in charge of school publications is 7.43%: 16.12%. (See Figure 4)



**Figure 4 Gender difference in taking an Olympiad class, advanced placement class, getting a school-level (or above) scholarship, and acting as a class cadre, the person in charge of student journals or a school radio host during middle-school period**

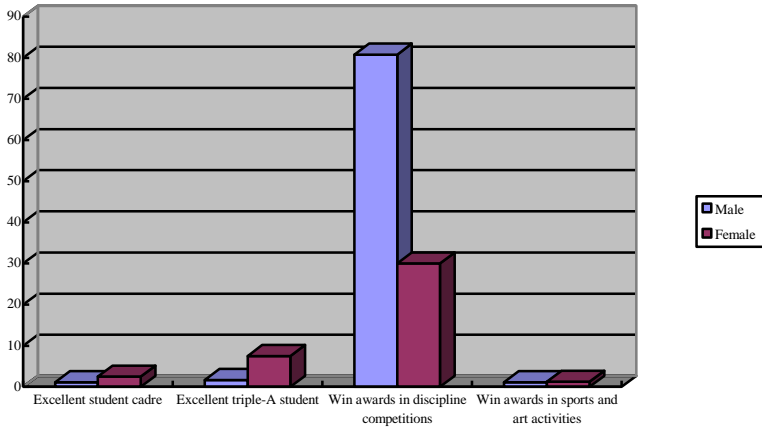
Third, in the student eligibility for recommendation to zhongkao (the Senior Secondary Education Entrance Examination) and gaokao (college entrance examination), the male also has an advantage. For example, in zhongkao, 9.74% boys obtained recommendation eligibility, while the ratio of girls is 7.05%; in gaokao recommendation eligibility, the ratio of boys to girls rises to 7.19%: 3.62%. (See Figure 5)



**Figure 5 Gender difference in obtaining zhongkao and gaokao recommendation eligibility**

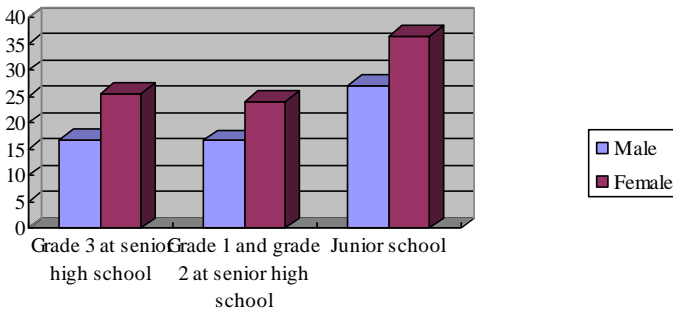
Further, we analyzed the reasons of boys' and girls' obtaining gaokao recommendation eligibility, and the data show that there are four factors for them to obtain the qualification: an excellent student cadre, an excellent triple-A student, winning awards in discipline competitions and winning awards in sports and art activities. The male still has an advantage in discipline knowledge learning. In "winning awards in discipline competitions", the male-female ratio is 80.79%: 30.00%; in "an excellent student cadre and an excellent triple-A student", the ratio of boys to girls is 1.13%: 2.50%, and 1.69%: 7.50% respectively; but in "recreational and sports activities" in which girls have an advantage, girls' advantage obviously decreases,

basically keeping the level with boys, only slightly higher than the latter by 0.12%. (See Figure 6)



**Figure 6 Gender differences in obtaining gaokao recommendation eligibility**

Fourth, we observed the gender difference in extra academic investment during middle-school period, for example, hiring tutors and taking cram classes. Data show that in grade 3 at senior high school, the ratio of boys to girls is 16.92%: 25.57%, i.e. the ratio of girls who have tutors is higher than that of boys. In grade 1 and grade 2 at senior high school, the ratio of boys to girls who have tutors or take cram classes is 16.66%: 23.99%, indicating more girls than boys do as such. When we examined junior high schools, we come to the same conclusions, i.e. the ratio of girls who have tutors and take cram classes is higher than that of boys, with the boy-girl ratio of 27.10%: 36.55%. (See Figure 7)



**Figure 7 Gender difference in extra academic investment during middle-school period**

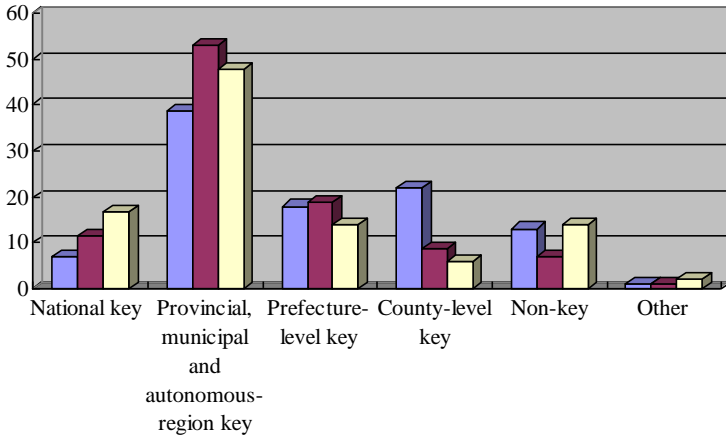


Furthermore, we specially examined rural boys and girls and data show that in rural areas, a higher ratio of girls in grade 3 at senior high school, in grades 1 and 2 at senior high school, as well as at junior high school than boys get tutors or take cram classes, with the ratio at such three stages being 2.61%: 4.73%, 3.13%: 4.73%, and 7.83%: 14.19% respectively.

## RURAL VS URBAN MADE THE DIFFERENCE

Rural-urban difference in school education resources allocation has been one of the core factors testing China's educational equality. The survey data of the study show:

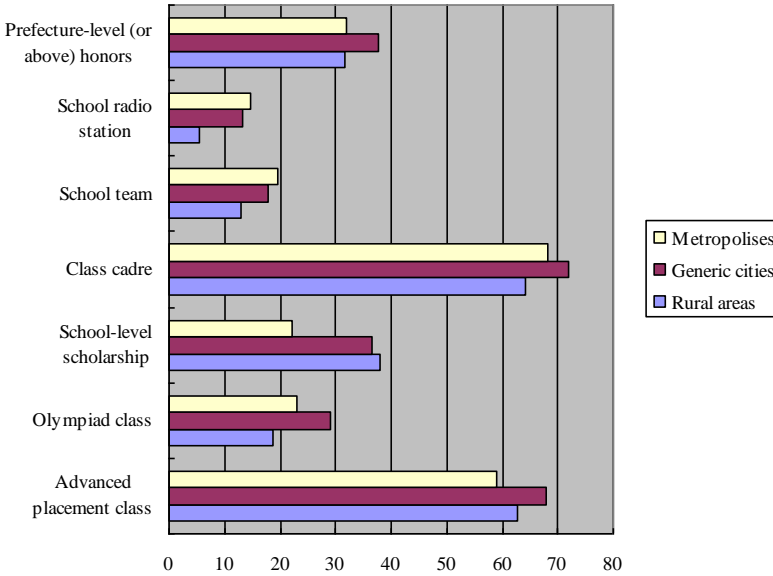
First, among students at key middle schools of all kinds and at all levels, there lies a significant rural-urban difference. Compared with students from rural areas, more students from cities can attend key schools; the bigger the city size is, the higher their ratio in higher-level key schools: in national key middle schools, the ratio of students from metropolises, generic cities and rural areas is 16.70%: 11.37%: 7.07%; in provincial, municipal and autonomous-region key middle schools, this ratio is 47.75%: 53.10%: 38.83%; in prefecture-level key middle schools, this ratio is 13.93%: 18.71%: 17.95%; in county-level key middle schools, this ratio is 5.89%: 8.73%: 22.10%; and in non-key middle schools, this ratio is 13.79%: 6.95%: 13.08%. (See Figure 8)



**Figure 8 Rural-urban differences among students at key middle schools of all kinds and at all levels**

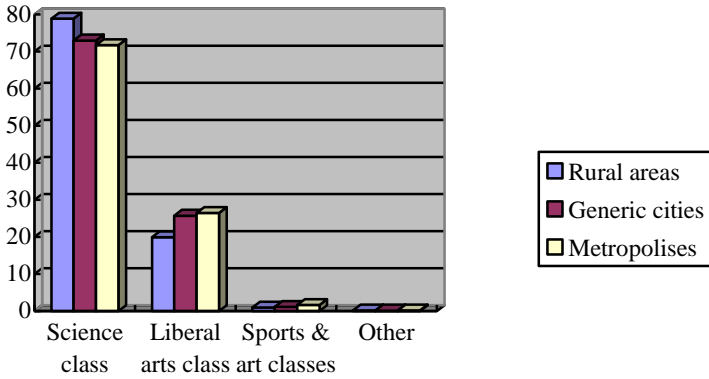
Second, students from rural areas have an advantage in knowledge learning, but have an obvious disadvantage in quality development and social activities; while students from cities, especially from metropolises have more advantage in quality cultivation and social activities, e.g., joining a school team, and acting as a school radio host or the person in charge of student publications; students from generic cities often can combine knowledge learning and quality cultivation, and therefore have an advantage in "advanced placement class, Olympiad class,

obtaining prefecture-level (or above) honors, and acting as student cadres". See Figure 9 for details.



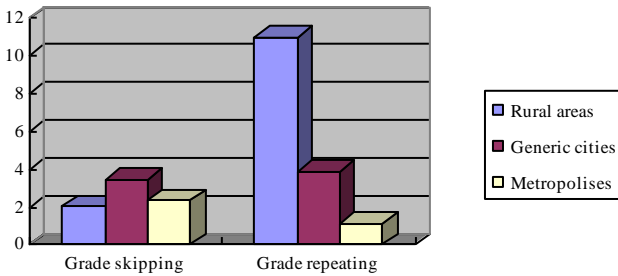
**Figure 9 Rural-urban difference in taking an Olympiad class, advanced placement class; getting a school-level (or above) scholarship; acting as a class cadre, the person in charge of student journals or a school radio host during middle-school period**

Third, in the division of liberal arts and science at senior high schools, more students from rural areas choose a science class, and more students from cities, especially from metropolises choose a liberal arts class. In rural areas, 78.81% students choose a science class, 19.97% choose a liberal arts class, and 0.97% choose a sports & art class; while in metropolises, the ratio of those who choose a science class drops to 71.70%, and that of liberal arts classes and sports & art classes reaches up to 26.44% and 1.66%; in generic cities, the ratio of science classes is 72.94%, that of liberal arts classes is 25.75%, and sports & art classes 1.15%. (See Figure 10)



**Figure 10 Rural-urban differences in the division of liberal arts and science at senior high schools**

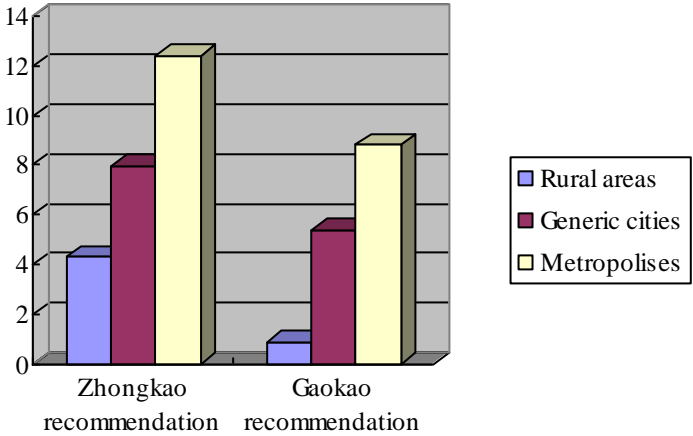
Fourth, in grade skipping & repeating, there also lies a rural-urban difference. Whether in grade skipping or in grade repeating, students from rural areas are at an obvious disadvantage. In rural areas, only 2.03% students skipped a grade, but 10.99% students repeated a grade. While in cities, it is quite different: in generic cities, 3.44% students skipped a grade, and only 3.91% students repeated a grade; in metropolises, 2.35% students skipped a grade, and only 1.11% students repeated a grade. (See Figure 11)



**Figure 11 Rural-urban differences in grade repeating & skipping**

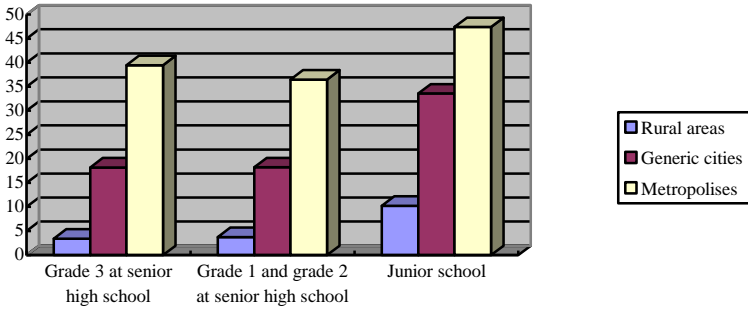
Fifth, students from cities, especially from metropolises have an obvious advantage in both zhongkao and gaokao recommendation, while students from rural areas are at an obvious disadvantage. In zhongkao, the ratio of students from metropolises who obtained recommendation eligibility and didn't take the examination is 12.39%, those from generic cities 7.98%, and rural areas 4.30%. In gaokao, only 0.89% students from rural areas can obtain

recommendation eligibility for colleges; in generic cities, the ratio of students who can obtain recommendation eligibility rises to 5.39%; while in metropolises, this ratio reaches 8.80%. (See Figure 12)



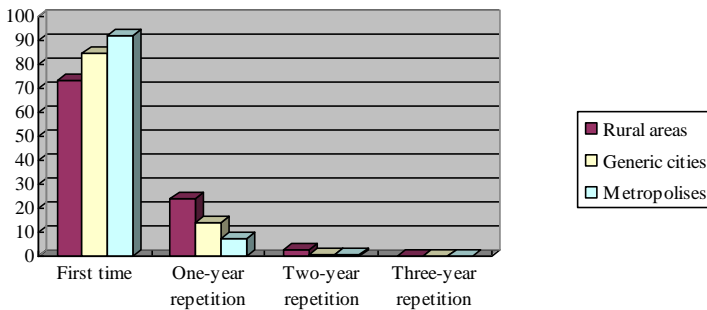
**Figure 12 Rural-urban differences in recommendation eligibility**

Sixth, in extra academic investment during middle-school period, the rural areas are at an obvious disadvantage. Seen from "getting tutors or taking cram classes" in grade three at senior high school, only 3.41% of the students from rural areas had such an experience, and the proportion of students from generic cities and metropolises is 18.22% and 39.47% respectively. The proportion of "getting tutors or taking cram classes" in grade 1 or 2 at senior high school is roughly the same; in students from rural areas, 3.73% got tutors or took cram classes in grade 1 and grade 2 at senior high school, and the proportions of students from generic cities and metropolises reach up to 18.27% and 36.50% respectively. With respect to getting tutors or taking cram classes during junior-high-school period, the ratio of students from rural areas increases (10.24%), and that of students from generic cities and metropolises is 33.62% and 47.44% respectively. (See Figure 13)



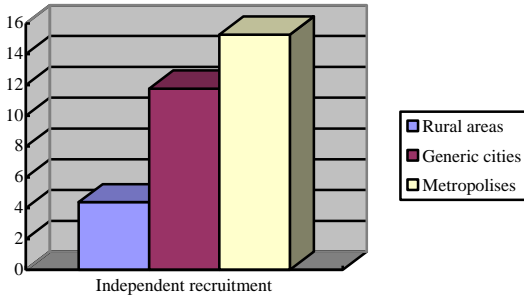
**Figure 13 Rural-urban differences in extra academic investment during middle-school period**

Seventh, the gaokao success rate of students from cities is far greater than that of students from rural areas, and metropolises far greater than generic cities; accordingly, the grade-3 repetition rate and repetition times of students from rural areas are far greater than that of students from cities. (See Figure 14)



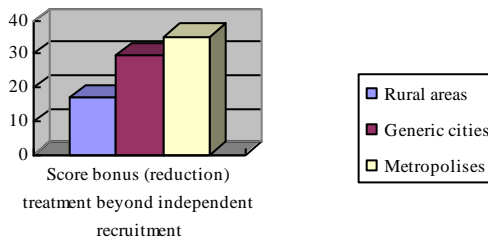
**Figure 14 Rural-urban differences in gaokao success rate**

Besides, fewer students from rural areas take part in independent recruitment than students from cities. In students from rural areas, only 4.39% once took part in independent recruitment; while in generic cities, this ratio increases sharply to 11.76%; and in metropolises, this ratio even reaches 15.28% (See Figure 15).



**Figure 15 Rural-urban difference in independent recruitment**

Furthermore, in score bonus (reduction) treatment beyond independent recruitment, i.e. receiving score bonus (reduction) treatment because of "minorities, children of martyrs, overseas Chinese, or students from Hong Kong, Macao and Taiwan", "winning awards in major discipline competitions", "an excellent student cadre or an excellent triple-A student" or "with artistic & sports talent or other special skills", students from rural areas are also at an obvious disadvantage. In rural areas, 17.05% students received score bonus (reduction) treatment beyond independent recruitment. In generic cities, this ratio rises to 29.59%. While in metropolises, 35.27% students received score bonus (reduction) treatment beyond independent recruitment. (See Figure 16)



**Figure 16 Rural-urban difference in score bonus/reduction treatment beyond independent recruitment**

Eighth, after entering a university, students from rural areas prefer the science & engineering, and students from cities, especially from metropolises prefer social sciences and humanities. Of students from rural areas, 62.35% choose the science & engineering, while students from generic cities and metropolises only account for 51.76% and 47.52%; only 9.21% students from rural areas choose humanities, while students from generic cities and metropolises account for 15.83% and 16.21%; 28.20% students from rural areas choose social sciences, while students

from generic cities and metropolises account for 31.55% and 35.15%. On the whole, of students from rural areas, more than 50% choose the science & engineering, while this proportion in cities is only 50% or even less. (See Figure 17)

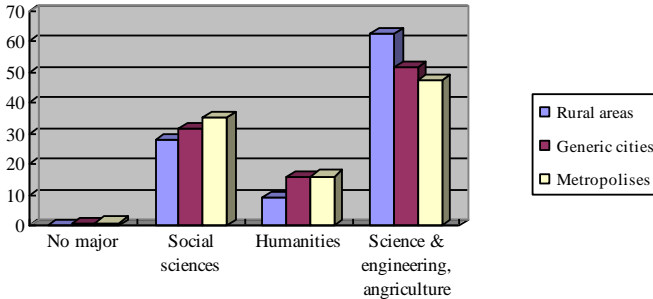
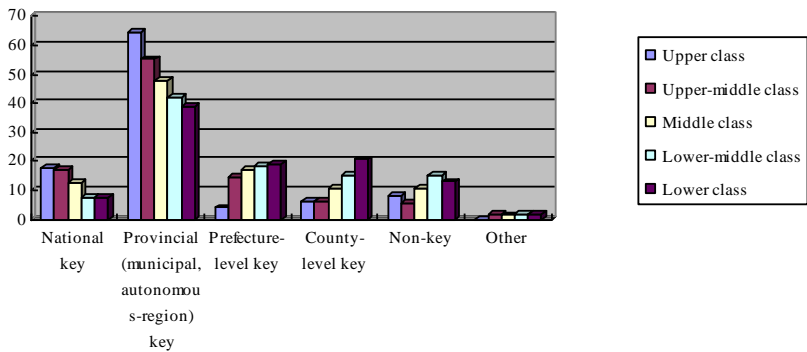


Figure 17 Rural-urban difference in university discipline selection

### SOCIAL CLASS MADE THE DIFFERENCE

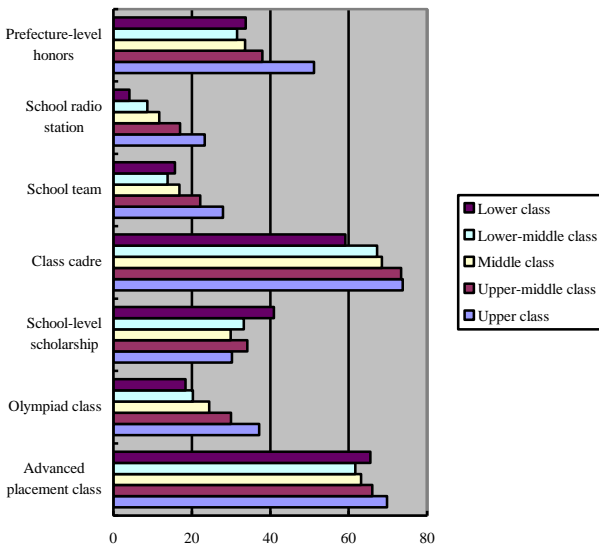
Social class difference in school education is another core factor testing China's educational equality. This study's survey data show:

First, the higher students' social class is, the more likely they are to study at higher-level key schools; accordingly, the lower the students' social class is, the lower the proportion of students studying at higher-level key schools is. In national key middle schools, the ratio of the upper class to the upper-middle class to the middle class to the lower-middle class to the lower class is 17.65%: 17.26%: 12.71%: 7.41%: 7.32%; in provincial (municipal, autonomous-region) key schools, this ratio is 64.71%: 55.16%: 48.04%: 42.19%: 38.68%; in prefecture-level key schools, this ratio is 3.92%: 14.44%: 16.80%: 18.45%: 19.16%; in county-level key schools, this ratio is 5.88%: 6.08%: 10.55%: 15.00%: 20.56%; and in non-key schools, this ratio is 7.84%: 5.54%: 10.55%: 15.27%: 12.89%. (See Figure 18)



**Figure 18 Social class difference in students at key middle schools of all kinds and at all levels**

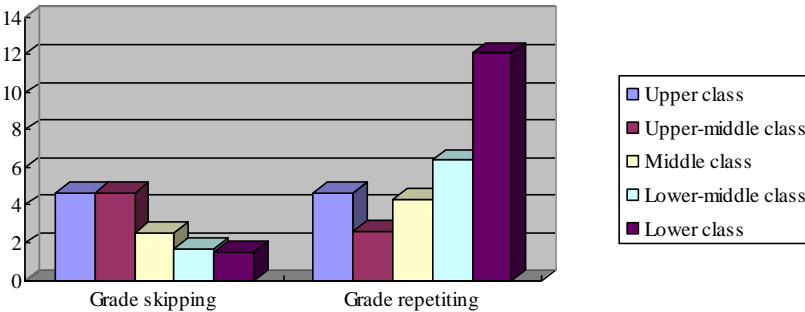
Second, we examined students from different social classes in the following aspects: taking an Olympiad class, advanced placement class, getting a school-level (or above) scholarship, obtaining prefecture-level (and above) honors, acting as a class cadre, joining a school team, and acting as a school radio host or the person in charge of student journals. It can be shown from data that upper-class and upper-middle-class students have an absolute advantage in knowledge learning, quality-oriented education and social activities, while lower-middle-class and lower-class students have an obvious disadvantage. (See Figure 19)





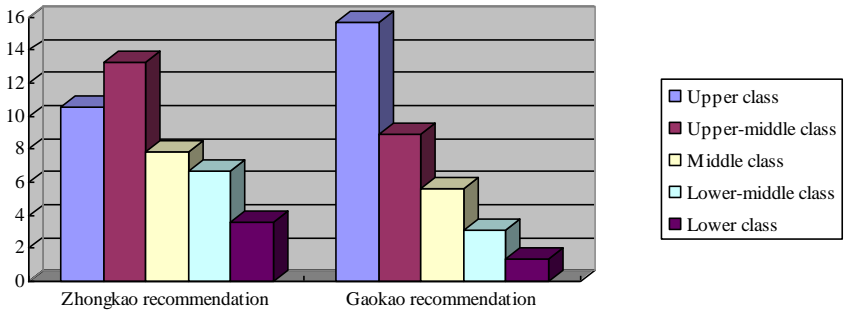
**Figure 19 Social class difference in taking an Olympiad class, advanced placement class; getting a school-level (above) scholarship; acting as a class cadre, the person in charge of student journals or a school radio host during middle-school period**

Third, the same is true for grade repeating & skipping during middle-school period: the higher the students' social class is, the more obvious their advantage is; accordingly, the lower the students' social class is, the more obvious their disadvantage is. In the upper class, 4.65% students skipped a grade, and 4.65% students repeated a grade; in upper-middle class, 4.65% students skipped a grade, and 2.63% students repeated a grade; in middle class, 2.55% students skipped a grade, and 4.31% students repeated a grade; in lower-middle class, 1.68% students skipped a grade, and 6.41% students repeated a grade; in lower class, grade-skipping students dropped to 1.50%, while grade-repeating students increase sharply to 12.08%. (See Figure 20)



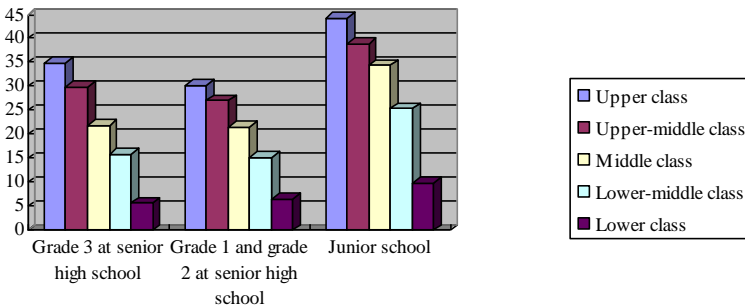
**Figure 20 Social class difference in grade skipping & repeating**

Fourth, with respect to recommendation eligibility, whether in zhongkao or in gaokao, the higher the students' social class is, the higher the proportion of obtaining the recommendation eligibility is; conversely, the lower the students' social class is, the lower the ratio of obtaining the admission eligibility is. To take gaokao as an example, the ratio of the upper class to the upper-middle class to the middle class to the lower-middle class to the lower class is 15.69%: 8.88%: 5.61%: 3.09%: 1.39%. (See Figure 21)



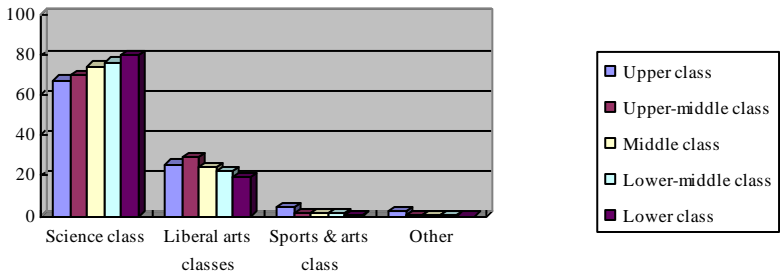
**Figure 21 Social class difference in recommendation eligibility**

Fifth, with respect to extra academic investment during middle-school period, in grade 3 at senior high school, in grades 1 and 2 at senior high school, as well as at junior high school, data analysis has shown that, the higher a student's social class is, the more likely he is to get a tutor or take an extra-curricular cram class. (See Figure 22)



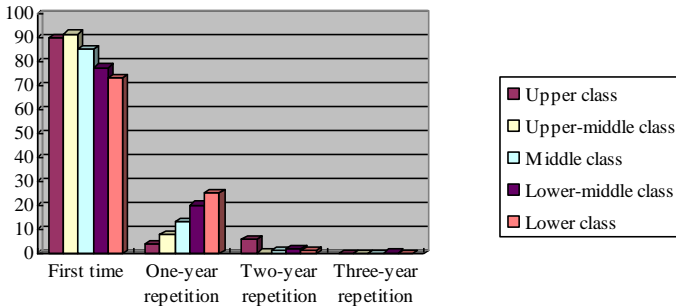
**Figure 22 Social class difference in extra academic investment during middle-school period**

Sixth, the division of liberal arts and science during middle-school period also shows social class difference: lower-class and lower-middle-class students prefer a science class, and more upper-class and upper-middle-class students choose a liberal arts class. (See Figure 23)



**Figure 23 Social class difference in the division of liberal arts and science during middle-school period**

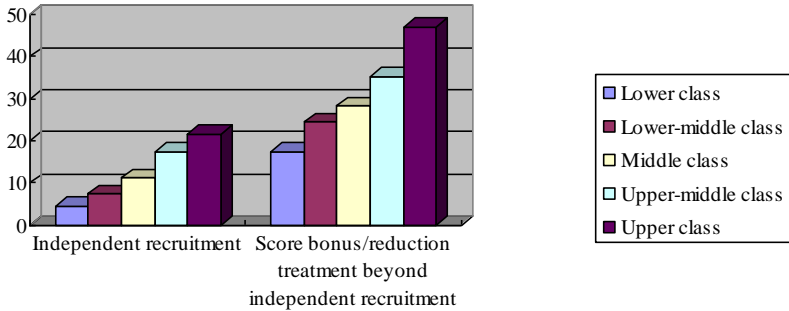
Seventh, the gaokao success rate also shows social class difference. The gaokao one-time success rate of upper-class and upper-middle-class students is far higher than that of the middle class, and the middle class far higher than lower-middle class and lower class; accordingly, the grade-3 repetition rate of the middle class, lower-middle class and lower class is higher than that of the upper class and upper-middle class; however, the poorer social class choose a fewer grade-3 repetition times. (See Figure 24)



**Figure 24 Social class difference in gaokao's success rate**

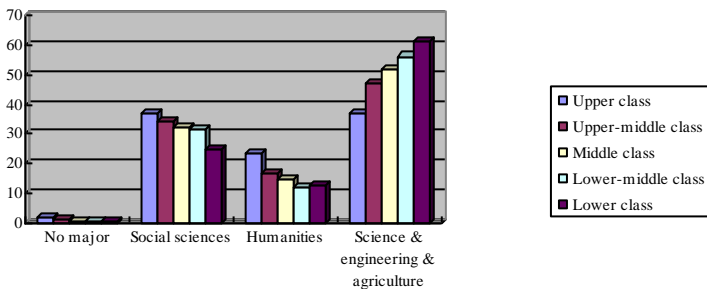
Eighth, the ratio of lower-class students who take part in independent recruitment is far lower than upper-class students. In the lower class, only 4.55% students once took part in independent recruitment; in the lower-middle class, 7.24% students once took part in independent recruitment; in the middle class, this proportion rises to 11.09%; in the upper-middle class, this proportion increases to 17.44%; and in the upper class, this proportion reaches up to 21.57%. In addition, the higher a student's social class is, the more likely he is to receive score bonus (reduction) treatment beyond independent recruitment. In the upper class, 47.06% students received score bonus (reduction) treatment beyond independent recruitment; in the

upper-middle class, 35.21% students received score bonus (reduction) treatment beyond independent recruitment; in the middle class, 28.23% students received score bonus (reduction) treatment beyond independent recruitment; in the lower-middle class, 24.51% students received score bonus (reduction) treatment beyond independent recruitment; and in lower class, only 17.42% students received score bonus (reduction) treatment beyond independent recruitment. (See Figure 25)



**Figure 25 Social class difference in independent recruitment and in score bonus/reduction treatment beyond independent recruitment**

Ninth, in a university, the lower the students' social class is, the more significant their preference for the science & engineering is; the higher the students' social class is, the more non-significant their preference for majors is. In the upper class, the ratio of social sciences to humanities to science & engineering is 37.25%: 23.53%: 37.25%, 34.43%: 16.94%: 47.21% in the upper-middle class, 32.26%: 15.07%: 52.03% in the middle class, 31.47%: 11.79%: 56.21 %in the lower-middle class, 25.09%: 13.07%: 61.48% in the lower class. (See Figure 26)

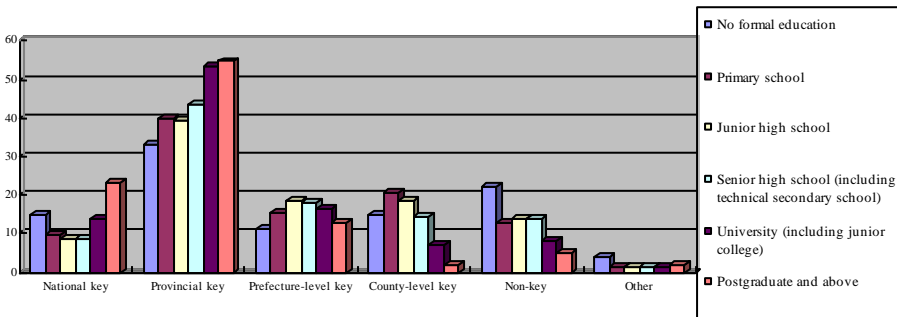


**Figure 26 Social class difference in university discipline selection**

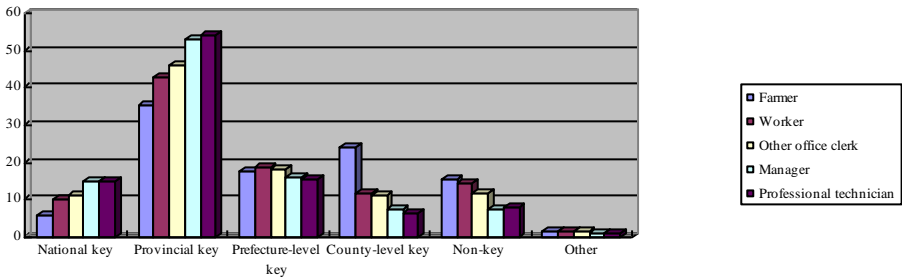
## FATHER/MOTHER'S EDUCATION LEVEL AND OCCUPATION MADE THE DIFFERENCE

The research data also show a strong correlation between father's/mother's education level and occupation and students' academic achievement differentiation:

First, whether a student can study at a key school has a direct relation to his father/mother's education level and occupation. First of all, the higher the parents' education level is, the more likely their children are to enter higher-level key schools. For example, where a father has received postgraduate education or higher, the ratio of their children studying at national key schools is 23.34%, and in comparison, where the father has received university education, senior high school education, junior high school education, and primary school education, this ratio is only 13.71%, 8.79%, 8.61% and 9.76% respectively; likewise, the mother's education level has a similar proportional relation to their children studying at key schools. Second, the more knowledge reserve the father's/mother's occupation requires, the higher the ratio of their children entering higher-level key schools is. To take national key schools as an example, the ratio of the student whose father is a farmer, a worker, a clerk of other offices, a professional technician and a manager is 5.86%: 10.24%: 11.34%: 14.8%: 14.77%; likewise, the mother's occupation has a similar proportional relation to their children studying at key schools. At last, it is noteworthy that, where the father hasn't received any formal education, the ratio of their children studying at non-key middle schools is far higher than those whose father has received education, but the ratio of their children studying at national key schools is superior to those whose father has received primary school education, junior high school education, senior high school education, and even university education. (See Figure 27, 28)



**Figure 27 Differences in father's/mother's education level among students at key middle schools of all kinds and at all levels**



**Figure 28 Father's/mother's occupational differences among students at key middle schools of all kinds and at all levels**

Second, we examined the effect of father's/mother's education level and occupation on their children's taking an Olympiad class, advanced placement class, getting a school-level (or above) scholarship, obtaining prefecture-level (or above) honors, acting as a class cadre, joining a school team, and acting as a school radio host or the person in charge of student journals. Data show that: first, the higher the father's/mother's education level is, especially, the higher the father's education level is, the higher the degree of their children's social participation is and the less emphasis they will put on knowledge education; the lower the father's/mother's education level is, the more emphasis they will put on their child's knowledge education and the less emphasis they will put on social participation. For example, where the father has received postgraduate education or above, the ratio of their children acting as class cadres, joining school teams, and acting as a school radio host is 76.16%, 21.61% and 17.63% respectively, which is far higher than those whose father has received no formal education or received primary school education, junior high school education, senior high school education, and even university education. Where the father hasn't received any formal education, the ratio of their children joining an advanced placement class and getting a school-level scholarship is 66.67% and 44.44% respectively, which is also far higher than those whose father has received education at all levels. Second, the same is true for the effect of father's/mother's occupation on their children. The more the knowledge reserve required for father's/mother's occupation is, the better and higher their children's quality-oriented education outcome and social participation degree will be. Conversely, the less the knowledge reserve required for father's/mother's occupation is, the more emphasis they will put on their children's knowledge education. At last, it is noteworthy that students in families where the father/mother hasn't received any formal education have considerably outstanding performance with respect to advanced placement class, school-level scholarship, class cadres, school team, and school radio host, and sometimes even outperforming students whose father has received higher education; and students in a family where the father/mother is a farmer have more outstanding performance with respect to

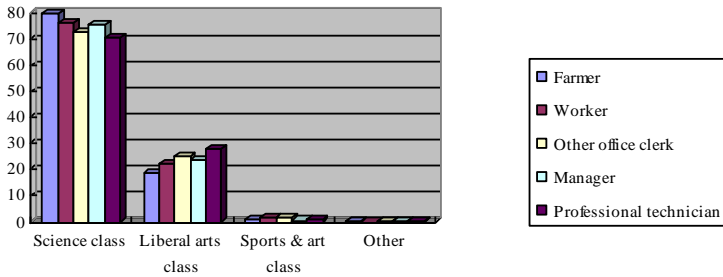
advanced placement class and school-level scholarship. The specific data are shown in the table below.

	Advanced Placement Class (%)	Olympiad Class (%)	School-level scholarship (%)	Classes Cadre (%)	School Team (%)	School radio host (%)	Prefecture-level (and above) honors (%)
No formal education	66.67	14.81	44.44	70.37	22.22	11.11	29.63
Primary school	64.88	19.61	43.41	64.71	9.76	3.90	32.84
Junior high school	62.25	17.56	35.24	64.27	13.02	7.53	30.47
Senior high school (including technical secondary school)	60.00	22.03	29.99	68.41	16.60	9.60	31.70
University (including junior college)	66.63	29.07	32.10	69.75	19.35	14.51	36.77
Postgraduate and above	62.82	27.38	25.80	76.16	21.61	17.63	38.44

	Advanced Placement Class (%)	Olympiad Class (%)	School-level scholarship (%)	Class Cadres (%)	School Team (%)	School radio host (%)	Prefecture-level (and above) honors (%)
Farmers	65.18	17.13	39.19	64.90	11.56	5.01	32.73
Workers	56.39	22.26	28.01	66.31	17.62	8.87	30.47
Other office clerks	64.31	23.28	31.53	68.67	15.49	9.44	31.53
Professional technicians	68.67	30.23	36.32	69.20	17.87	13.64	39.65
Managers	63.25	26.60	29.09	71.66	20.66	16.42	35.72

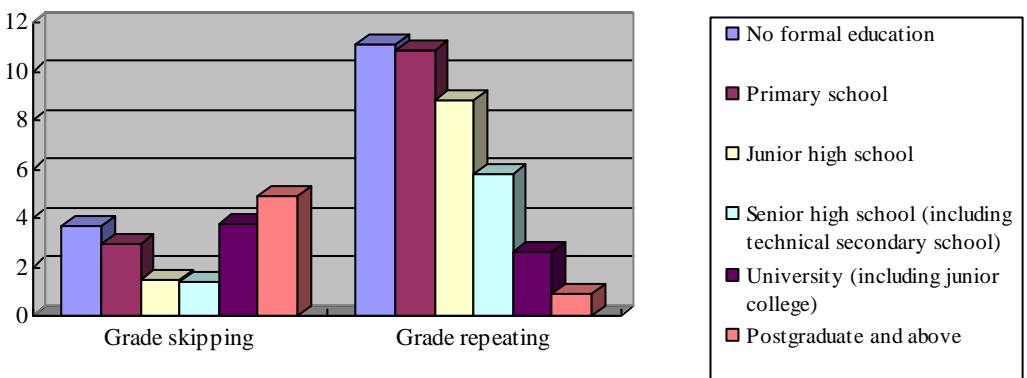
Third, during middle-school period, the father's/mother's education level and occupation are also related to their children's choice of liberal arts or science. The more knowledge reserve the father's/mother's occupation requires, the higher the ratio of their children choosing a liberal arts class is, and the less knowledge reserve the father's/mother's occupation requires, the higher the ratio of their children choosing a science class is. To take father's occupation as an example, 70.28% of the students whose father is a manager choose to register a science class, and 28.22% choose to register a liberal arts class; 75.33% of the students whose father is a professional technician register a science class, and 23.87% choose to register a liberal arts class; 72.62% of the students whose father is an other office clerk register a science class, and 25.25% choose to register a liberal arts class; 76.09% of the students whose father is a worker register a science class, and 22.41% choose to register a liberal arts class; 79.81% of the students whose father is a farmer register a science class, and 18.80% choose to register a liberal arts class. (See Figure 29)



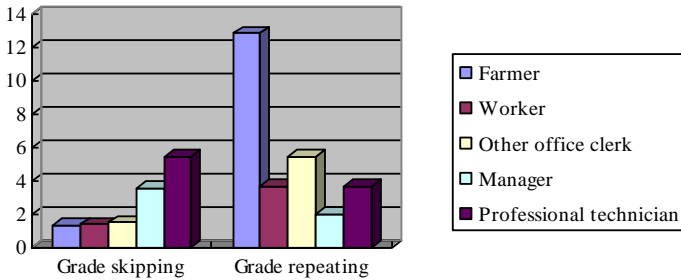


**Figure 29 Father's/mother's occupational differences in the division of liberal arts and science at middle schools**

Fourth, during primary-and-secondary-school period, father's/mother's education level and occupation have a relation with students' grade skipping & repeating. First, the lower the father's/mother's education level is, the higher the ratio of their children's grade repeating is. Where the father hasn't received any formal education, the ratio of their children's grade repeating is 11.11%; while the father has received postgraduate education or above, the ratio of their children's grade repeating is only 0.87%. Likewise, the effect of mothers' education level on their children's grade repeating also shows the same tendency. Second, the higher the father's/mother's education level is, the higher the ratio of their children's grade skipping is; but it is noteworthy that, where the father/mother hasn't received any formal education, the ratio of their children who have grade skipping is also higher than those whose father/mother who has received primary school, junior high school, and senior high school education, but is lower than those whose father/mother who has received higher education. The specific data are shown in the table below. At last, the more the knowledge reserve required for father's/mother's occupation is, the higher the ratio of their children's grade skipping is, the less the possibility of grade repeating is. However, the ratio of professional technicians' children who have grade repeating is far higher than other office clerks' and managers'. (See Figure 30, 31)

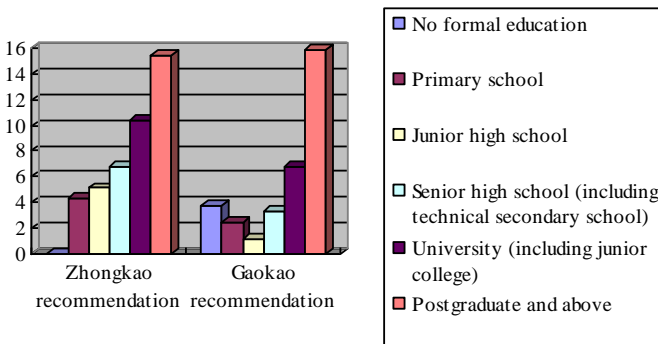


**Figure 30 Differences in father's/mother's education level among grade-repeating & skipping students**

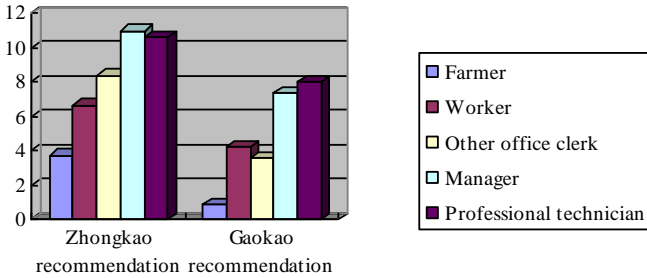


**Figure 31 Father's/mother's occupational differences in grade repeating & skipping**

Fifth, father's/mother's education level and occupation have an influence on their children who want to obtain recommendation eligibility in zhongkao and gaokao, i.e. the higher the father's/mother's education level is, the more the knowledge reserve required for father's/mother's occupation is, the more likely their children are to obtain recommendation eligibility. Conversely, the lower father's/mother's education level is, the less the knowledge reserve the father's/mother's occupation requires, and the lower the ratio of their children's obtaining admission eligibility is. (See Figure 32, 33)

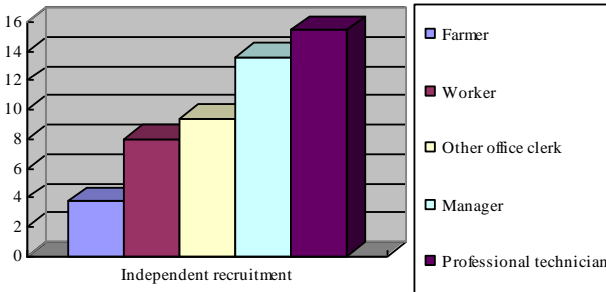


**Figure 32 Differences in father's/mother's education level in recommendation eligibility**

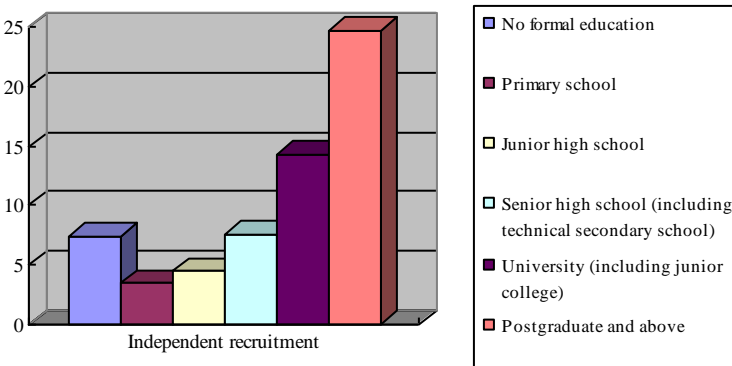


**Figure 33 Father's/mother's occupational differences in recommendation eligibility**

Sixth, with respect to taking part in independent recruitment, the higher the father's/mother's education level is, the more knowledge reserve the father's/mother's occupation requires, and the higher the ratio of their children's taking part in the independent recruitment is. (See Figure 34, 35)

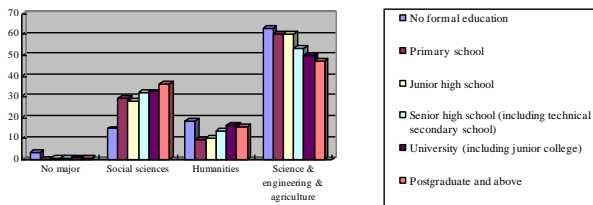


**Figure 34 Father's/mother's occupational differences in independent recruitment**

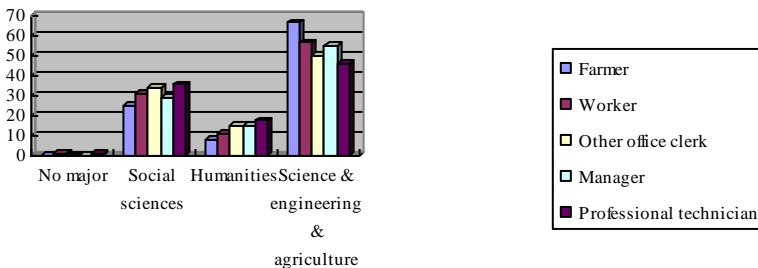


**Figure 35 Differences in father's/mother's education level in independent recruitment**

Seventh, father's/mother's education level and occupation also affect their children's selection of majors at university. The higher the father's/mother's education level is, the more knowledge reserve the father's/mother's occupation requires, the less significant their children's preference for majors is; the lower father's/mother's education level is, the less knowledge reserve the father's/mother's occupation requires, the more significant their children's preference for science & engineering is. (See Figure 36, 37)



**Figure 36 Differences in father's/mother's education level in university discipline selection**



**Figure 37 Father's/mother's occupational differences in university discipline selection**

**DISCUSSIONS**

Through the above data analysis, with respect to the affecting factors and regular pattern of Chinese students' academic achievement differentiation, the conclusions drawn from the study are:

First, social class difference has a strong relevance to Chinese students' academic achievement differentiation. With the rapid development of society and economy, China's social class is rapidly differentiating, which has aroused extensive attention from sociologists long ago. (Lu, 2002; Li, 1995) Rapid differentiation of social class inevitably results in unfair utilization of various social resources, and the school education is becoming a significant epitome of this issue; studies on the causes for students' academic achievement differentiation precisely reflect the influence of social class difference. As previously mentioned, in current China, students from upper-middle social class are enjoying more and better educational resources, and are having more outstanding academic performance. Conversely, students from lower-middle class in society are at an obvious disadvantage.

Second, in students' academic achievement differentiation, the urban-rural differences in educational resources allocation and educational investment play a distinctly important role. China's urban-rural polarized social structure leads to significant differences between urban and rural areas in the possession and allocation of economic, political and cultural resources. In school education, especially in students' academic achievement differentiation, such differences are manifested rather obviously: whether in being recommended to key schools, obtaining admission eligibility, grade skipping & repeating, academic investment and outcome, or in disciplines differentiation and selection, students from cities, especially those from metropolises have an obvious active advantage, while students from rural areas are at an obvious passive disadvantage.

Third, the differences in father's/mother's education level and occupation also have an obvious relevance to students' academic differences. The father's/mother's education level and occupation from one aspect reflect the "intellectual capital" or "cultural capital" the student's family possesses. According to sociological studies, in the midst of all social forms, the possession of "cultural capital" has a positive correlation with the possession of social wealth in the process of social production and social resources allocation. The same is true for students' academic performance. The student from a family where the father's/mother's education level is higher tends to possess more "intellectual capital" or "cultural capital", which necessarily enable him to learn faster and better than those who possess less or who do not possess any, and thereby leading to various differences in students' academic performance.

Fourth, the connection between gender factor and the differences in students' academic performance still needs further data verification. According to existing data, we find that the male indeed has certain advantage seen from the results of knowledge-learning and knowledge-mastery-based academic achievement differentiation, but the academic investment from the family and the society in women doesn't significantly decrease. Therefore, the conclusion in this aspect still needs further data verification.

In conclusion, this paper believes that Chinese students' academic achievement differentiation at present is, to a certain extent, a process of human-caused succession. As Raymond Williams said, "It is a set of meanings and values which as they are experienced as practices appear as

reciprocally confirming ... it thus constitutes a sense of reality for most people in the society, a sense of reality for most people in the society, a sense of absolute because experienced reality beyond which it is very difficult for most people in the society, a sense of reality for most people in the society, a sense of absolute because experienced reality beyond which it is very difficult for most members of the society to move, in most areas of their lives. But this is not, except in the operation of a moment of abstract analysis, in any sense a static system. On the contrary we can only understand an effective and dominant culture if we understand the real social process on which it depends: I mean the process of incorporation. The modes of incorporation are of great social significance, and incidentally in our kind of society have considerable economic significance. The educational institutions are usually the main agencies of the transmission of an effective dominant culture, and this is now a major economic as well as cultural activity; indeed it is both in the same moment. Moreover, at a philosophical level, at the true level of theory and at the level of the history of various practices, there is a process which I call the selective tradition: that which, within the terms of an effective dominant culture, is always passed off as the 'tradition', 'the significant past'. But always the selectivity is the point; the way in which from a whole possible area of past and present, certain meanings and practices are chosen for emphasis, certain other meanings and practices are neglected and excluded. Even more crucially, some of these meanings and practices are reinterpreted, diluted, or put into forms which support or at least do not contradict other elements within the effective dominant culture. The processes of education; the processes of a much wider social training within institutions like the family; the practical definitions and organisation of work; the selective tradition at an intellectual and theoretical level: all these forces are involved in a continual making and remaking of an effective dominant culture. "(Dale et al., 1976)

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