

Chapter 2

Higher Education Development in Japan

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2.1 Introduction

With rapid economic growth and a dramatic increase in the number of students in higher education institutions in many Asian countries since the 1990s, higher education systems in these countries have evolved into the stage of mass higher education according to Martin Trow's definition (Trow 1973). Some countries, such as China, Singapore, and Malaysia, are making efforts to build up universal-access higher education systems by raising their enrollment to over 50 % of the age-cohort. Compared with many other countries in Asia, enrollment in Japanese higher education had already amounted to 24 % of the 18-year old age group by 1970 and its gross enrollment had increased to 51.6 % of the age-cohort by 1985.

Although Japan established one the largest higher education systems in Asia much earlier than most of the other Asian countries and some European countries (including the UK, Germany and France), little research has been published in Japan on this topic other than a few Japanese books and articles by Amano (1996, 2003), Kitamura (1999), and Ichikawa (1995). This chapter will address the research question: how did Japan's higher education shift from massification, through to post-massification and to near universal access? By examining the changes in the enrollment in Japan's higher education based on quantitative analysis, the chapter will provide an example of how an Asian country had experienced different stages of the growth in enrollments in higher education. Moreover, it is also argued that the major findings from Japan's case study are not necessarily consistent with the definition of the three-stage linear changes in higher education enrollment by Martin Trow.

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The chapter consists of the following sections: definitions of higher education and post-massification higher education in Japan; the quantitative changes in Japan's higher education from the early 1960s to 2011; and the processes of expanding higher education over the period. The chapter will conclude by discussing some of the distinguishing characteristics of Japan's higher education expansion during the period.

2.2 Key Definitions and Terms

2.2.1 Higher Education

The definition of higher education can be formulated in a number of ways. In Japan, in a narrow sense, it typically refers to three major types of institutions: universities, junior colleges (*Tanki Daigaku* in Japanese) and colleges of technology (fourth year). In addition to these three types of institutions, it also includes specialized training colleges (*Sensyuu Gakkou* in Japanese), the Open University of Japan (regular courses), correspondence schools, and a few institutions founded by companies or corporations.

Normally graduates from senior high school or those who have completed 12 years of schooling are qualified to apply for admission to universities. At undergraduate level, the normal duration of study is 4 years, except for faculties of medicine and dentistry which require 6 years. Graduate education consists of master's level study and doctoral education. The typical length of study is 2 years for a master's degree and 3 years for a PhD or doctoral degree.

Except for very few 3-year junior colleges specializing in nursing and health sciences, the typical length of study in junior colleges is 2 years. Some junior colleges, mainly enrolling female students to learn Home Economics and foreign languages prior to World War II, experienced a rapid expansion after the 1950s. The junior colleges were initially founded as finishing schools for women being awarded terminal degrees, but even today female students still constitute an overwhelmingly share of their total enrollment. In relation to their specialized curriculum profile, a vast majority of them were enrolled in Human Science and Home Economics. Prior to 2005, graduates from junior colleges received an Associate degree, which is equivalent to the "Foundation Degree" in the UK or the "Associate Degree" in the USA. Since October 2005, a new degree called "Tanki daigakushi" meaning in English an academic degree awarded by junior colleges, replaced the old "associate".

Colleges of technology have lower entrance standards, primarily providing 5-year vocational educational programs for graduates from junior higher schools. The specialized training colleges ("Sensyuu gakkou" in Japanese) only appeared in the 1970s. Though some specialized training schools had existed in the nineteenth century, it is generally acknowledged that these pre-war schools have little connection with the newly-founded specialized training colleges. According to the Schools Law, specialized training colleges are expected to conduct systematic education to develop the abilities necessary for certain vocations or practical life, or

to enhance cultural standards. Similar to junior colleges, a large majority of those studying in specialized training colleges are female. Normally, specialized courses last at least 1 year but many are for 2 years or more. Most of these courses are concerned with medical science, cosmetology, and the subjects of design and fashion.

2.2.2 Enrollment in Higher Education

The overall rate of student enrollment in higher education institutions varies substantially depending on which institutions are included in the calculation. In this chapter, the rate of student enrollment in higher education institutions refers solely to the proportion of new entrant students in the age cohort (where normally the age cohort refers to the number of junior higher school graduates 3 years previously in Japan.). The gross rate of enrollment in higher education institutions corresponds to the rate of enrollment in all higher education institutions, whereas the rate of higher education enrollments implies only the percentage of students enrolled in universities, junior colleges and colleges of technology (fourth year) of the age-cohort.

2.2.3 Post-massification of Higher Education

The term “post-massification of higher education” means the process of transition from mass higher education toward the next stage of higher education expansion. By observing several changes in Japanese higher education since the 1970s, some Japanese scholars argue that as a national system of higher education moves from massification to post-massification, the following events will occur (Arimoto 1997; Zemsky 1997):

1. Budget retrenchment will force public agencies to focus renewed attention on the social and economic rationalization of university functions. At least one result will be a stronger system of public accountability.
2. The system of higher education will become increasingly privatized, either through greater expansion of the private sector or through increased reliance on student fees to fund public-sector institutions—or both.
3. Institutions of higher education will find themselves more responsible for their own management in an era of deregulation.
4. Market forces will increasingly supplant public policy in determining the scale, scope, and price of higher education.
5. With a growing number of institutions “on their own,” public agencies and public opinion will seek to secure the quality of the system of higher education through new forms of accreditation.
6. As part of that effort to ensure quality, educational outcomes will prove increasingly important for gauging institutional accountability.
7. Inevitably, these changes will result in an increase in the level of psychological stress within the university.

In the United States it was suggested that beginning in the late 1980s, a series of emerging crises indicated that the system was moving toward post-massification. The process was characterized by increased public scrutiny, calls for accountability, the withdrawal of public support, price resistance and discounting, rising market pressures and competition, a shift toward vocationalism, and persistent problems related to the increase in time-to-completion of degrees. The process of moving from massification to post-massification varies greatly by country and national contexts. Some movement of Japan's higher education toward post-massification was seen as early as the late 1970s, but it occurred in significant scale only in the early 1990s before Japanese higher education could provide near universal access.

2.3 Changes in Overall Enrollment

The dramatic expansion of Japanese higher education was initiated in the late 1950s when Japan started its New Long-Term Economy Plan with the purpose of doubling its citizens' income. By 1963, Japan's enrollment had reached 15 % of the age-cohort, indicating that its higher education had entered into the phase of mass higher education. As shown in Table 2.1, the gross enrollment in higher education, including universities, junior colleges, colleges of technology, and specialized training colleges, increased from 15.5 % in 1963 to 51.6 % of the age-cohort in 1985; the enrollment in universities, junior colleges and colleges of technology rose to 52.3 % of the age-cohort by 2005. It took 22 years for Japanese higher education to evolve from the threshold of mass higher education into universal access in terms of gross enrollment in higher education, and more than 40 years for the enrollment in universities, junior colleges and colleges of technology to exceed 50 % of the age-cohort.

According to the changes in student enrollments, three different practical phases can be identified as follows. During the first phase, from 1963 to the late 1970s, the fundamental driving force for the expansion of Japanese higher education came from increasing calls from industry dealing with a rapidly growing demand for manpower in science and engineering (Amagi 1978). The dramatic expansion of higher education in Japan was driven by a need to satisfy the needs of industry and responding to economic development. Throughout the 1960s and the mid-1970s, Japanese higher education experienced a period of unprecedented growth—often characterized by the term “the first massification of higher education”. During the decades prior, there had been a steady increase in the numbers of students enrolled in the already established higher education institutions, resulting in substantial growth in enrollment from 15.5 % in 1963 to 38.9 % in 1975. Among these institutions, especially private universities and junior colleges, enrollments grew from 70.5 % and 80.3 % of total enrolments in their respective sectors in 1965, to 76.5 % and 91.2 % in 1975 respectively (Tables 2.2 and 2.3).

In the second phase, from the late 1970s to the mid-1980s, the expansion of higher education was undercut by a growing set of external pressures. These included: government policy to control the dramatic increase in enrollment with the

Table 2.1 Enrollment in higher education: 1963–2011 (percentage)

Year	Type				
	Universities	Junior colleges and colleges of technology	Specialized training colleges	Universities, junior colleges and colleges of technology	Higher education institutions
1963	12.1	3.4	–	15.5	15.5
1965	12.7	4.2	–	17.0	17.0
1967	12.8	5.2	–	18.1	18.1
1969	15.4	6.3	–	21.7	21.7
1971	19.3	7.9	–	27.2	27.2
1973	23.3	9.9	–	33.2	33.2
1975	27.1	11.8	–	38.9	38.9
1977	26.3	11.9	9.5	38.2	47.7
1979	26.0	11.9	11.6	37.9	49.5
1981	25.7	11.7	12.4	37.4	49.7
1983	24.4	11.2	12.6	35.6	48.2
1985	26.4	11.8	13.5	38.2	51.6
1987	24.7	11.9	14.3	36.6	50.9
1989	24.6	12.2	16.0	36.8	52.8
1991	25.5	12.7	17.3	38.2	55.6
1993	28.0	13.4	18.2	41.4	59.6
1995	32.0	13.8	18.9	45.8	64.7
1997	34.9	13.0	19.5	47.9	67.4
1999	38.1	11.7	20.0	49.8	69.8
2001	39.9	9.4	20.8	49.3	70.1
2003	41.3	8.5	23.1	49.7	72.8
2005	44.2	8.1	23.9	52.3	76.2
2007	47.2	7.4	21.7	54.6	76.3
2009	50.2	7.0	20.4	57.2	77.6
2011	51.1	6.6	22.0	57.7	79.7

Source: RIHE (2012), MEXT (2012a)

purpose of exercising quality assurance on the private sector in particular, and the negative and persistent effects resulting from the 1973 “oil price shock”, along with the 1973–1974 stock market crash on Japan’s economic growth. Together these factors led to a reduced demand for university graduates. As a result, enrollment in universities, junior colleges and colleges of technology all stagnated with rates remaining at 38.9 % in 1975 only rising to 38.2 % by 1991. Similarly, during the decade from 1975 to 1985, the share of enrollment in both private universities and private junior colleges decreased from 76.4 % and 91.2 % to 72.7 % and 89.7 % respectively, indicating that the share of student numbers in the national and public sectors had expanded (Tables 2.2 and 2.3; Fig. 2.1).

However, in response to meeting the increased demand from high school graduates, a new type of educational institution, as mentioned earlier, the specialized training

Table 2.2 Numbers of students in universities by sector and year (unit: person)

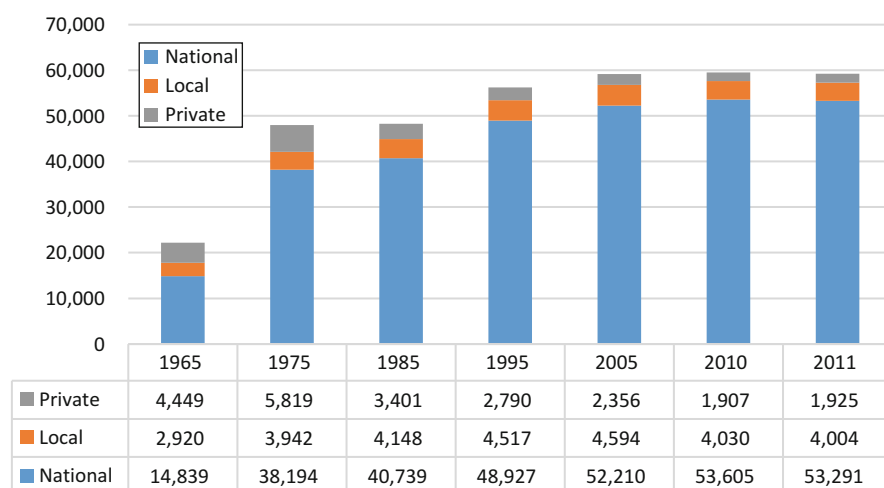
Year	Total	National	Local	Private	Percentage of private
1965	937,556	238,380	38,277	660,899	70.5
1975	1,734,082	357,772	50,880	1,325,430	76.4
1985	1,848,698	449,373	54,944	1,344,381	72.7
1995	2,546,649	598,723	83,812	1,864,114	73.2
2005	2,865,051	627,850	124,910	2,112,291	73.7
2007	2,828,708	627,402	129,592	2,071,714	73.2
2009	2,845,908	621,800	136,913	2,087,195	73.3
2011	2,893,489	623,304	144,182	2,126,003	73.5

Source: MEXT (2012b)

Table 2.3 Numbers of students in junior colleges by sector and year (unit: person)

Year	Total	National	Local	Private	Percentage of private
1965	147,563	8,060	13,603	125,900	85.3
1975	353,782	13,143	17,973	322,666	91.2
1985	371,095	17,530	20,767	332,798	89.7
1995	498,516	13,735	24,134	460,647	92.4
2005	219,355	1,643	14,347	203,365	92.7
2007	186,667	184	10,815	175,668	94.1
2009	160,976	3	9,973	151,000	94.1
2011	150,007	0	8,487	141,520	94.3

Source: MEXT (2012b)

**Fig. 2.1** Numbers of students in colleges of technology by sector and year (Source: MEXT 2012b)

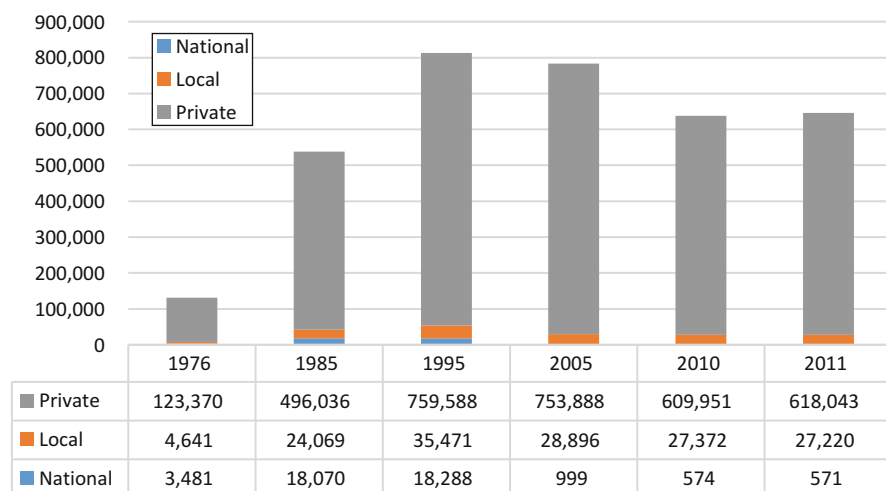


Fig. 2.2 Numbers of students in specialized training colleges by sector and year (Source: MEXT 2012b)

colleges, came into being in 1977. Although national as well as local public and private specialized training colleges were founded by central government, local authorities, and private school corporations separately, the number of students in the private sector accounted for the majority. As Table 2.1 demonstrates, enrollment in specialized training colleges has expanded continuously since 1977 in striking contrast to the steady drop in enrollment in the other three categories of already established institutions, universities, junior colleges, and colleges of technology. As suggested in Fig. 2.2, due to the fact that more than 90 % of these students were enrolled in private specialized training colleges, it was the emergence of the private specialized training colleges and their rapid growth that has led to accelerated expansion in gross enrollments since the late 1970s.

The stagnant growth in enrollment in universities, junior colleges and colleges of technology throughout the late 1970s and the middle 1980s was followed by another rapid expansion in higher education. Several important factors may explain this (Ichigawa 1995, p. 35). First, the contribution of private economic growth had recovered and overall family incomes increased. This caused a general increase in demand for higher education. Second, from the late 1980s, Japanese youth, born in the second baby boom after World War II, reached the age for entering higher education institutions. Because the Japanese government insisted on their policy of regarding higher education as an individual good rather than as a public good, public financial support for expanding higher education was rigidly regulated, thus giving rise to a rapid growth of enrollment in the private universities and junior colleges and specialized training colleges. Although the gross enrollment rose from 51.6 % in 1985 to 79.7 % in 2011 and enrollments in universities, junior colleges and colleges of technology expanded from 38.2 % in 1991 to 57.7 % in 2011, the

share of enrollments in private universities, junior colleges and specialized training colleges increased from 72.7, 89.7 and 93.0 % in 1985 to 73.5, 94.3 and approximately 96.0 % in 2011 respectively (Tables 2.2 and 2.3; MEXT 2012a). Furthermore, it is interesting to note that the increase in the enrollment in both universities and specialized training colleges was in marked contrast to the steady drop in the enrollment in junior colleges and colleges of technology, particularly since the middle 1990s. As Table 2.1 demonstrates, combined enrollment in junior colleges and colleges of technology decreased from 13.8 % in 1995 to 6.6 % in 2011.

In the first massification of higher education throughout the early 1960s to the middle 1970s, there was a dramatic and steady growth in the enrollment in universities, junior colleges and colleges of technology. Since the late 1990s, higher education has transitioned from post-massification to the stage of universal higher education in terms of net enrollment basically on the basis of the expansion of both universities and specialized training colleges.

2.3.1 Changes in Enrollment by Discipline

There is a clear division of labor between universities and junior colleges in Japan's higher education. Figures 2.3 and 2.4 show how the number of students at universities and junior colleges changed by discipline from 1965 to 2011. At university level, the greatest number of students was enrolled in Social Science, followed by Engineering, with the third largest in the field of Human Science. The three groups of students experienced a dramatic expansion from 1965 to almost 1995. After 1995 the numbers enrolled in Human Science, Social Science, and Engineering stabilized.

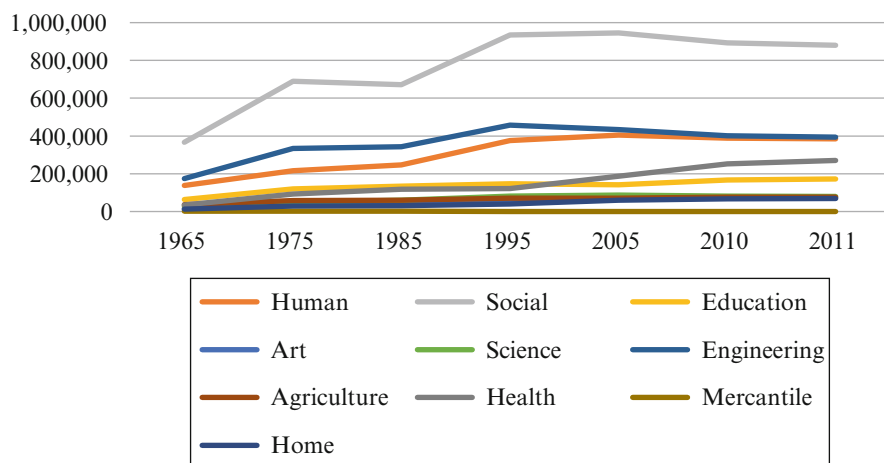


Fig. 2.3 Numbers of student in universities: by discipline (Source: Based on the data in MEXT 2012a, b)

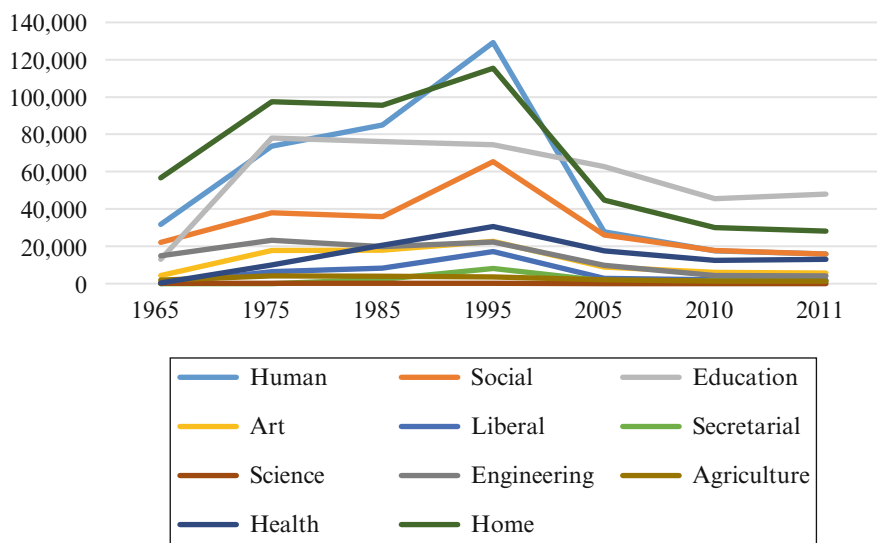


Fig. 2.4 Numbers of students in junior colleges by discipline (Source: Based on the data in MEXT 2012a, b)

In contrast, the numbers of students in Health Care and “Others” seem to have experienced a quick growth especially from 1995.

In junior colleges, the three largest groups of students were in Human Science, Home Economics, and Education (Fig. 2.4). While the number of students in Education began to decline as early as 1975, along with other disciplines such as Social Science, Agriculture, Liberal Arts, and Secretarial Studies, the decrease in the number of students in Human Science and Home Economics did not occur until after 1995.

2.3.2 Growth of Female Student Numbers

The number of female students in higher education grew rapidly from 1963 to 2011, stimulated by government policy and the changing notions about the role of women in society. During this period, the female student enrollment rate in higher education institutions increased by more than eight times. However, it should be noted that the growth of female student numbers was very slow in comparison with Europe and the U.S. This was largely due to social factors including changes in employment prospects, marriage expectations (a high proportion of Junior College graduates never enter employment), the need for care and protection of daughters, and the perceived relevance of courses. The share of female students in universities, junior colleges, and colleges of technology rose from 9 % in 1965 to over 50 % of the totals in 2011 (MEXT 2012a). Consequently, by 2011 female students constituted a

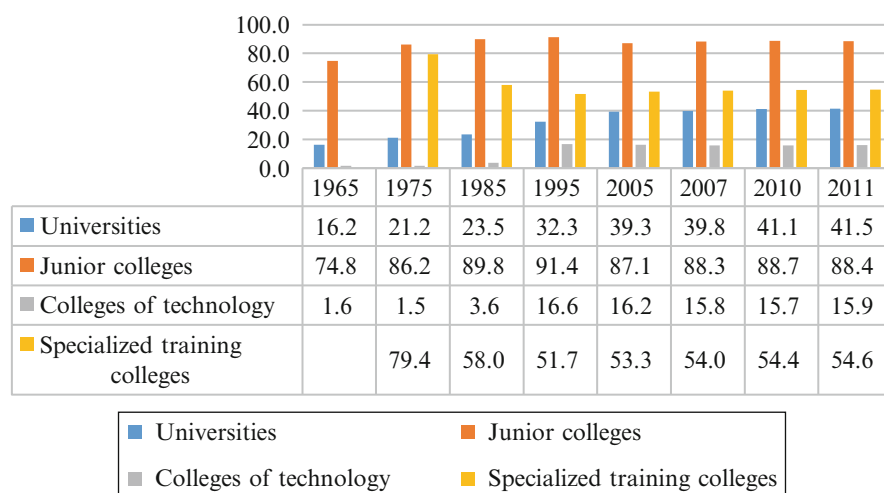


Fig. 2.5 Enrollment of female students 1965–2011 (percentage) (Source: Based on the data in MEXT 2012a). Note: the data for specialized training colleges in 1965 refers to that of 1966

majority of the student body. In other words, the movement from massification through post-massification and toward universal access in Japanese higher education relied significantly upon the growth in numbers of female students.

As Fig. 2.5 indicates, the percentage of female enrollments constituted the largest share of total enrollments in junior colleges, followed by the share of female students in specialized training colleges among the four types of higher education institutions during this period. It is important to emphasize that the share of female students did not maintain a steady expansion over the period in all types of institutions. In contrast to the continuous growth of female enrollment in universities before 2011 and junior colleges before 2010, enrollment of female students in specialized training colleges continued to decline from 1975 to 1995.

2.4 Expansion in Higher Education Institutions

Corresponding to the growth of enrollment in higher education, the number of higher education institutions began to rise dramatically in and after 1963. In the period 1965 to 2011, the number of universities, junior colleges, and colleges of technology grew from 317, 369, and 54 respectively in 1965 to 780, 387, and 57. During this period the number of universities increased by more than a factor of 2 (MEXT 2012a).

With the largest share of the increase in enrollment occurring in the private sector, private institutions and especially private junior colleges experienced the greatest growth in numbers during this era. From 1965 to 2011, the percentage of private

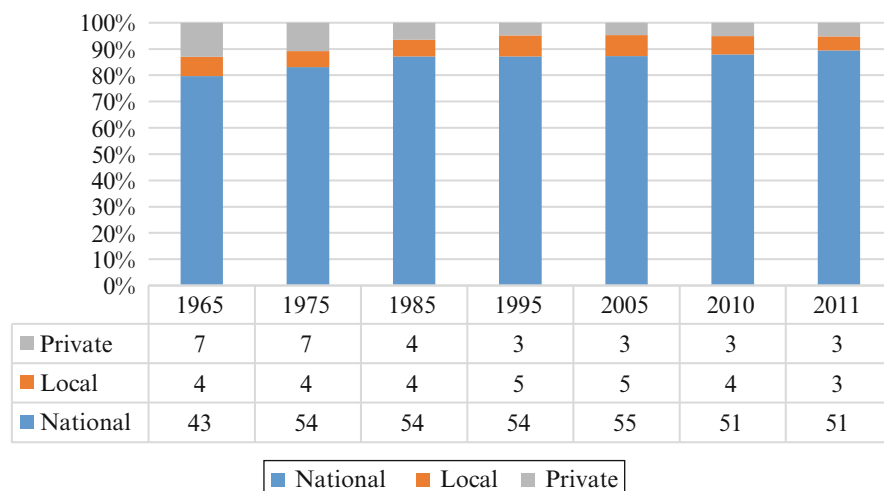


Fig. 2.6 Numbers of colleges of technology by sector 1965–2011 (Source: Based on the data in MEXT 2012a)

universities and junior colleges had grown from 65.9 and 81.6 % to 76.8 and 93.8 % respectively (MEXT 2012b). As mentioned earlier, a huge number of these 2-year junior colleges were primarily catering to female students. The majority of them were studying Humanities, Home Economics and Education.

In colleges of technology, the national sector accounted for the predominant share of the total, their number having increased from 43 in 1965 to 51 in 2011. This was in sharp contrast to the number of private colleges of technology which numbered only three by 2011 (Fig. 2.6).

2.4.1 Number of Students per Full-Time Faculty

As the numbers of institutions increased, so did the demand for faculty. According to the national data (MEXT 2012a), during the period 1965–2011, the total number of full-time faculty employed in Japanese universities, junior colleges and colleges of technology more than doubled, from 68,457 in 1965 to 190,315 in 2011. In particular, there was a sharp growth of full-time faculty in universities between 1965 and 2011, from 57,445 to 176,684. In parallel with the rapid expansion in full-time faculty in universities, although no radical changes occurred in the average number of students per full-time faculty, significant differences in the ratio of faculty to students could be found between national universities and private universities. Despite financial constraints, in recent years it remains a little above 1:10 in the national universities; in private universities the number of students per full-time faculty dropped from 29.3 in 1965 to 24.6 in 1985, and to 21.0 in 2011, but this ratio is still

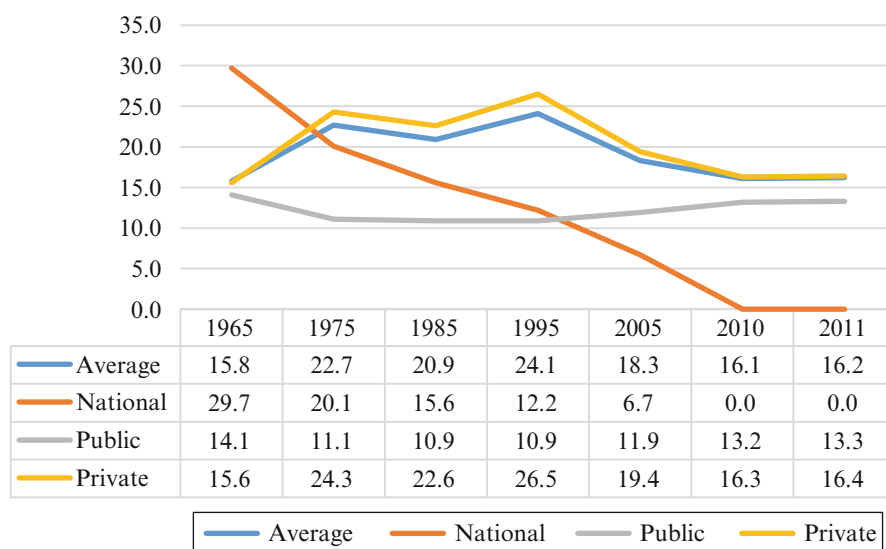


Fig. 2.7 Numbers of students per full-time faculty junior colleges (Source: Based on the data in MEXT 2012a, b)

far higher than in national universities. There are many factors contributing to this. One of the most important is that the national universities have a higher proportion of laboratory and clinical courses, and of graduate students and courses. In contrast, the majority of private universities are teaching-centered and most faculty devote their time to providing lectures for a larger number of undergraduate students. At junior colleges, the total number of full-time faculty doubled from 9,321 in 1965 to 20,702 in 1995, followed by a gradual decline until 2011. Figure 2.7 shows that the changes by sector in the average number of students per full-time faculty occurred almost in line with these trends. The ratio expanded between 1965 and 1975, declined between 1975 and 1985, rose again between 1985 and 1995, and since then has continued to fall. Over the last 30 years, the number of students per full-time faculty in the few national junior colleges has decreased dramatically, from 29.7 in 1965 to 6.7 in 2005.

2.4.2 Changes in Operating Expenditure per Student

With a rapid expansion in private universities and junior colleges throughout the first period of massification of higher education, the Japanese government began to provide financial support for the private sector. Initially in 1971, public finance was allocated for students in private junior colleges. From 1979, students in private universities also received direct government support. According to the Private

School Promotion and Assistance Law, the government could subsidize up to 50 % of the current expenditure of private universities. However, the level of the subsidy has never reached 50 %: in the peak year of 1980, the subsidy reached 30 % of expenditure. At present, the private universities receive subsidies of about 12 % of expenditure (Maruyama 2010). In Japan, the financial support from government was directed to private institutions and not as subsidies for students. One of its nominal objectives was to reduce the tuition fees charged by private institutions although there is no strong evidence that this happened. Another objective was to enhance the quality of teaching and research activities in the private sector. In this aspect, much progress has been made particularly in the faculty-student ratio since the early 1970s.

Unlike Europe and the U.S., it is parents not students who expect to carry the financial burden of funding the tuition and maintenance costs of education. One consequence of this is that the government is sensitive to parental responses although the current need to cut public expenditure has take precedence. Historically, tuition at the national universities had been held at a relatively low cost, partly to ensure access for students from less affluent families. Many argue that increased fees in the national universities removes this social element. Nevertheless, the lower cost of study at the national universities and their high academic status will ensure that it is the private sector that carries the financial burden of the declining birth-rate.

As shown in Fig. 2.8, together with the national universities, government funding as operating expenditure per student grew steadily between 1971 and 2010. Although the amount of operating expenditure per student in both private universities and private junior colleges was less than that of national universities, the amount of

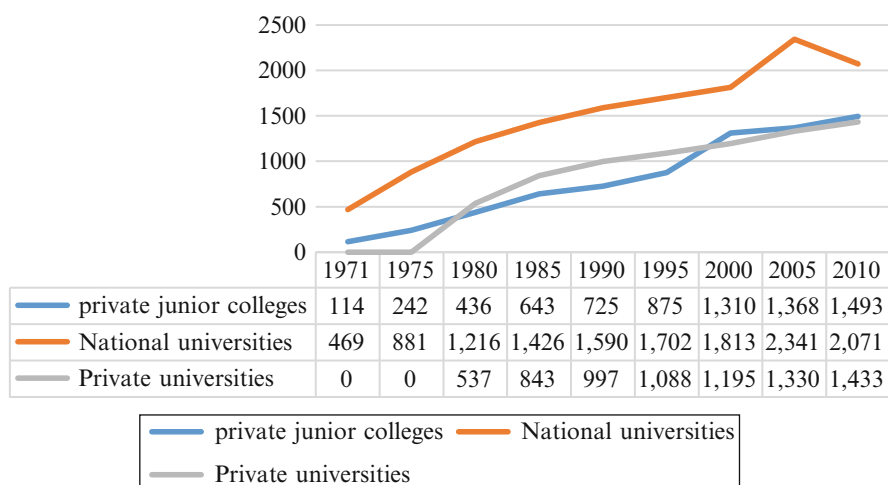


Fig. 2.8 Operating expenditure per student universities and junior colleges: by sector (current prices) (Unit: thousand Yen) (Source: Based on the data in MEXT (2012a)). Note: The number of students includes both undergraduates and postgraduate

operating expenditure per student in private junior colleges since 2002 has surpassed that of private universities. As indicated by Kuwaha (1993), although the government exercises regulation of private institutions through financial support, steady provision of public funding has made it possible for a majority of private institutions to improve their educational environments, especially in regard to teaching equipment and instruments. This is one of the reasons why private institutions in Japan could contribute significantly to the considerable expansion in higher education enrollment since the early 1970s.

2.5 Concluding Remarks

The evolution of the Japanese system of higher education from massification through post-massification and now to near universal access, experienced three distinct stages: from a dramatic expansion in enrollment, through a slowing and declining growth in enrollment to a new continuing rise in enrollment. In other words, the shift from massification, through post-massification to almost universal access did not occur as a steady and continuous expansion. The process of expansion in enrollment was interrupted for almost 10 years thanks to various external factors, indicating that Japan's experience did not completely conform to that described by Martin Trow (1973).

In the United States the process of moving from massification toward the stage of universal access both resulted in and was the product of the "publicization" of the higher education system (Gumport et al. 1997), whereas in Japan it was essentially a process of expanding private institutions. In other words, the process of post-massification toward universal access to higher education was characterized by "privatization" of the higher education system. The data show that enrollment in higher education not only expanded in junior colleges and specialized training colleges, but also in universities. By 2011, the private sector's share of students in the former types of institutions accounted for more than 90 % of the total, while in the latter it constituted more than 80 % of the total. As a result, the pattern of changes in Japan's higher education seems to conform to the original aim of the government: that is, to preserve the structure, excellence, and status of the national universities (at minimal cost) which are viewed as critical to meet the fundamental needs of the country for public servants, professionals and engineers, and to encourage private institutions to admit more students in practical and vocational fields of study. However, the importance of public funding for the private sectors, accompanied by the national supportive policy for expanding private institutions cannot be overestimated. Without that, Japan's higher education would not have expanded so dramatically over the past decades.

The unprecedented expansion in enrollments fostered a growth in the number of institutions – for example, a massive increase in the number of universities – but did not create the diverse and complex higher education system as occurred in

the United States after the 1960s. Except for the emergence of a few small and specialized training colleges, no fundamental changes occurred in the basic structure of Japan's higher education system. In a sense, the Japanese case study demonstrates that the expansion of higher education could be realized within an existing system without changing its basic structure, by relying upon the already established institutions.

The most significant change in the student body was the dramatic growth of female students from 1963 to 2011. The majority was enrolled in junior colleges and specialized training colleges, studying Human Science, Home Economics, and Social Science. Female students not only played a decisive role in stimulating the process from massification to near universal access to higher education, but also contributed to diversifying the student body. No data show a substantial increase in the number of part-time students, nor any growth in the numbers of mature students.

Note This chapter is considerably modified with updated data based on the paper written by Huang, F. (2012). Higher education from massification to universal access: A perspective from Japan. *Higher Education*, 63(2), 257–270.

References

- Amagi, I. (Ed.). (1978). *Atarashi daigakukan no souzou* [Creation of a new university's ideal] (pp. 6–7). Tokyo: Saimaru Press (in Japanese).
- Amano, I. (1996). *Nihon no kyouikushisutemu: kouzou to henndou* [The Japanese education system: Structure and changes]. Tokyo: University of Tokyo Press (in Japanese).
- Amano, I. (2003). *Nihon no koutoukyouiku shisutemu* [The Japanese higher education system]. Tokyo: University of Tokyo Press (in Japanese).
- Arimoto, A. (1997). Massification of higher education and academic reforms in Japan. In RIHE (Ed.), *Academic reforms in the world: Situation and perspective in the massification stage of higher education* (RIHE International Seminar Reports No. 10, pp. 21–55). Hiroshima: Research Institute for Higher Education (RIHE), Hiroshima University.
- Gumport, P., Iannozzi, M., Shaman, S., & Zemsky, R. (1997). The United States country report: Trends in higher education from massification to post-massification. In RIHE (Ed.), *Academic reforms in the world: Situation and perspective in the massification stage of higher education* (RIHE International Seminar Reports No. 10, pp. 57–93). Hiroshima: Research Institute for Higher Education (RIHE), Hiroshima University.
- Ichigawa, S. (Ed.). (1995). *Daigaku taisyuka no kouzou* [The structure of massification of universities] (p. 35). Tokyo: Tamagawa Press (in Japanese).
- Kitamura, K. (1999). *Gendai no daigaku koutoukyouiku* [Systems and functions of higher education: A comparative perspective]. Tokyo: Tamagawa Press (in Japanese).
- Kuwaha, R. (1993). *Sengo daigaku seisaku no tennkai* [Changes in higher education policy in post-war Japan]. Tokyo: Tamagawa Press (in Japanese).
- Maruyama, F. (2010). Public expenditure on higher education in Japan. *Higher Education Forum*, 7, 53–68. Research Institute for Higher Education (RIHE), Hiroshima University.
- MEXT. (2012a). *Gakkou kihon cyousa houkokusyo, koutou kyouiku kikan hen* [Basic investigation on school education: Higher education institutions]. Tokyo: Nikkei Printing House (in Japanese).
- MEXT. (2012b). *Statistical abstract 2012 edition*. Tokyo: National Printing Bureau.

- RIHE. (2012). *The statistics of Japanese higher education*. Hiroshima: Research Institute for Higher Education (RIHE), Hiroshima University (in Japanese). Available at http://rihe.hiroshima-u.ac.jp/data_list.php?dataname_id=43#3
- Trow, M. (1973). Problems in the transition from elite to mass higher education. In OECD (Ed.), *Policies for education* (p. 57). Paris: OCED.
- Zemsky, R. (1997). Seminar on post-massification. In RIHE (Ed.), *Academic reforms in the world: Situation and perspective in the massification stage of higher education* (RIHE International Seminar Reports No. 10, pp. 1–20). Hiroshima: Research Institute for Higher Education (RIHE), Hiroshima University.

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