

A Study of Junior High School Students' Educational Aspirations in Present-Day Japan, with a Focus on Tracking and Pre-Entry Effect

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Abstract

The purpose of this paper is to examine Japanese students' educational aspirations with respect to tracking, while focusing on the "pre-entry effect." The percentage of Japanese students who have advanced into universities and colleges has risen in the last two decades; this suggests that the Japanese tracking mechanism has changed. Some studies early in this century have found that (1) the percentage of Japan's population comprising those aged 18 years is dropping, due to Japan's low birthrate, and (2) diversified entrance examinations—such as recommended admission tests and so-called "admissions office entrance examinations"—can "warm up" vocational high school students' educational aspirations. However, no study has examined the degree, if any, to which the change to high school can affect junior high school students' higher-educational aspirations. To help filling this gap in the literature, the current study analyzes junior high school students' educational aspirations, while focusing on the "pre-entry effect."

This study uses data from ninth-grade students and their guardians (N = 386), all from a metropolitan area denoted as "X." The results were as follows: 1) Preferred tracks relate to junior high school students' aspirations, 2) a few students who want to go on vocational tracks hope to go to university, and 3) students who want to go on vocational tracks are more likely to be from lower-income households than those on academic tracks.

Analyses showed that 1) the Japanese tracking system, and especially the "pre-entry effect," still exists, and 2) the social stratification of junior high school students still correlates with their preferred tracks. Nevertheless, Japanese tracking studies in the 2000s have shown that changes in vocational tracks—as mechanisms that "warm up" or "cool off" junior high school students' educational aspirations—have changed very little.

Key words: tracking, pre-entry effect, educational aspiration, high school hierarchy, junior high school students

Introduction

The percentage of Japanese students advancing to university studies has risen in the last two decades. In 1990, the percentage of students who entered higher education was about 35 percent; in 2005, however, one in two senior high school students entered university. The so-called "mass educational society" (Kariya 1995)—in which people have opportunities to acquire long-term education—has spread throughout present-day Japan. This situation may "warm up" or "cool off" students' educational aspirations.

Japanese senior high schools bear the following three characteristics. First, there are several schools within a school district. Second, entrance examinations are held; almost all junior high school students take the exams, because with a senior high school entrance rate in excess

of 95 percent, entrance is highly competitive. Third, Japanese senior high schools are hierarchically structured, with schools that produce the students who eventually enroll in prestigious universities at the top. In line with these characteristics, junior high school students are assigned to senior high schools according to their academic achievements. The educational aspirations of Japanese students are adjusted according to the schools they can enter.

However, in recent years, the rate of students who have entered university has risen; students in lower-level high schools now have increased access to higher education. How, then, has this change in the hierarchical structure of Japanese high schools affected the educational aspirations of junior high school students?

This paper reviews previous studies of mechanisms that "warm up" or "cool off" students' educational aspirations, examines the accumulation of research

results vis-à-vis the tracking mechanism, and analyzes educational aspirations among junior high school students in present-day Japan.

1. Literature Review

(1) Differences in American and Japanese Tracking

The concept of “tracking” is proposed by Rosenbaum (1976) and, in practice, there are three categories thereof: 1) an academic track, 2) a vocational track, and 3) a general track (Kariya et al. 1997). The academic track is a preparatory track for attending university or college, while the vocational track is a preparatory track for employment. The general track, meanwhile, is ambiguous in terms of career choices. High school students’ career choices not only determine, but are determined by these tracks. In this way, tracking can be thought of as a career-choice mechanism that involves socialization; the mechanism of tracking, however, differs between the United States and Japan. Kariya (1991) outlines the differences as follows.

The American high school system is comprehensive, which means that American tracks are based on the curriculum each student chooses. On the other hand, Japanese tracks are dictated by high school rankings. As has been noted, Japanese high schools are characterized by three traits: (1) several schools in each school district, (2) entrance examinations, and (3) a hierarchical structure. In the United States, the academic track, vocational track, and general track are roughly equivalent to preparatory schooling for university or college, for employment-related schooling, and for schools in which one learns general subjects, respectively. Meanwhile, Japanese high school students’ career choices are determined by which schools they belong to, rather than which curriculum they take; this is a conspicuous feature of the Japanese tracking system (Fujita 1980). Such differences between the American and Japanese tracking systems create different mechanisms with regard to educational aspirations.

First, the American tracking system “cools off” students’ educational aspirations by introducing competition (e.g., entrance exams for university or college). American students will have no trade qualifications if they take a curriculum that prepares them for university; enrollment in community colleges is available for these students. Students who do not take a curriculum adequate for university entrance can instead enter community colleges; if they can get good academic results, they may be able to go to university or college. However, students who do not take an academic curriculum in high school cannot, generally speaking, achieve good academic results in a community college; they gradually realize the ramifications of their choices. The connection between high schools and universities in

the United States gradually “cools down” students’ educational aspirations after they graduate from high school.

On the other hand, Japanese students are likely to decide which schools they can enter by their academic performances in junior high schools. The high school hierarchy itself “cools down” students’ aspirations, in something termed the “pre-entry effect” (Kamens 1981), prior to their entrance into senior high school (Kariya 1986).

(2) Reviews of Tracking Studies in Japan

Rohlen (1983) points out one feature of Japanese high school: students can make fewer choices, compared to American high school students. Rohlen states that Japanese high school students walk a “straight and narrow pathway,” taking patterned steps.

In the last half of the 1990s, however, because of social changes such as (1) a decrease in the percentage of Japan’s population comprising those aged 18 years, due to Japan’s low birthrate and (2) a diversification in entrance examinations—such as recommended admission tests and so-called “admissions office entrance examinations,” the latter of which emphasizes personal interviews—means that more colleges select students who have not taken an academic achievement test. The net result is that more high school graduates are going to university. Mimizuka (2000) points out changes in the Japanese tracking system: more students in the Japanese vocational track are going to university, college, and specialized training colleges.

Recently, Nakamura (2006) has noted the phenomenon of “going to university from Japanese vocational tracks”; he proposes that the diversification of entrance examinations “warms up” high school students’ educational aspirations. By the same token, Okabe (2009) points out that recently, some junior high school students who have been going to vocational high schools are eventually in the hopes of going to university.

The net result is that the Japanese tracking system has lost its function of “cooling off” high school students’ educational aspirations, because students can now go to university from a vocational high school.

2. Research Questions and Methods

Three research questions were posed, for the purposes of this study’s data collection.

(1) How many junior high school students who want to go on vocational tracks hope to go to university? For this first research question, cross-table analysis will be used.

(2) What factors determine junior high school students’ educational aspirations? For this second research question, logistic regression analysis will be used.

(3) Who wants to go on vocational tracks? For this

third research question, logistic regression analysis will again be used.

3. Surveys

The Japan Educational Longitudinal Study (JELS) is a longitudinal study that aims to capture a statistical portrait of the academic abilities, aspirations, career paths, and vocational lives of Japanese young people. It was initiated in 2003 and is now implemented as part of the Global COE Program, entitled "Science of Human Development for Restructuring the 'Gap-Widening Society,'" at Ochanomizu University in Tokyo, Japan. As an effort to understand patterns vis-à-vis academic abilities, aspirations, and career choices (i.e., the acquisition of academic qualifications or jobs) in relation to family background (i.e., social class) better, the following were implemented: (1) an academic ability survey (Japanese and mathematics) and a questionnaire survey of students from the third to the 12th grade, (2) a survey of students' parents and guardians, and (3) a survey of supervisory teachers. The survey areas were named "Area X" and "Area Y." Area X is a medium-sized city near a large city in the Kanto region, and it has a population of approximately 250,000. Area Y is a small-sized city in the Tohoku region, and it has a population of approximately 90,000.

4. Data and Questionnaire Items

(1) Sample

This paper analyzes data from ninth-grade students in Area X in 2009, using the dataset of the ninth-grade junior high school students and their parents captured in JELS2009. (JELS2009 constitutes the third-wave JELS surveys.) Area X is a city with a population of about 250,000 people, in the Kanto area.

This investigation closely examines 386 cases of junior high school students and their parents or guardians¹.

(2) Measurement and Variables

a. Educational Aspirations

The questionnaire form addresses students' educational aspirations. The index of educational aspiration is generated by answers to the following question: "What is the highest educational degree or level that you hope to achieve?" In logistic regression analysis, educational aspiration is converted to "a hope to go to universities or not."

b. Social Stratification

JELS engages not only junior high school students, but also their parents or guardians. The questionnaire executed by parents and guardians asks about household income—a metric which, in this paper, is used as an

index of social stratification among junior high school students.

Household income figures were converted into scores as follows: under 200 million yen = 1.0; 200–300 million yen = 2.5; 300–400 million yen = 3.5; 400–500 million yen = 4.5; 500–600 million yen = 5.5; 600–700 million yen = 6.5; 700–800 million yen = 7.5; 800–900 million yen = 8.5; 900–1,000 million yen = 9.5; 1,000–1,200 million yen = 11.0; 1,200–1,500 million yen = 13.5; and over 1,500 million yen = 15.0.

c. Academic Achievement

In Japan, surveys on academic achievement are rarely conducted in order to ensure privacy of the students (Mimizuka 2007). However, JELS researches Japanese and mathematics achievement among students. This paper uses the results of the mathematics achievement testing as a proxy for academic achievement².

d. Preferred Tracks

As noted, Japanese tracks relate to the high school system's hierarchical structure. This study therefore creates three categories of preferred tracks, into which junior high students can enter as they attend high school.

The questionnaire asked, "What kind of high schools do you want to go?" Answers were converted as follows: (1) high schools for going to university = academic track, (2) high schools for learning general subjects = general track, and (3) high school for job = vocational track. Any other answer was considered a missing value. Table 1 provides the descriptive statistics of these variables.

5. Results

First, the association between educational aspiration and preferred tracking was examined.

In Table 2, in the academic track, 92 percent of the students hope to go to university. On the other hand, in the vocational track, only 20 percent of students want to go to university. This finding indicates that junior high school students' preferences vis-à-vis tracking relate to their educational aspirations.

Next, determinant factors were examined, which apparently affect students' educational aspirations. The results of this examination are shown in Table 3: the academic track dummy variable was the strongest factor in indicating a hope to go to university. On the other hand, the vocational track dummy variable had a negative effect with regard to indicating a hope to go to university.

Household income, as a social stratification index, was not found to be a significant determinant of tracking: Japanese junior high school students' educational aspirations were found to be determined by their tracking, rather than by social stratification.

As a final analysis, those students who wanted to go

Table 1. Statistics Regarding Descriptive Variables

Junior High School Students (N = 386)	Gender	Female	54.1%
		Male	45.9%
	Educational Aspiration	Junior or Senior High School	19.1%
		Junior College or Technical College	17.5%
		University and Higher	63.3%
	Preferred Tracks	Academic track	34.3%
		General track	51.3%
		Vocational track	14.4%
	Achievement	Math Achievement (Average)	66.2
		S.D.	23.2
Parents (N = 386)	Social Stratification	Household Income Average (Million yen)	7.3
		S.D.	3.2

(JELS2009)

Table 2. Educational Aspiration by Preferred Track

		Preferred Track		
		Academic track	General track	Vocational track
Educational Aspiration	Junior or Senior High School	1.7	18.1	52.0
	Junior College or Technical College	5.9	22.2	28.0
	University and Higher	92.4	59.6	20.0
Total		100.0	100.0	100.0
N		119	171	50

(JELS2009)

Table 3. Logistic Regression on Students' Educational Aspirations

	B	Exp (B)
Gender	1.450 ***	4.264
Household income	0.063	1.065
Academic track dummy	1.469 ***	4.347
Vocational track dummy	- 1.710 ***	0.181
Math achievement	0.042 ***	1.043
Intercept	- 3.151 ***	0.043
Chi square	146.327 ***	
d.f.	5	
- 2 log likelihood	263.688	
Cox & Snell squared R	0.366	
Nagelkerke square R	0.508	
N	321	

***p<.001 **p<.01 *p<.05

Note

Gender dummy (Male = 1)

Academic & Vocational track dummy (reference = general track)

Household income: annual income of entire family

(JELS2009)

into vocational tracking were more closely examined. Table 4 provides the results of logistic regression analysis regarding the vocational track. The independent variable was converted as follows: when the preferred track was

a vocational track = 1; else, track = 0.

Table 4 shows that the strongest factor determining vocational tracking was math achievement. The results suggest that tracking distribution is meritocratic;

however, household income—as an index of social stratification—was found to have a significant effect. This makes sense, given that students' academic achievements are often determined by their family background

(Mimizuka 2007). As a result, the preferred tracks of junior high school students are determined by social stratification, via their academic performance.

Table 4. Logistic Regression on Vocational Track

	B	Exp (B)
Gender	-0.161	0.851
Household income	-0.172 **	0.842
Math achivement	-0.037 ***	0.963
Intercept	1.693 **	5.437
Chi square	44.898 ***	
d.f.	3	
-2 log likelihood	224.340	
Cox & Snell squared R	0.128	
Nagelkerke square R	0.229	
N	327	

***p<.001 **p<.01 *p<.05

Note

Gender dummy (Male = 1)

Household income : annual income of entire family

(JELS2009)

6. Conclusion

This study generated the following three findings.

First, junior high school students “warm up” or “cool off” their educational aspirations through their preferred tracks; this means that modern Japanese high schools are able to affect junior high school students' educational aspirations by instigating a so-called “pre-entry effect” (Kamens 1981). Recently, however, some junior high school students have voiced a preference for entering vocational tracks, with the hope of going to university or college later.

Second, junior high school students' educational aspirations are determined by their preferred tracks, rather than by their social class or academic achievements. It seems that the Japanese high school system “equalizes” all students' educational aspirations. Third, however, the students who prefer to enter vocational tracks tend to be those from lower socio-economic classes.

Originally, Rosenbaum (1976) suggested that tracking was tantamount to “making inequality.” He found that ethnicity and social class did correlate with tracking. In the 1970s and 1980s, some Japanese studies (e.g., Ushioji et al. 1978, Hata 1980) found a connection between social class and the Japanese high school hierarchy; they found that, in many cases, Japanese junior high school students were allocated to high schools by social class, by way of their academic achievements. The current study found that the Japanese tracking system does still exist.

New issues have now appeared. The rate of advancement to universities in Japan has risen, and some researchers say that Japanese tracking has changed (Mimizuka 2000, Nakamura 2006); nevertheless, tracking and social stratification still correlate. Future studies into tracking and social stratification in Japan need to be done, given the implication that a non-meritocratic distribution to the various tracks within the system may mean that the Japanese educational system is generating inequalities.

Notes

1. The analysis disregarded “no answers” and “non-fit answers.”
2. Details of the academic achievement research methods are provided in the JELS reports (Ochanomizu University 2004–2010).

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