

## **The Function and Current Issues of Graduate Schools in Japan**

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## The Function and Current Issues of Graduate Schools in Japan

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Despite occupying only small resources of higher education, graduate education has made a significant contribution to the development of human culture and science-technology. Its role is recognized as more important in the age of international cooperation and competition. The Ministry of Education, faculties of both public and private sectors, and others involved in higher education have begun to pay attention to the current situation and the future development of graduate education. This paper focuses upon the functions and problems of graduate education in Japan; the first part of the paper, written by Maruyama, points out the current problems of graduate education in Japan and summarizes the reform plans of the graduate school by the Ministry of Education. The latter part, written by Miura, examines the functions of graduate school, focusing on engineering and especially on social sciences with empirical data.

### 1. Four Major Problems in Graduate Education

One characteristic of Japanese graduate schools is their small student population. The total number of graduate student enrolled in master's and doctoral programs in 1989 was 85,263. This figure can be judged small relative to the undergraduate student population in comparison with the ratio of other foreign countries. The ratio of graduate students to undergraduates is only 4.0% in Japan, compared to 14.5% in the United States (1.4 million graduate students), 17.8% in Britain (46,000 graduate students), and 20.2% in France (135,000 graduate students). Additionally the number of graduate students per one thousand is 0.6 in Japan, 0.8 in Britain, 2.5 in France and 6.0 in the U. S. This figure places Japan last amongst the four developed countries.

The major problems and issues of graduate school appear to stem from this small population of graduate students. According to the Ministry of Education, these problems in Japanese graduate education can be summarized into the following four points.

#### 1) Vacancies in Admission Quota

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Each graduate school has its own registered capacity for enrollment which is inspected by the Ministry of Education. This is called an admission quota. Along with the admission quota, each school must clear the minimum standard concerning the qualifications and number of faculty members, educational facilities and equipment, and miscellaneous educational conditions. However graduate schools do not necessarily accept students fully up to the admission quota. The average ratio of the actual enrollment to the admission quota is 0.81 in the master's program and 0.55 in the doctoral for 1986. Thus, through calculation, there appear to be 20% vacancies in the master's and about half in the doctoral quota. From point of view of efficiency, there is a lot of wasted or unused educational facilities and manpower.

## 2) Inadequate Educational Activity

There are some institutions where graduate education and research are not functioning well. In the field of the humanities and social sciences, the admission quota of each school is insufficiently filled. The ratio of actual enrollment to the quota in the master's program is 0.61 in the humanities and 0.36 in social sciences. It is the private institutions that are more likely to have graduate programs in such fields. Because there are so few graduate students, it is frequently pointed out that the educational activities are rather limited in these graduate schools. The curriculum is rather arbitrarily made, with course content and sequence not well-examined in these fields. Even though the course content is organized and specified, it is not necessarily taught in graduate school where there are an insufficient number of graduate students. In particular, in the field of the humanities and social sciences, Japanese academics traditionally regard themselves as "self-made" rather than "trained systematically" in the institutions. This does not mean the relationship between the advising faculty and graduate students is weak, though. The educational activities at graduate level are often regarded as individual activities or "apprenticeship" rather than systematic or institutional activities.

## 3) Inadequate Number of Degrees Conferred

Only 98 doctoral degrees in the humanities and 167 in social science were conferred in 1988 while the total number of all doctoral degree awarded was 9,602. The others were mainly in natural sciences, engineering, medical sciences, and so on. The degrees in the humanities and social sciences were mainly earned as so-called "ronbun-hakase", meaning the degrees awarded solely on the criteria of dissertation. The applicant need not finish course work or even enroll in a program. There are not many degree earners who can complete their dissertation within five years of course work. This means that graduate education is not functioning well in the humanities and social science. So the question is that, are doctoral courses necessary in such fields?

## 4) Limited Job Opportunities for Graduate Students

The scarcity of job opportunities for doctoral students has been a crucial issue in post-war

Japan. According to the latest statistics, of 5,576 students who finished their doctoral program in 1989, 1,330 (23.8%) could not be placed. The employment opportunity is relatively better for master's graduates. Only 8.9% of them could not find jobs, the others being placed or having gone on to a doctoral program.

Small enrollment, lack of emphasis on educational activities, strict requirements for degree conferment, and poor job prospects are related to each other and form a vicious cycle. These problems stem from the same cause, that is, there is only a weak demand for graduate students. Thus the problem seems not serious where the demand for graduate students is stronger. The engineering graduate schools are an example of perhaps the only successful case in Japan. In the fields of engineering and agriculture, the demand for students in master's program increased in the 1970's and 80's as the Japanese economy has expanded and the demand for professional and technical workers has magnified. The manufacturing and computer related industries have employed a large number of master's graduates. Most students with master's degree are engaged in professional and technical jobs. Because of better employment, the shortage of manpower has been reflected in the increase of wage of such workers, and consequently more and more undergraduate students are going to graduate school. Thus, in engineering, actual enrollment exceeds the admission quota, which is very rare in the Japanese graduate schools. In this field, the vicious cycle has ceased.

A graduate school is expected to accomplish three functions. The first is training for teaching staff in higher education. The second is training for potential researchers at research institutes, research and development sections in industries, and research centers of central and local governments. The third is training for various professions other than researchers. While these three functions are achieved in engineering and agriculture, only the first is accomplished in the humanities and social sciences. Thus, the success of graduate education seems to depend on whether there is sufficient manpower demand other than academics.

## 2. Motivation for Offering Graduate Programs

The expected role of graduate education is training those who can continue and develop the current scientific activities and also reproduce and promote the human culture. Besides the ideal role of graduate education, each institution has its own reason to offer a graduate program. To Japanese private institutions, having a graduate program is regarded as more prestigious. Thus private institutions are strongly motivated to open a graduate program if they desire upward mobility in higher education hierarchy. Because the inspection on establishment of graduate schools by the Ministry of Education is not as severe as that of undergraduate colleges and universities, about half of all private universities (174 out of 334

universities) open a graduate program.

However, there are less job opportunities for graduates of private institutions, especially for those graduating from less prestigious institutions. Such institutions have difficulty in attracting students. Thus, the admission quota is not filled. Professor Ushiogi at Nagoya University called this phenomenon “an empty showcase”. Therefore graduate program as a status of excellence is not functioning in activity. To run a graduate school requires better financial support. In most cases, graduate schools do not pay off because of a lack of students. They have to acquire other financial backing outside the institution. Although the private sector of higher education has demanded increased financial support from the government to improve the quality of graduate education, the government subsidies to private institutions have not increased within the past ten years.

One solution to the dilemma between strong motivation for the establishment of graduate schools and the scarcity of ample financial backing is the collaboration of private universities in making one graduate school over several institutions. This new idea is under consideration and is yet to be realized.

Compared to the private institutions, there appears to be not a serious problem in national institutions. If any, it is financial. The Ministry of Education has restrained the expansion of graduate education through refusing to increase the graduate educational budget in national institutions. To faculty members, the existing budget is insufficient. Many of them often express complaint in that on-going research cannot be continued with such poor research facilities and equipment, meagre budget, and inadequate manpower, and consequently, that university research falls far behind that of industries.

The master's program in engineering is evaluated as the only successful case of graduate education from the view of training and selection. However, because of the budget, one of the critique that can be made despite of its success, is that basic science is not developed in Japan relative to applied science. To summarize the issues in graduate school, one can point out that 1) Education rather than research is the crucial issue. 2) The problems in the humanities and social sciences are more serious than in natural science, engineering, and medical sciences. 3) The private institutions have more difficulty than national. These problems are dependent upon employment conditions other than in the academic professions.

### 3. Reform Plans of The Ministry of Education

The Ministry of Education is often accused of not emphasizing the importance of graduate education nor allocating enough of its budget to the graduate schools. However, it seems to have begun to recognize the potential role of graduate education in contributing to the promo-

tion of science and culture. The second report of the Ad hoc Council on Education of April 23rd, 1986 pointed out that the reform of graduate education was an urgent task to be achieved in higher education. After that report, the Ministry of Education established the Committee for University Reform, which proposed a reform of graduate education. The major tasks examined were as follows.

- 1) Improve the quality of graduate education
  - a. Re-examine the organization and the structures of graduate education and make a flexible system of entrance qualification and length of course work.
  - b. Make graduate schools more responsible to the needs of advance science and thechnology and inter-disciplinary areas.
  - c. Re-examine the faculty organization and replenish educational facilities and equipment.
- 2) Active graduate education
  - a. Re-define the part-time student and expand scholarship and fellowship programs
  - b. Exchange graduate students between national, other public and private institutions and promote cooperation in research and education among the various institutions
  - c. Re-examine the definition of degrees
  - d. Examine the allowance of establishment of graduate school, along with accreditation and institutional evaluation after its establishment
- 3) Strengthen the relationship with the local community
  - a. Examine the structure to accept more part-time students
  - b. Make an endowment chair system
  - c. Loosen the qualification for faculty in graduate schools
- 4) Promote internationalization
  - a. Develop a system to accept more foreign students; promote education of Japanese language and its culture; re-examine degree system, scholarships for foreign students, and housing system.
  - b. Examine the academic term period in order to exchange graduate students more efficiently.

The Committee for University Reform was followed by the University Council established in 1987 and the Sub-Committee for Graduate Education was formed as its first sub-committee in 1988. The University Council made several reports and they basically followed the content and direction of graduate education reform made by the Committee for University Reform. So far the quality rather than the quantity of graduate education has been emphasized and most of the discussion was made regarding this aspect. Despite this, the Sub-Committee for Graduate Education reported in July in 1991 that the enrolment of graduate school should be doubled by

the year 2000.

These reform plans and expansion of graduate education, however, lack financial backing. It will be hard to resolve the dilemma between improving the quality and expanding the enrollment of graduate schools under the age of scarce resources in higher education.

#### 4. Establishment of a New System of Graduate Schools and the Change in Function

Japanese graduate schools were founded in the year of 1886 with the establishment of the Imperial University, a quarter of a century behind the first conferment of an American Ph. D.. This Ph. D. was granted at Yale, which opened up the first graduate course at the doctoral level, raising, to some extent, the position of graduate education (Roger L. Geiger, 1986), and it was only twelve years after the foundation of the first distinguished research university of Johns Hopkins. Such a system of graduate courses or schools existed only in the United States at the time, therefore, the Japanese graduate schools have been considered to be modeled upon them (S. Nakayama, 1989). Although the purpose of graduate education in Japan was declared in the Imperial University Constitution, “to make profound research in science and arts to meet the urgent needs of the nation”, they had no well-developed structure of their own nor could they sufficiently function as a research and training institution. Many of the professors at Imperial Universities in those days did not receive education at graduate schools and also many of them were recruited from social sectors, especially before 1912 (K. Iwata, 1984). In this sense, graduate schools could not acquire the position as a source of new staff in the academic labour market. Indeed, there were quite a few in opposition against the establishment and skepticism about the role of graduate schools since universities were regarded to function as the very institutions for research (K. Ohsawa, 1902, J. Sakurai, 1938). Furthermore, doctoral degrees were rarely conferred to those who completed the whole courses of graduate schools and passed the examination. Before the year 1898, under the oldest system of the Act of Academic Degrees by the Imperial Ordinance (No. 13), doctorates were awarded mostly to those who were nominated by the Faculty Conference with no institutional relationship to the graduate school, between the year 1899 and 1920. Under the second oldest act of academic degrees (No. 344), more than a half of the degrees were conferred through the examination of dissertation to doctoral candidates who did not attend graduate schools. Furthermore, between 1921 and 1945, under the following act (No. 200), the number of the doctorates allotted to those who completed both the course requirements and their dissertations formed only 13% of all of the doctorates (H. Satoh, 1992). Doctorates were offered mainly to professors before 1910 and to associate professors afterwards, which indicates that they did not take firm



root as a credit of professional competence in entering the community of academicians (K. Iwata, 1992). Thus, during prewar Japan, graduate schools did not develop and could not declare the position as a research and training institution. This inadequacy in structure was criticized pointblank in the 'Report to the American Academy of Science' (August 28, 1947), and the American Scientific Mission strongly urged that graduate schools in Japan should be reformed (S. Nakayama, 1989, Gary, H. Tsuchimochi, 1991).

In 1950, graduate schools were reorganized under the Post-War educational reform in Japan, with a two-year masters course or a five-year master and doctoral course. The concept of graduate education was 'to cultivate profound learning and research ability' at the master level and 'to make a contribution to the progress of science and arts by original research and to train the ability to lead high levels of scientific research' at the doctoral level. Thus, graduate schools were re-established as institutions for scientific research and training for future academic staff and researchers, so as to catch up with scientific trends in the world. They were, however, small in size in their early stages. The number of graduate schools was only 14, and the number of the students was 189 in 1950, when the first master courses of the humanities and social sciences were opened up at four private universities. These numbers increased with the establishment of graduate courses at the national and the municipal universities in 1953. The total number of the graduate schools was 151 and the number of graduate students was 5,814. Since 1953, graduate schools have been steadily expanding both in the number of institutions and of students. Now in 1990, the population of graduate students is 90,238, about fifteen times larger, while that for college students is about four times larger than in 1953. However, such notable graduate growth has been presenting a challenge to the traditional ideology of graduate education, especially at the master's course level. The concept of master course education was revised in 1974, with a new purpose of training non-university professionals or specialists in addition to the one already existing. Behind this was a great demand for highly qualified manpower from the industrial world with rapid economic growth, and, in response to this, there was a great supply of master graduates with a high level of skills and knowledge induced into the labour market. Thus, gradually assuming another aspect of producing high level professionals and technical workers, master courses have come to fulfil a new function as a '*professional school*'.

## 5. Distinction in the function of Graduate Schools amongst Disciplines

However, there has not been such rapid growth nor change in the function of master's education in all fields of study. In 1953, when the predominant ideal of graduate school education was still training future academic staff and researchers, the population of masters students

was 5,409, two thirds in the humanities and social sciences, the rest in the natural sciences. Now, in 1990, masters students in the natural sciences are three times more than those in the humanities and social sciences. Thus, there has been a great difference in the growth of student population amongst fields of study for thirty seven years since 1953. The most rapid expansion can be seen in engineering, the figure representing a 30 time increase in student population during the period, whereas in the social sciences, the number of the students has only tripled. As is shown in Figure 1, percentage distribution reveals a steady increase in the natural sciences (from 29.9% to 62.9%) with the most rapid growth for engineering (from

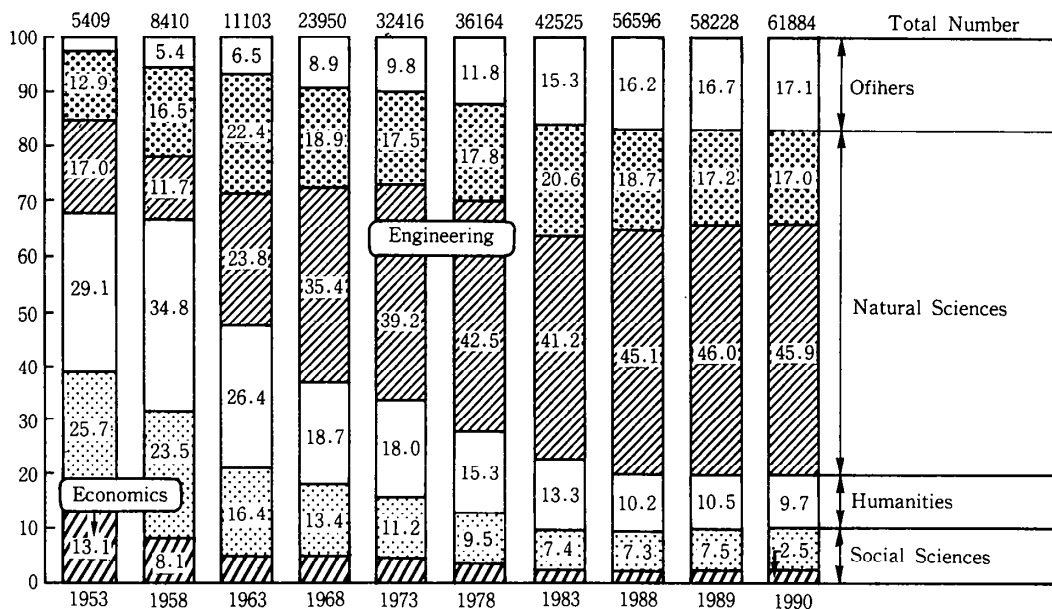


Fig. 1 Trend in Percentage Distribution of Masters Students by the Fields of Study

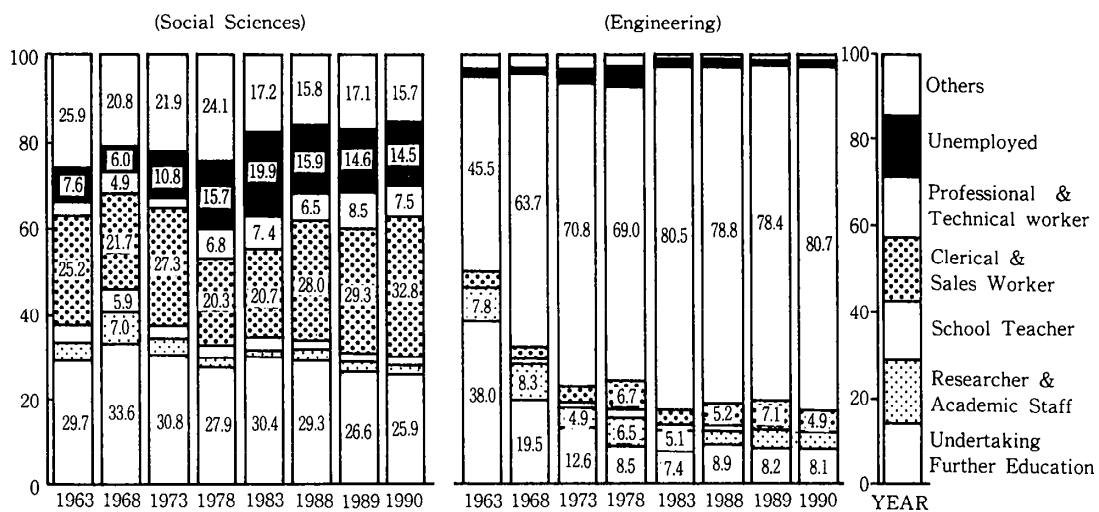


Fig. 2 Trend in Percentage Distribution of Masters Graduates by Employment Status

17.0% to 45.9%), and a slow decrease in the social sciences (from 38.8% to 17.0%) with a conspicuous diminution for economics (from 13.1% to 2.5%). The reason why there has been such a difference in the growth of student population between these disciplines can be explained as follows.

In engineering, the majority of masters graduates have found jobs in private enterprises as engineers (see Figure 2). This trend can be seen since the first half of the 1960's, behind which there has been a great demand for highly talented manpower of the industrial world along with the remarkable economic growth. With such employment security for the masters graduates, many applicants, for the most part without intending to become academic staff nor researchers, have rushed to enter master's courses, and graduate schools have come to admit many of such applicants. Incidentally, about double of the admission-quota have applied for admission to master's courses and about 70% of them have been admitted since the latter half of the 1980's. Consequently, the ratio of the admitted per admission-quota has been quite higher than any other field. It was above 85% already in 1963, and it reached 132% in 1990 (see Table 1). Thus, master's courses in engineering with much more students have produced a greater number of engineers relative to those who go on to the doctoral level with full intention to become researchers and academic staff. They seem to function mainly as training institutions, supplying highly qualified engineers to industry, and in this sense, they can be called *professional schools* rather than *graduate schools*.

In the social sciences including economics, however, the traditional concept remains that the main function of graduate schools is to train future academics and researchers. The high percentage of those advancing to doctoral courses show strong intention of masters graduates to become academics or researchers, although there are a few who are lucky enough to find

Table 1 Trend in the Ratio of the Admitted per the Admission-Quota and per the Applicants at Master's Course since 1958

Year	The Admitted/Admission-Quota			The Admitted/Applicants		
	Engineering	Social Sciences	Economics	Engineering	Social Sciences	Economics
1958	0.43	0.39	0.27	0.61	0.50	0.49
1963	0.87	0.37	0.28	0.30	0.56	0.54
1968	0.87	0.44	0.38	0.59	0.39	0.39
1973	0.85	0.42	0.38	0.47	0.26	0.23
1978	0.86	0.35	0.29	0.52	0.27	0.23
1983	0.90	0.33	0.24	0.68	0.31	0.29
1988	1.26	0.41	0.35	0.71	0.33	0.34
1989	1.26	0.42	0.37	0.72	0.31	0.33
1990	1.32	0.45	0.41	0.72	0.30	0.31

SOURCE: Basic Survey Report of School. Ministry of Education  
A List of University in Japan. Ministry of Education

academic teaching or research position immediately after their graduation. The 'Unemployed' graduates, for the most part, are not those who fail to find employment in the non-academic job market, but those who go abroad for further study or work as part-time lecturers with aspirations to get full-time academic staff positions sooner or later. Moreover, most of the 'Others' are considered to be waiting for another chance to be admitted to a doctoral course. There are also a few graduates working as 'School teachers', who, perhaps with no aim to become teachers from the start, may have to change their course because of the limited chance of entering the academic labour market, or a lack of financial support to continue their study or research. Thus, at least about 70% of masters students may be considered to have academic career aspiration from the beginning. However, there are more graduates employed as 'Clerical & Sales workers' than those going on to doctoral courses. In engineering, masters graduates in the private enterprises are assured of better income than college graduates, whereas in the social sciences, graduates employed in such enterprises are not necessarily guaranteed more benefits, at least with respect to starting salary. There are few positions provided that commensurate to such high level of skills and knowledge as acquired at the masters level in Japanese firms and industries, and they are, in general, reluctant to employ masters graduates on grounds that they are "over-educated" for simple business activities or as not being so practical a work force (M. Miura, and F. Maruyama, 1989). Nevertheless, about one third of the graduates have been employed merely in clerical and sales positions. Some of them may be forced to alter their courses as is often the case with graduates engaged as 'School teachers'. However, there may be others without such strong academic orientation in entering graduate schools, these having merely a preference for enjoying "moratorium status", which postpones their decision making of occupational choices. On the other hand, masters courses in the social sciences have produced only a small number of 'Professional & Technical' workers compared to engineering. They are engaged in legal affairs as judge, lawyer, or certified public accountant or they are engaged in social welfare services, although holding a master's degree is not an essential condition for employment in these positions.

In response to such few opportunities for employment faced by masters graduates, or, if any, to the scarce availability of positions in which they can make full use of their abilities, graduate schools in the social sciences do not admit applicants with a business or professional orientation. Furthermore, graduate schools in these fields would admit a minimum number of applicants with full academic orientation, for the academic job market has been in a grave situation, with the number of available positions not increasing relative to the growth of the graduate population. Therefore, only about 30% of candidates have been admitted to graduate schools in social sciences, and consequently, the ratios of the admitted/admission-quota at the master's level have been lower, especially since the 1960's, than in engineering. In economics,

above all, these ratios have been far lower (see also Table 1).

## 6. Diversity in Functions of Graduate School in Social Sciences

This is a mere description of graduate schools in social sciences as a whole. There can be seen much difference in the purpose and function of the master's course amongst graduate school.

First, it should be noted that there are some graduate schools which can be seen to function as a *preparatory school* where most of the masters students are preparing for the licensed tax accountant examination. According to the regulations of the licensed accountant examination, there are five examination subjects, two for accounting and three for tax laws. Graduates majoring in commercial science and economics at the master's level are exempt from the two accounting examinations. Many students prefer to enjoy such privileges, while making a thoroughly preparing for the examination. This is particularly illustrative of small private graduate schools with a short tradition, where more applicants have been admitted than the admission-quota. Thus, there are some graduate schools where the students outnumber the admission-quota, even in economics.

Secondly, it can be noted that not all of the other graduate schools have been steadily functioning as training schools for future academic staff. Graduate schools legitimately performing such a function are restricted to a certain number of schools. For instance, of all academic staff with master's, doctoral, or Ph. D. degrees in economics, nearly 60% are from only ten graduate schools, and above three fourths are from 18 graduate schools, accounting for only 23% of all 79 graduate schools in economics. Seven of these eighteen are the graduate schools of former Imperial Universities, two are of former Commercial Colleges, and the rest are of private universities with long tradition and fame (see Table 2). The graduates from these ten or eighteen schools get positions not only at the universities of their alma mater but also at the other colleges and universities. On the other hand, the graduates from the other graduate schools can find their positions as academic staff only at their alma mater at best. In short, the graduates from those ten or eighteen graduate schools have more opportunities to pursue a university career than those from other schools. In this sense, the academic job market is an oligopoly, and these schools can be regarded to be prestigious as the very *graduate schools*. To illustrate further, about 70% (22/30) of those completing the doctoral courses between the year 1983 and 1989, at a former commercial college, found employment as academic staff.

In these prestigious graduate schools, most of masters graduates advance to the doctoral level with strong academic aspiration. On the other hand, from the other three fourths of

Table 2 Percentage Distribution of Academic Staffs with Doctoral, Master's, or Ph. D. degrees of Economics by their Alma Mater (in 1989)

<i>Alma Mater</i>	<i>%</i>	<i>Establishing</i>	<i>body</i>	<i>year</i>
1. <i>The University of Tokyo</i>	11.7	National	(F. I.)	1953
2. <i>Kyoto Univ.</i>	8.1	National	(F. I.)	1953
3. <i>Hitotsubashi Univ.</i>	7.3	National	(F. C.)	1953
4. <i>Kobe Univ.</i>	6.8	National	(F. C.)	1953
5. <i>Kyushu Univ.</i>	6.0	National	(F. I.)	1953
6. <i>Keio Univ.</i>	5.5	Private		1951
7. <i>Waseda Univ.</i>	3.7	Private		1951
8. <i>Tohoku Univ.</i>	3.6	National	(F. I.)	1953
8. <i>Osaka City Univ.</i>	3.6	Municipal	(F. C.)	1953
10. <i>Osaka Univ.</i>	3.3	National	(F. I.)	1953
11. <i>Nagoya Univ.</i>	3.2	National	(F. I.)	1953
12. <i>Hokkaido Univ.</i>	2.4	National	(F. I.)	1953
12. <i>Meiji Univ.</i>	2.4	Private		1952
14. <i>Chuo Univ.</i>	2.3	Private		1951
15. <i>Kansei Gakuin Univ.</i>	1.9	Private		1950
16. <i>Nippon Univ.</i>	1.9	Private		1951
17. <i>Doshisha Univ.</i>	1.9	Private		1950
18. <i>Rikkyo Univ.</i>	1.7	Private		1951
<i>(reference) accumulation of 10 universities 59.6%</i>				
<i>accumulation of 18 universities 77.2%</i>				

NOTE: F. I. is the Former Imperial University, and F. C. is the Former Commerce College

SOURCE: Kojun-sha: A list of University Staffs in Japan 1990  
(*Zenkoku Daigaku Shokuin-Roku*)

graduate schools, only one third of the graduates go on to the doctoral course. Moreover, there are very few graduates advancing into a doctoral course at those graduate regarded as professional (or preparatory) schools for legal affairs. Thus, the students with an academic orientation are concentrated in the prestigious universities. In fact, the 18 prestigious graduate schools have an 80% share of all the doctoral course students, and consequently, their ratio of the admitted per admission-quota is much higher than the other schools (see Table 3).

Finally, it must be noted that there can be seen new establishment and gradual expansion of *professional schools* in the social sciences, though the number of professionals produced are still small. For example, the business management and administration course at Keio University, the first professional school (business school) established in Japan, has exerted a positive policy for receiving students from the industrial world as well as the college. More students have been admitted to this course than the admission-quota, and consequently, the ratio of the

Table 3 Comparison of the Ratios of the admitted/admission-quota at master's and doctoral courses between the graduate schools of the prestigious universities and others in 1989

Graduate Schools of	The Admitted/ Admission-Quota		The Enrolment to Doctoral course per the Enrolment to Master's course
	Master's course	Doctoral course	
	% <sup>A)</sup>	%	%
<i>Prestigious Universities</i>			
Top 10	29.8	63.8	90.3
Top 18	30.5	66.9	79.3
Other Universities	46.1	28.9	35.5
<i>(reference)</i>			
Univ. with ratio above 100% <sup>A)</sup>	113.8	27.1	7.6

NOTE: Total number of the master's course is seventy nine, and doctoral course fifty five. And the number of the master's course where the ratio<sup>A)</sup> is above 100% is seven, and five of them are with doctoral courses.

SOURCE: Association for the Standard of University (juridical foundation): 'A List of Universities of Japan in 1989'

(Zaidan Hojin Daigaku Kijun Kyokai: 'Daigaku Ichiran' published in (1989)

admitted per admission-quota constantly exceeded 100%. A new trend has come to be seen, at long last, of producing high-talented individuals, with the rapid establishment of new types of master courses: the international administrative study course at International University of Japan (1989), business administration and information study course at Nagoya University of Commerce and Business Administration (1990), the international study of development course at Nagoya University (1991), and law and politics course at The University Tokyo (1991). In these courses, the purpose of education is clearly declared to train *professionals*. Thus, there can be seen a diversity of function of graduate schools among each university. To summarize,

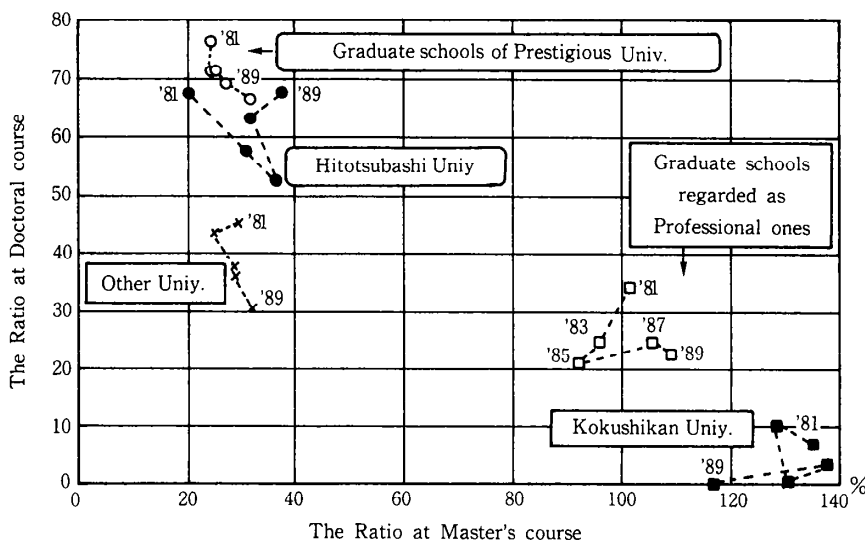


Fig. 3 Trend in the Ratios of The Admitted per Admission-Quota

in the graduate schools of prestigious universities, applicants are strictly selected for admission into a master's course because of the limited academic labour market, but most of them with academic aspirations advance to the doctoral course. Consequently, the ratio of the admitted per admission-quota is quite low at the master's level but quite high at the doctoral level. In some small non-prestigious graduate schools with a short tradition, many applicants with professional orientation are often admitted and most of them are employed as professional workers after graduation with a master's degree, so the ratio is quite high at the master's level and quite low at the doctoral level. Elsewhere, there is not so strict a limit for admission into a master's course relative to the prestigious graduate schools, and the applicant's aspirations may not be necessarily academic. Here, again, there are not so many graduates going on to doctoral course because the academic job market is relatively restricted to their alma mater. The ratio is a little higher at master's course and relatively lower at doctoral course than in the prestigious schools (see Figure 3).

## 7. Tasks and Suggestion

As was stated previously, the master's program in engineering is evaluated as the sole case of success in graduate education, especially for the training of various professions needed in the industrial world of advanced science and technology. However, the quality of research and training in graduate engineering courses, which notably have expanded more rapidly and have received more students than any other graduate courses, has been criticized as being still in a developing stage (S. Kobayashi, 1989, K. Arai, 1989). Such problems remain unsolved as the exhaustion of research equipment without replacement, the small workshop relative to the number of researchers, as well as the modest research budget set out for universities are yet to be reformed. Given such poor conditions for research and for training, with the exceedingly high ratio of teacher to student, the quality of education on an advanced level should not be adequate. Therefore, it is urgent for engineering graduate education to improve such present conditions for teaching and learning at individual universities. Although master courses in engineering have come to receive a large number of students, most of them have gathered in a few prestigious graduate courses of the so-called 'elite universities'. These popular schools have all of the three functions of training for academics, for researchers and for professions. In other words, functions of graduate education are only achieved in these schools. Therefore, there are a certain number of master's courses just regarded as an 'empty showcase'. Much effort should be required to improve conditions for research and training in such graduate schools. These efforts, with those of prestigious graduate schools, will enlarge the base supporting scientific research and training.



On the other hand, in the social sciences, with no concentration of functions on a few institutions seen as for engineering, there are a variety of schools exerting different functions. Compared to engineering, there are few empty showcases in the social sciences. However, considering the increasingly grim of the academic job market, with rapid decrease in student population predicted, it may be only the professional schools that can be expected to expand in the future. There will be a greater demand for professional schools to accept more students from the business world, and greater needs to receive more part-time students in the lifelong learning society. From the viewpoint of maintaining and developing the standard of research, however, the role of training for researchers on an advanced level must be emphasized, especially for the social sciences. It is true that the policy of each graduate school for receiving students has reflected the employment situation of graduates, but it is necessary for graduate schools not to restrict the admission of applicants within narrow limits on the ground of little opportunities for employment, especially in the academic labour market. These schools must accept a certain number of promising students to train for excellent researchers. For this, it is also necessary that more research institutions be established or more researcher positions be set up, not only in the social sciences but also in engineering.

## REFERENCE

- Iwata, Kozo, "Teikoku-Daigaku no Recruit-gen (The pattern of recruitment of Japanese imperial universities professors)", in *Bulletin of the Schools of Education, Nagoya University (Dept. of Education)*, No. 31, 1984
- , "Senzen-ki ni okeru Gakui no seikaku — Teidai-kyoju ni itaru Kyaria-jo no ichi-zuke" (The Doctoral Degree in the Academic Career of Japanese Imperial University), in *Daigaku Kenkyu (University Studies)*, No. 9, Research Center of University Studies, University of Tsukuba, 1992 (forthcoming)
- Satoh, Hiroshi, "Wagakuni Senzen no gakui seido no hensen ni tomonau gakui juyo jokyo no henka (A Study of Doctoral Degrees awarded during the pre-war Japan: the Change in the Status and Pattern of Degree Conferment)", in *Bulletin of the Schools of Education, Nagoya University (Dept. of Education)*, No. 38, 1992 (forthcoming)
- Tsuchimochi, Gary H., "Beikoku gakujutsu komon-dan hokokusho to sengo Nihon no koto kyoiku kaikaku-an(The Report of the U. S. Scientific Advisory Group and Postwar Japanese Higher Education Reform)", in *Daigaku Ronshu (Research in Higher Education)*, Research Institution for Higher Education, Hiroshima University, No. 20, 1991
- Ohsawa, Kenji, "Toei Chugo (an autobiographical essay)", published serially in the '*Ikai Jiho (a journal of medical world)*', Vol. 429-464, 1920

Sakurai, Johji, *Nihon ni okeru Gakujyutu no Hattatsu (The Development of Arts and Science in Japan)*, 1938

Nakayama, Shigeru “Independence and choice: Western impacts on Japanese higher education”, in *From Dependence to Autonomy: The Development of Asian Universities*, (eds.) Philip G. Altbach and Viswanathan Selevratnam, Kluwer Academic Publishers, 1989

Geiger, Roger, L., *To Advance Knowledge: The Growth of American Research Universities 1900-1940*, Oxford University Press, 1986

Makoto, Miura, and Fumihiro, Maruyama, “Research Organization and Training of Advanced Students in Japan”, (Chapter 3: A study of Graduate School and Research: Economics), in *Bulletin of the Schools of Education, Nagoya University (Dept. of Education)*, No. 36, 1989

Katsuhiro, Arai, “Kagaku-gijutsu no shin-dankai to daigakuin kyoiku (A study of Graduate Engineering Courses at University Reflecting the New Development of Science and Technology in Japan)”, in *The Journal of Educational Sociology*, No. 45, 1989

Shin'ichi, Kobayashi, “Kogaku-kei daigakuin no hatten dankai to gen-dankai (Expansion of Engineering Graduate Education and the Present Situation in Japan)”, in *The Journal of Educational Sociology*, No. 44, 1989

## 日本の大学院の機能と問題

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日本の大学院は、その学術振興に対する大きな貢献にもかかわらず、比較的、改革や政策の議論にさらされることもなく、研究の対象とされてもこなかった。しかし大学審議会もここ数年大学院に関して答申を行っていることをみても明らかなように、教育行政、研究者の間で、大学院の現在の諸問題や改革についての関心が高まっている。

本稿は、まず日本の現在の大学院諸問題が規模の小ささから派生していることを指摘し、問題を4つに整理した。即ち、1) 大学院定員未充足、2) 大学院教育の不活性、3) 少ない学位授与件数、4) 限られた大学院生の雇用機会、これら4つの問題は互いに関連しており、悪循環を形成している。そしてこの悪循環をもたらしめている原因として、日本では大学院生に対する雇用市場が研究者以外に形成されていないことを指摘した。第二に、大学院生への需要が小さいにもかかわらず、大学院が設置されてきた理由を検討した。私立大学では設置認可が比較的容易なこともあって、経営的に必ずしも有利とはならないが、威信の向上という側面から大学院を設置する傾向がある。しかしこれは定員未充足を結果することになる。第三に文部省大学改革協議会、大学審議会の示した大学院の充実と改革案に関連して要点を紹介し、その実現には財政的裏付けが必要であることを指摘した。第四に十分に機能しなかった旧制大学院にかわって研究者養成機関として新制大学院は研究者養成機関として設置されたが、その機能に変化—産業界へ多数の高度専門技術職者を輩出する傾向—が見られることを指摘した。しかしこれは工学・農学分野に関してのことであり、人文・社会科学では大学院生の雇用市場が大学教員市場以外に十分に形成されておらず、大きな変化は見られない。第五はこの大学院生の雇用市場の状況とこれを背景にした大学院の入学政策の差異を分野別に指摘した。第六は、同じ専門分野にあっても個々の大学院には様々な性格が見られ、大学院の機能が多様化する傾向にあることを社会科学を対象に分析した。社会科学系大学院は大きく1) 大学教員養成機関、2) 専門職者養成機関、3) 資格試験のための準備機関の3つに類型化されるが、それぞれ大学院生の雇用状況を反映して異なった定員充足状況を示していることを指摘した。最後に今後の課題として、分野を問わず大学院における教育・研究環境を整備する必要があることと、そして特に社会科学系大学院に関しては、高度専門職者の雇用市場の開拓のみならず、研究水準の維持と向上のために一層タイトになると予測される大学教員市場の他に研究者市場の形成が必要であることを指摘した。

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