

**Tackling Academic Achievement Gaps among
Elementary Schools:
Who acquires academic ability?**

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Abstract

The measurement of children's academic achievements and the explanation of differences between social classes should not be dismissed by sociologists of education. Although inequality is a major theme of the field, the sociology of education has lacked empirical evidence on the structure of disparities in academic achievements. This is partly due to the difficulties involved in collection sufficient data on academic achievement through schools.

In and after 2002, studies were begun on the relationship between academic achievement and social class in Japan. At the time, schools were being heavily criticized within the context of the debate over falling children's academic achievements. Some significant surveys were administered at that time, though they were small in number. However, they left some important issues to be solved. The first is that analyses of the determinants of academic achievement are inadequate for clarifying what factors will diminish class differences in achievement. The second concerns the reliability and validity of the variables collected. In particular, variables on the economic conditions of households are lacking. Finally, the surveys were conducted only in large cities.

This paper examines the factors that affect children's academic achievements, and the extent of the effect of such factors, through an analysis of the data of the Japan Education Longitudinal Study 2003(JELS 2003). JELS 2003 was conducted in two areas: one a middle-sized city within the capital metropolitan areas, and the other a small local city. It also contains variables about the economic conditions of households.

The major findings of the paper are as follows.

1. In the small local city, the differences of academic achievement between social classes were relatively small.
2. In the middle-sized city within the metropolitan area, children's academic achievements were affected by the level of monthly educational expenses, level of educational expectations of the child, and income level of the family.

Inequalities in children's academic achievements in our society should be grasped in the context of the substitution of "parentocracy" for meritocracy.

Key words : academic achievement, JELS, meritocracy, parenocracy

1. The Sociology of Academic Achievement Gaps

The main interest of sociology of education, which has been focusing on inequality in education as a main theme, has not just been in the issue of disparities in educational opportunities, but also in the measurement and explanation of academic achievement gaps (academic performance gaps) among differing social classes. So-called 'new sociology of education' emphasizes the necessity of objectivizing the academic performance itself, which traditional sociology of education has considered as obvious, and touches upon sociological principles where the knowledge to be delivered is selected and systematized (Young, 1971), the

process of delivering knowledge (e.g. Keddie, 1971), and processes of implementing tests (Karabel & Halsey (eds.) (translation), 1980). We can say that theoretical attempts by Bernstein and Bourdieu also focus on academic achievement gaps among classes as a core theme. While over time its emphasis has been changing, Western sociology of education has consistently paid attention to the question of 'who acquires academic ability, and why'?

In Japan, however, sociology of education before 2002 rarely focused on academic achievement as a direct object of sociological studies. Notable exceptions have been the period shortly after World War II, and examination of problems related to education and its

inequality in so-called Dowa areas, populated by Burakumin outcasts. This seems to be because it had been relatively difficult for researchers to obtain measurement data on academic achievement, and moreover, that the focus of research on educational screening had been on opportunity inequality causing exclusion from screening (inequality in which some students are excluded from achievement-based screening). First of all, then, it was not only researchers but the whole of Japanese society also that lacked data on academic achievement. After 1960, surveys on academic ability were seldom conducted by governments, and were not published even if conducted. For researchers, data on academic achievement was extremely hard to obtain from research resources. Secondly, the main focus of research concerning education and screening in Japan continued to be places on career paths choices, and the inequality in opportunities for higher education. There appeared no research focusing on the process of academic ability formation, despite it supposedly influencing examinations for the screening of new students, and career path choices. Although this does not necessarily mean that there was no interest in 'screening before screening', that is to say the mixing of social classism with measured academic achievement (Kono, 1957), under the influence of Davis et al. (Davis, 1951), almost no educational sociologists measured and analyzed academic achievement from this perspective (see Note 1). Thus we knew the inequality that existed in screening (inequality disguised as achievement-based principles) in Japanese society through research findings in Western countries but did not deal with or explain it by actually measuring it. As a result, the measurement and explanation of academic achievement gaps were left as uncharted territory, despite these very gaps being the main theme of sociology of education.

It was only around 2002 when educational sociologists in Japan started to become involved in academic achievement surveys. Sociological research on academic achievement suddenly increased after this (e.g. Harada (wr. and ed.), 2003; Kariya, et al, 2002 a, 2002 b, 2002 c; Mimizuka, et al. 2002), while there had been exceptions as mentioned above. Compared to the importance of the theme, however, the total quantity of research is still minute. Needless to say, sociological research on academic achievement was triggered by the 1998 revision of government guidelines for teaching, 'The Course of Study' as well as the outbreak of the subsequent dispute over the decline in academic achievement. In response to this, the public took an interest in whether academic achievement had declined when debating the pros and cons of the proposed, more 'relaxed', education policy, but the core of sociological interests was academic achievement gaps. It would be Kariya and Shimizu (eds.) "Gakuryoku no Shakaigaku (Sociology of

Academic Achievement)" (2004) that presented important findings, not from the perspective of issues related to standards of academic achievement, such as the decline in academic achievement, but from the standpoint of the issues related to gaps, focusing on the distribution of academic achievement among various classes. Based on two large-scale surveys, named the Kansai Survey and the Kanto Survey, the following have been clarified : (1) Although it is possible for children whose fathers did not graduate from universities to raise their socio-economic status through their own efforts, children whose fathers graduated from universities have initial advantages in terms of academic achievement, and the more difficult the questions on tests are, the greater the gaps are in academic achievement among classes (Kaneko, 2004); (2) When academic achievement gaps among classes in 1989 and 2001 were compared by creating representative indices of social classes, the tendency was for the gaps to increase (Kariya, 2004).

At this point, it might be thought that these findings should be regarded as representing the vanguard of sociological research on academic achievement in Japan. Some problems remains with this evaluation, however, as described below.

Firstly, the relationship between academic achievement and the various factors that define it is still presented only hypothetically. Specifically, although it is pointed out that factors such as family background (class variable), each individual's learning behaviors (efforts), use of learning opportunities outside school and the types of lessons provided by schools or teachers (pedagogy) are correlated with academic achievement, it is hard to say that analysis has been sufficient in terms of the small coefficient of determination in the multiple regression analyses and the quality of variables used for the analyses.

Secondly, analyses of family background (class variable) solely depended on answers to several questions regarding parents' academic backgrounds (whether they are university graduates or not) and cultural environments in a self-administered questionnaire survey. Credibility of data remains a problem, and only very limited aspects of family backgrounds (class variable) were observed. It is essential to analyze, at the very least, information on household income and educational investment obtained from guardian surveys.

Thirdly, the areas in which surveys were conducted are also problematic. The relationship between the degree of academic achievement gaps and the factors defining them may well vary depending on regional background. In particular, the existence and status of

private junior high schools would have a non-negligible influence on how the family background (class variable) acts on the formation of children's academic abilities (see Note 2). Research on academic achievement presented by educational sociologists after 2002 happened to be based on surveys targeting metropolitan areas and surrounding cities. It is necessary to pay attention to regional diversities in the formation of academic ability by expanding the scope of areas to be surveyed.

The main subject of this paper is the issue of tackling academic achievement gaps among elementary schools. In order to tackle academic achievement gaps (or rather, in order to deal with them through structural reform rather than symptomatic treatment only), it is necessary to first measure and explain academic achievement gaps. However, in view of the above mentioned limits surrounding the sociology of academic ability, we have to first start by properly observing the gaps. In this paper, using the Japan Education Longitudinal Study 2003 (JELS 2003) which I conducted with my colleagues, I will describe the actual situation of academic achievement gaps in elementary schools in two contrasting areas, and point out the political implications as well as research tasks arising from my findings.

The JELS 2003 was a longitudinal research study which aimed to obtain a statistical portrait of the academic ability, aspirations, career paths and vocational lives of Japanese young people. It was designed and implemented as part of the 21st Century COE Program, entitled Studies of Human-Development from Birth to Death at Ochanomizu University in Tokyo, Japan. In an effort to grasp the pattern of academic ability, aspirations and career choices (acquisition of academic qualifications or jobs) in relation to family background (social class), school background and regional background (including the labor market), surveys such as the following were implemented: (1) a student academic ability survey, (2) a guardian survey and (3) a survey on supervisory teachers. This paper will use the results of the first wave of surveys, implemented from 2003 to 2004, with the analysis limited to the arithmetic achievement of students in the sixth grade. The survey areas were dubbed Area A and Area C. Area A is a medium-sized city near a large city in the Kanto region (a population of approximately 250,000) where the percentage of students who go onto private junior high schools is 14.2% (see Note 3). Area C is a small-sized city in the Tohoku region (a population of approximately 90,000) where there are no private junior high schools for day students (see Note 4).

2. Analysis of Factors Defining the Arithmetic Achievement of Students in the Sixth Grade Based on the Student Survey

(1) Area A

First, following the example set by previous studies, we analyzed factors that define the arithmetic achievement of students in the sixth grade by using the student questionnaire survey only. The main family-related factors considered to have an influence on the formation of children's academic ability are economy (family budget, educational investment, etc.) and culture (collection of books, rooms for studying, parents' academic background, interest in and expectation for studies, cultural experiences, etc.), in addition to other wide-ranging factors. In the JELS 2003, by using the research designs utilized in the past as reference (e.g. Kariya & Shimizu (eds.) 2004; Mimizuka, et al. 2002), we prepared variables and used them for a multiple regression analysis in which the pass rate in the arithmetic achievement test is the dependent variable. In doing so, we preliminarily performed an analysis of correlation with the pass rate and narrowed down an independent variable.

Table 1 (left side) shows the analysis results for Area A. Learning time at home is a result of a question asking about "regular" learning time "at home". Answers were converted to minutes. As an indicator for the use of learning opportunities outside school, the survey looked at whether students attend preparatory schools or not. Since after-school supplementary schools are not significant and are negatively correlated with preparatory schools, we excluded them from the analysis. The multiple correlation coefficient was 0.539, not considered low. As for the β value, each dummy was shown to be significant except for the home study dummy. The β value shows that attending a preparatory school, long learning time at home and having a father who graduated from university all increase the likelihood that a child will have higher arithmetic ability. According to the B value, an increase of the pass rate by approximately 16 points can be expected through attendance at a preparatory school. When a child has a father who is a university graduate, the pass rate increases by nearly nine points compared to those cases where the father did not graduate from university. Additionally, the pass rate increases by approximately nine points when a child studies for longer than 100 minutes at home. Table 2 shows the result of extracting these three main independent variables and using them sequentially for a multiple regression analysis. Changes in R squared were all significant, and the increase in the determination rate

Table 1 Results of a Multiple Regression Analysis with Sixth Grade Pass Rates in Arithmetic as a Dependent Variable

	Area A			Area C		
	B	β	Singificance probability	B	β	Singificance probability
Invariable	27.152		0.000***	35.179		0.000***
Gender dummy	3.849	0.088	0.001**	3.839	0.105	0.001**
Learning time (hours/mins) at home	0.087	0.221	0.000***	0.049	0.097	0.003**
University graduate father dummy	8.444	0.184	0.000***	6.348	0.153	0.000***
Preparatory school dummy	16.481	0.261	0.000***	3.454	0.026	0.437
Supplementary school dummy	3.209	0.059	0.021*	0.391	0.005	0.881
Museum dummy	5.156	0.115	0.000***	2.882	0.079	0.018*

Note: All dummy variables shown below:

Gender dummy: (M = 1)

University graduate father dummy (University graduate = 1)

Preparatory school dummy (attendance = 1)

Museum dummy (have been taken to a museum or gallery by a family member = 1)

Home study dummy (mother or father has helped with homework at least once during the past month = 1)

Table 2 Area A Multiple Linear Regression Analysis - Stepwise Analysis for main 3 independent variables

	step 1	step 2	step 3
	β	β	β
(Invariable)			
University graduate father dummy	0.317***	0.248***	0.218***
Preparatory school dummy		0.372***	0.264***
Learning time (hours/minutes) at home			0.221***
R	0.317***	0.484***	0.519***
Adjusted squared R value	0.100	0.233	0.267
R 2 change	0.101***	0.133***	0.035***

Dependent variables: arithmetic pass ratio

(JELS 2003)

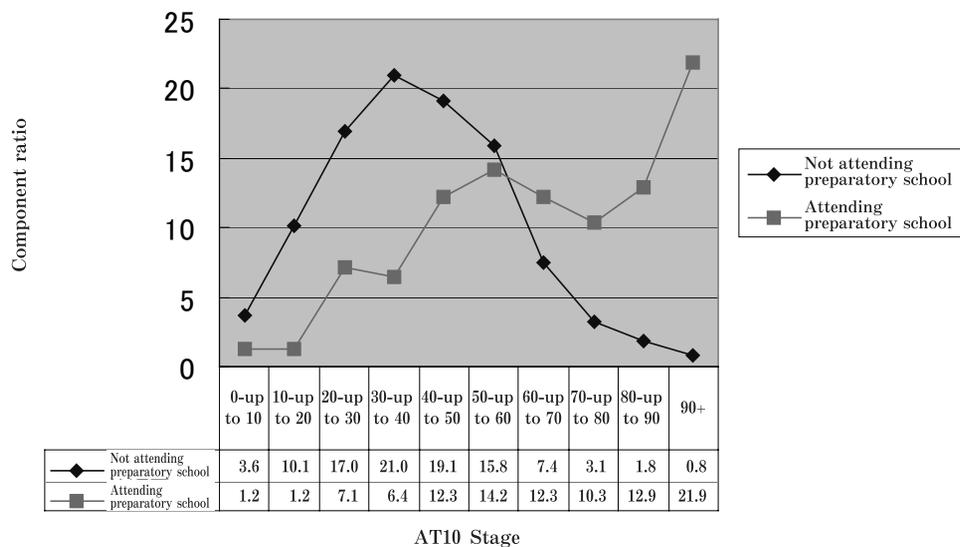


Figure 1: Distribution of pass rate in Area A by preparatory school attendance

was the greatest when the preparatory school dummy was provided, followed by the university-graduate father dummy. Figure 1 shows the distribution of pass rate by whether children attend preparatory schools or

not and by Figure 2 the same distribution according to fathers' academic backgrounds.

Similar analysis results have been gleaned from

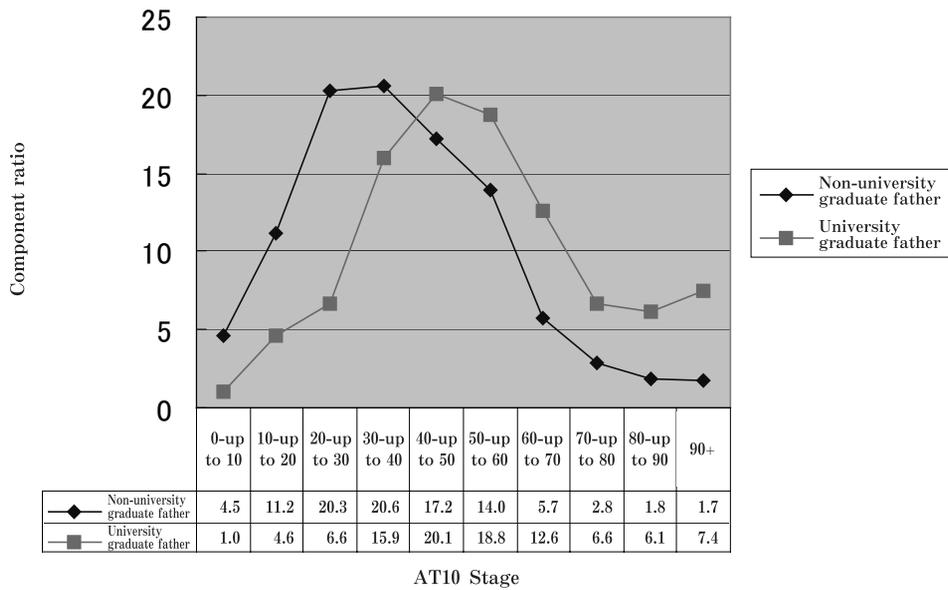


Figure 2 : Area A-Distribution of Pass Ratio according to fathers' academic background

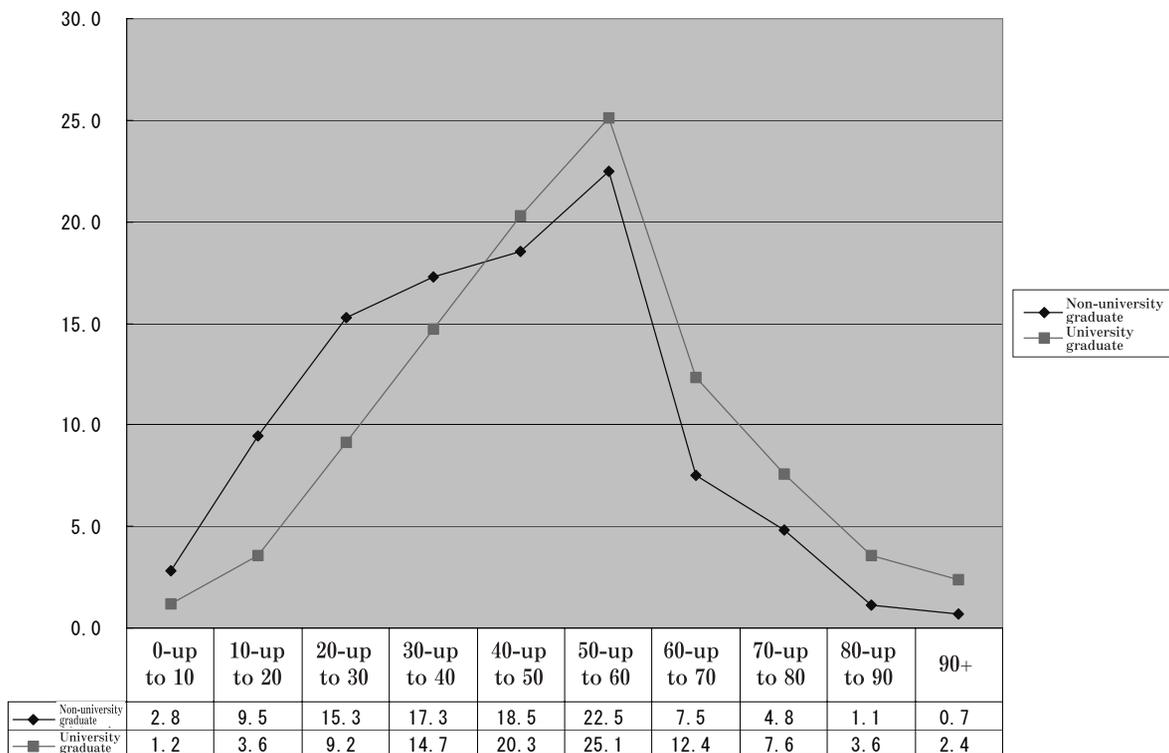


Figure 3 : Distribution of Pass Rate in Area C according to fathers' academic background (JELS 2003)

studies on junior high school students in the Kansai region have been reported (Kariya et al., 2002, p. 54), and the data on grade students revealed by this survey also indicates that the attending preparatory schools and the father's academic background can have significant influence on academic ability.

(2) Area C

Table 1 (right side, shown above) shows the results of

the same analysis on Area C. Although the β value of Area C is relatively small compared to Area A, a common point is that fathers' academic backgrounds and learning time at home are significant. Whether or not children attend preparatory schools is not significant in Area C. What is most important in the analysis results of Area C is that the adjusted R-square value is small, at 0.54. Figure 3, which shows the distribution of pass rate by fathers' academic backgrounds, also clearly

indicates that the influence of family backgrounds on academic achievement is small. Although the distribution of academic ability of children with fathers who graduated from university shows a slight incline toward higher marks than those whose fathers did not graduate from university, the difference between these two groups is minor compared to Area A (Figure 2). In Area C, family backgrounds and attending preparatory schools do not necessarily have a crucial influence on defining children's academic achievement. Regional diversification exists in terms of the process of forming academic ability.

3. Analysis of Factors Defining Academic Achievement Based on a Parent/Guardian Survey

As already described, one of the fundamental defects in the sociology of academic achievement in Japan was that it depended, when discussing family background (class variable), on data obtained from self-administered questionnaire surveys answered by children. Information was limited to certain aspects, such as parents' academic backgrounds (whether they graduated from university or not) and cultural environments, and lacked data on family finances in particular. The only way to correct this defect is to implement a concurrent survey on families' cultural/financial situations, answered by parents. However, difficulties arise when conducting a survey with parents. First of all, conducting a survey for parents is difficult simply because of personal information protection and respect for privacy. This difficulty increases more when the survey content is related to a family's cultural environment and financial situation. Secondly, even when it is possible to conduct such a survey, the data collection rate is

low. For example, in the case of the JELS 2003 used for the analysis below (Area A, mail survey), the data collection rate was only 29.5%. Furthermore, not only was the data collection rate low but data also was collected from specific types of groups. In the JELS 2003, the collection rate tended to be high among groups with high academic achievement, high educational background and high incomes (Kanie & Sakamoto, 2006; Mimizuka, 2007). Taking these limits into consideration, I will proceed with an analysis of factors defining academic achievement by targeting Area A, where the influence of family background on academic achievement was relatively large, making use of JELS 2003 parent survey data.

(1) Family background and academic achievement

In the JELS 2003, we prepared questions about and gathered data on the following: (1) parents' academic backgrounds and jobs/occupations, (2) family budgets and educational investments (total household income, educational expenses outside school), (3) parents' expectations for children's academic careers and (4) parents' behavioral habits and cultures. It is inappropriate to use all the data for a multiple regression analysis where the arithmetic academic ability is the dependent variable because there are too many variables, as well as from the perspective of collinear problems. For these reasons, the analysis was divided into two stages. The variable was narrowed down by examining the relation of each variable group to arithmetic academic achievement through a multiple regression analysis (Stage 1). A multiple regression analysis was then performed which considered family background (class variable) as an independent variable (Stage 2) (Mimizuka, 2007).

The final result of the multiple regression analysis is

Table 3 Multiple Linear Regression Analysis of Family Background as an Explanatory Variable (Area A)

	Unstandardized coefficient	Standardized coefficient	Significance probability
	B	β	
(Dependent variables)	-32.635		0.015*
Fathers' profession	0.457	0.023	0.709
Mothers' academic background	3.854	0.140	0.023*
Household income	0.011	0.155	0.018*
Expenditure on educational activities outside of school (per month, for relevant child)	0.000	0.298	0.000***
Mothers' interests and hobbies	1.044	0.023	0.676
Mothers' email usage	0.924	0.020	0.719
Academic expectations of parents/guardians	3.557	0.222	0.000***
Dependent variable: Arithmetic pass ratio - 6th Grade Elementary		***P<.001 (JELS 2003)	
R	0.594	**P<.01	
Adjusted R ²	0.333	*P<.05	

Notes) Mothers' interests and hobbies: participation of mother in private hobby classes
Household income: annual income of entire household members
Mothers' email usage: mother uses email

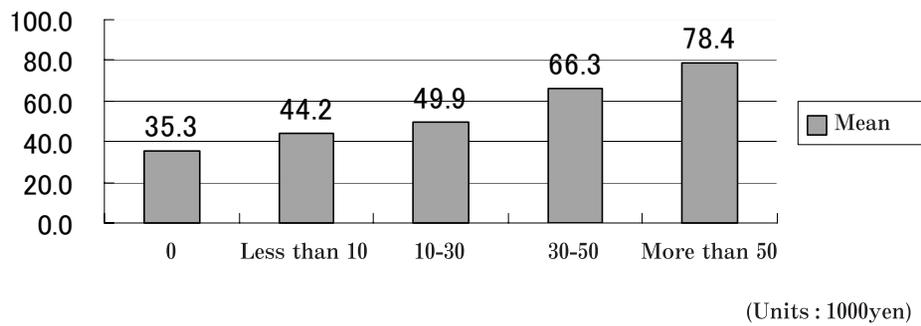


Figure 4: Monthly average on academic ability in arithmetic outside of school (JELS 2003)

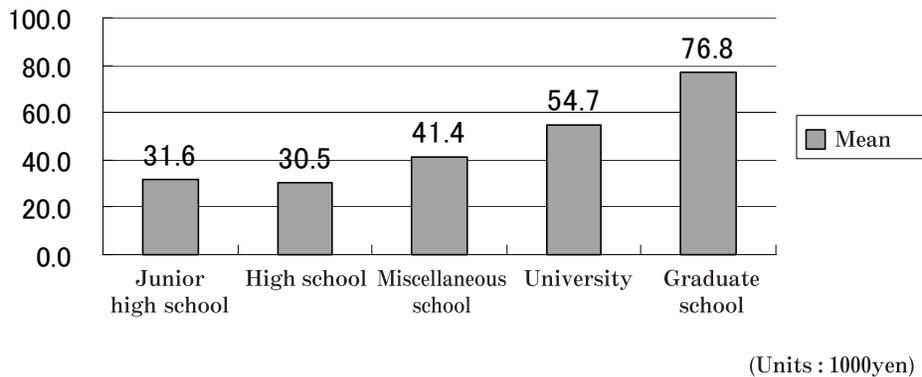


Figure 5: Mean academic ability in arithmetic according to academic expectations of parents/guardians (JELS 2003)

shown in Table 3. The adjusted R-square value was 0.333, which exceeded that in the analysis using data obtained from children (Table 1). This means that children's arithmetic ability can be explained to a considerable extent only by the variable related to family background obtained from the parent survey data. Looking at the β values, each value is high, positioned in the following order : (1) educational expenses outside school, (2) parents' expectations for an academic career, (3) household income and (4) the mother's academic background. These four variables are statistically significant. Fathers' jobs and the parents' behavioral habits (culture, lessons in music and hobbies and use of e-mails) are not significant. Although the influence of other variables is not controlled in Figure 4, it still serves to show that the arithmetic pass rate increases as educational expenses outside school increase. In addition, Figure 5 implies that the higher the parents' expectations for an academic career, the higher the arithmetic pass rate. In particular, high academic achievement is observed in the group where parents expect children to continue their education as far as graduate schools.

(2) Learning time at home, attending preparatory schools and family background

Furthermore, Table 4 shows the results of a multiple regression analysis which took into account not only the family background mentioned above but also learning time at home, whether children attend preparatory schools or not and their gender, as obtained from student survey data. The following findings were shown.

- (1) Ranging from Model 1 to Model 6, changes in R-square are all significant statistically.
- (2) The adjusted R-square value in Model 1 (learning time at home only), which was only 0.234, increased up to 0.291 in Model 3, when data obtained from the child survey was used (learning time at home, gender, preparatory schools). In Model 6, to which all family background variables obtained from parent survey data were added, it reached 0.406. Again, family background variables are clearly important when explaining children's academic achievement.
- (3) In the final Model 6, the variables with a high β value ranked in the following order : 1) whether children attend preparatory schools, 2) parents'

Table 4 Multiple Linear Regression Analysis (Stepwise) on Academic Ability in Arithmetic in 6th Grade Elementary School Children (Area A)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	β	Significance										
(Dependent variables)		0.000***		0.000***		0.000***		0.000***		0.000***		0.152
Learning time (hours/minutes) at home	0.487	0.000***	0.487	0.000***	0.328	0.000***	0.266	0.000***	0.228	0.001**	0.146	0.041*
Gender dummy			0.157	0.005**	0.135	0.014*	0.130	0.013*	0.088	0.095	0.118	0.026*
Preparatory school dummy					0.252	0.010***	0.239	0.000***	0.232	0.000***	0.192	0.005**
Fathers' profession							0.138	0.013*	0.102	0.065	0.045	0.441
Mothers' academic background							0.187	0.001**	0.155	0.007**	0.119	0.038*
Academic expectations of parents/guardians									0.192	0.001**	0.157	0.006**
Household income											0.145	0.017*
Expenditure on educational activities outside of school											0.149	0.029*
Adjusted R ²	0.234		0.256		0.291		0.354		0.381		0.406	
R ² Change	0.237		0.025		0.038		0.068		0.029		0.028	

***P<.001 (JELS 2003)
**P<.01
*P<.05

expectations for an academic career for their children, 3) educational expenses outside school, 4) learning time at home and 5) household income. The variables of attending a preparatory school and learning time at home, as analyzed according to student survey data, were shown to still be considered important variables in an analysis to which family background variables had been added. The family background variables that have a strong influence on defining academic achievement are parents' expectations for an academic career, educational expenses outside school and household income.

- (4) The importance of learning time at home (effort index) was lessened as we added more family background variables. This means that the effect of learning time at home on academic achievement may have been engendered by the influence of family background.
- (5) In the model to which parents' expectations for an academic career and educational expenses outside school were added, fathers' jobs become statistically insignificant. The effect of fathers' jobs could eventually be withdrawn into financial variables.
- (6) A fathers' academic background is a variable which showed a high β value in the analysis based on student survey data. In Table 1, it was an important variable that defined a child's arithmetic academic

ability. In the analysis to which the parent survey data was also added, however, a father's academic background became statistically insignificant, and it was not employed in the final model (Table 4) either. The following can be considered as potential causes for this: 1) In the parent survey, 60% of the collected data was obtained from fathers who graduated from universities or graduate schools; 2) The effect of fathers' academic backgrounds on children's academic achievement lapsed because of other new variables such as the parents' expectations for an academic career and financial variables (educational expenses outside school and household income). If the latter was the cause, it would mean that a father's academic background was a proxy indicator for measuring the influence of expectations for children's academic careers and family finances.

4. Implications and Tasks: the Emergence of Parentocracy

The first finding of this paper is that different factors to define academic achievement were found in Area A and Area C. As the results of a comparison of these two areas show, the way in which academic ability is formed is not uniform in some regions, especially in its relation to family background. While clarifying the social mechanism for the formation of academic ability, we have been raising the alarm about the emerging link between family background with academic achievement.

We must, however, note that the results of our efforts have been solely based on the results of surveys in metropolitan areas and surrounding cities only. While fathers' academic backgrounds were certainly important defining factors in children's academic achievement in Area C, too, we cannot yet say that family backgrounds have a decisive influence on children's academic achievement. In this sense, although our warning is not necessarily insignificant, its extent must be limited. We can also surmise that that differences in regional environments, such as whether or not private junior high schools exist, the necessity for preparing to proceed to such schools, and educational strategies at home for dealing with such necessity (arousing aspirations toward a certain class), may bring about crucial gaps in the formation of academic ability. This suggests that there may be vast regional differences in how people achieve greater social status through the formation of academic ability. In order to examine academic achievement from a sociological point of view, we need to expand our areas of study and explain findings according to regional context.

In Area A, located near a large city, family background played a major role in explaining the distribution of academic achievement. In Area A, household income, educational investment and parents' strong expectations for academic careers had a closer connection with children's academic achievement than learning time at home (effort). Allowing a child to attend a preparatory school is an action which a family who are able to bear economic burden can take in order to make true their expectations for higher education. In this region, screening based on academic achievement is similar to screening based on a family's financial/cultural conditions. Academic achievement is a proxy indicator of family background. While the institutional structure of school education can be diverse depending on the region, students with high academic abilities as a result of their families' financial/cultural conditions are protected by secondary education institutions for six consecutive years. This is particularly the case in metropolitan areas and surrounding cities. As a result, they are afforded different choices for career paths and a wider range of possibilities for their future, causing gaps to widen.

Phillip Brown (translated in 2005) pointed out that educational screening based on "achievement" would transform into "parentocracy" in a market society. People are selected according to an equation of parentocracy, "wealth + desire = selection", not an equation of meritocracy, "ability+effort=achievement". He says that screening depends on the selection shaped by parents' desires, which are based on not achievement

but wealth. How does this apply to Japanese society? Let us first recall that, in response to the issue of who is able to acquire academic ability, Table 3 indicated that the most important factor in this was families' educational expenses outside school, the second was parents' expectations for an academic career, and the third was household income. In the sense that parents' wealth (educational expenses outside school, household income) and desire (expectations for academic career) define children's academic achievement, we can presume that Japanese society is also on the road to parentocracy. Since the principle of "wealth + desire = academic achievement", is used, not "wealth + desire = selection", it may well be that this represents opportunities to justify inequality, which has disguised itself as a meritocracy based on principles of achievement.

Japanese society today is an unequal society. People, however, do not feel dissatisfied just because there is inequality in academic achievement. In a meritocratic society, "equal opportunities" are the premise for maintaining such a society, in order that people can equally compete with one another in abilities and efforts. That is why people can quietly accept, as fair inequality, the sort of inequality that arises as a result of equal competition. In a parentocracy, however, since the premise of equal competition is not guaranteed by society, problems cannot be solved simply providing equal opportunities. The essence of inequality must be detected behind an idea of academic achievement seemingly disguised as being the result of natural ability and efforts through achievement-based principles.

Academic achievement gaps, then, are no longer just an educational problem. This is because such gaps stem from the social structure itself, which goes beyond families and regions. In order to alleviate academic achievement gaps, policies for reducing income disparities and promoting employment are required in the very foundations of Japanese society.

Nonetheless, measures must be taken also in educational circles. First, education administrative agencies should check the reality of current situations and the degree of existing educational gaps among the regions or schools under their control. Having done so they should implement policies for investing those resources (personnel, articles, funds) required for reducing the gaps. It can be said that this is an urgent task that faces education administrative agencies at both national and regional levels. Even today, many schools are concerned about low levels of academic ability caused by financial/cultural environments in local communities (related to income levels and academic qualification levels of parents, i.e. local residents). Entrusting the task

of implementing measures for improving academic ability at schools located in unfavorable environments to school managers and teachers only, simply by urging them to carry out the task, is akin to an abdication of responsibility by administrative bodies. Are administrative bodies even truly aware of what problems exist in which schools, and how they are related to academic achievement? Taking this into account, dynamic, supportive policies for investing the necessary resources into regions and schools in need of them are to be desired.

Secondly, there are policy issues over educational structures, especially the status of private and public schools. Academic achievement gaps caused by family backgrounds in Area A largely stem from an educational structure which has within it institutions in which funds for education can be invested, as well as plenty of escape routes from ordinary public schools.

Thirdly, this issue must also be faced by each school and each teacher. Disparity in academic achievement cannot be tackled merely through the organization of academic conditions by school administrations. Ultimately, the results of education depend on schools where teachers can lead students and support families. There is a need for guidance in the sort of careful improvement that can focus on groups with low academic achievement levels, including guiding students' learning at home. In order to tackle this task, it would be essential to discuss ethnography which involves pedagogy, school climates/cultures and social capitals in regions although we did not look at these factors in this paper due to lack of data. Studies on so-called "effective schools", such as by Shimizu (2004), and the discussions by Yamada (2004), which linked teaching styles to academic achievement, are particularly noteworthy (see Note 7).

The only way that children who are in poor cultural environments, and have families without money to spare for education outside school (or little will to do so), can win the race to the future despite their handicaps, will be through education (see Note 8).

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(Notes)

- 1 Exceptions exist such as research by Miyajima and Fujita (eds., 1991), which focuses on cultural hierarchy based on the Bourdieu's theory.
- 2 With regard to recent sociological research on academic achievement, there are problems other than the ones pointed out in the main text. First of all, there is a lack of empirical examinations regarding the relationship between

academic ability/performance and subsequent career choices and status achievement. Not only does conventional research have no data on academic achievement but have also failed to deal with the connection between self-evaluation of performance and career path choices. Furthermore, it has not clarified how early academic achievement can influence future career paths or achievements in status. Changes in evaluation engendered by recent educational reforms have rendered ambiguous the self-evaluation of academic performance. It is necessary to conduct a longitudinal study which uses measured academic achievement as a variable. Secondly, there is a need to examine measured academic achievement itself. Academic achievement can only be what is operationally defined and measured by academic achievement tests. Even though research on what academic achievement tests are supposed to measure retains its significance, it is beyond discussion that measured academic achievements depend on the method of measurement and related concepts of academic achievement. For example, as the new viewpoint on academic achievement indicates, changes in educational policies and the school market accompany changes in the academic abilities themselves which children are supposed to (required to) acquire. Moreover, without being pointed out by Bernstein, we can easily imagine that, when different academic achievements are desired, there will be changes in the category of children who are evaluated as having high academic achievement as a result of academic ability formation. For instance, as this new viewpoint on academic achievement begins to penetrate schools, it is predicted that children with higher academic backgrounds will capture ever more favorable positions. Therefore, it is necessary to be conscious of the concept of academic achievement and the methods used to measure it.

3 Based on the questionnaire survey targeting sixth-grade students in Area A.

4 A summary of the surveys is as follows.

<Area A> Of all the public elementary schools in the city, half (14 schools) were selected randomly. The number of effective responses was 1,118, and the effective rate of recovery was 96.3%. The survey was conducted from October to December in 2003. The parent questionnaire survey was conducted in July 2004 using a mailing method. The number of effective responses was 247, and the effective rate of recovery was 30.4%.

<Area C> All public elementary schools in the city (21 schools) took part in the survey. The number of effective responses was 921, and the effective rate of recovery was 98.5%. The survey was conducted in November 2004 (the parent survey was conducted simultaneously). As for the parent survey, the number of effective responses was 413, and the effective rate of recovery was 44.2%. The contents and specifications of the questionnaire and academic ability survey were the same for both areas. However, a fraction of the questions for the academic ability survey were changed according to the textbooks used in the relevant school.

The basic report on survey results was published in the form of "Seishonenki kara Seijinki eno Iko nitsuiteno Tsuisekiteki Kenkyu (Follow-up Research on the Transition from Youth to Adulthood)", JELS No. 1 - 10 (Ochanomizu University, 2004-2007). Some of this information is

available on the website. See http://www.li.ocha.ac.jp/hss/edusci/mimizuka/JELS_HP/index.htm

This type of large-scale panel survey should ideally be conducted using national samples, but in practical terms this is virtually impossible. We therefore implemented research strategies by limiting the areas of survey and retaining the representativeness within the area while increasing the areas sequentially.

5 Although parents' academic backgrounds are the only class variables which can be obtained from questionnaires for their children, there remains a question of reliability in the answers from children. The discrepancy, for example, in responses on father's academic backgrounds between the child and the parent surveys cannot be ignored.

6 If we are to screen new students using this academic achievement test and set 90 points as the acceptance line, 80% of the successful applicants attend preparatory schools and 70% of the successful applicants have fathers who are university graduates. Even if the acceptance line is set at 60 points or above, the results are 40% and nearly 60% respectively. The percentage of students who attend preparatory schools and whose fathers are university graduates is only 13.7% and 34.7% respectively of the total surveyed. See Mimizuka (2006).

7 The "effective schools" studies are criticized for overlooking the bigger picture as they focus on the solutions centering on schools (Whitty (Translation), 2000). If the studies on effects of schools lack the concept of connecting the macro-structural, -political and -historical factors with educational practices, they will likely end up listing inoperable variables. In this regard, Yamada's (2004) analysis using Bernstein's competence and performance pedagogic models is highly suggestive. As was focused on by Kariya (2004), this analysis provides tools for curriculum reform and for dealing with the issues related to academic achievement gaps.

8 Lastly, we would like to point out the necessity of parent surveys in sociological research on academic achievement. Child surveys alone are not sufficient for collecting data regarding family background (in particular, it is impossible to understand economic variables through this method alone) and there will be an inevitable need for parent surveys to be conducted in the future. Needless to say, many of the sociologically important variables include issues of privacy that need to be protected. As the demand for personal information protection and respect for privacy grows, and refusal to participate in surveys increases, how can surveys hope to collect private data viably? This is an important point that will decide whether or not we can satisfy academic production and its social and political needs. We will need to obtain a social consensus for research and study issues, as well as to create a mechanism for securing agreements from survey targets, by establishing a personal information protection system and ensuring ethics in research.

Acknowledgment

This article was first appeared in the *Journal of Educational Sociology* (No. 80, pp. 23-39, May, 2007), edited by the Japan Society of Educational Sociology, as "小学校学力格差に挑むだれが学力を獲得するのか", and was translated from Japanese with the permission of the editorial board of the JSES.

PROCEEDINGS 01

March 2008

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