The Education and Training of Industrial Manpower in Japan

Ken Inoue

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Abstract

This paper examines the role that education and training have played in Japan's transformation from a preindustrial agrarian society in the late 19th century to one of the leading industrial nations some 100 years later. It provides as well some lessons for developing countries.

The first part of the paper discusses the establishment by the Meiji government (1868-1912) of a new school system to train the manpower needed to create a modern Japan. The Meiji government concentrated first on developing higher education to provide the leaders required for Japan's process of modernization. Expatriates played an important role in the development of the higher education subsector. The government also recognized the need to provide universal primary education and was able to achieve this by the end of the Meiji period. Much of the financial burden of primary education was transferred from the central government to local governments, which were also given a high degree of autonomy. The emphasis on higher and primary education resulted in severe shortages of skilled middle-level manpower needed for industrialization. To address this problem, the government issued the Ordinance on Industrial Schools in 1899, which sought to develop industrial education and training at the secondary level.

The development of the education system during the Meiji period was essentially a process of trial and error. After the Second World War, Japan developed a new educational system comprising six years of primary education, three years of lower and three years of upper secondary school, and four years of university. The system has developed rapidly: enrollment

rates at the primary and lower secondary level are at present almost 100 percent and at the upper secondary level, 94 percent. Education plays a large role in Japanese society, which has been described as an "academic qualification society." Academic qualifications determine an individual's salary, promotion, and social status, and therefore competition for places in the top schools is fierce. There is an overall bias toward general education rather than learning specific skills. The reason for this is that in a time of rapid technological change a strong background of general knowledge is more useful than specific vocational skills that may soon become obsolete.

The role of companies in the upgrading and utilization of manpower is considered in the second part of the paper. The government gives strong support to the education and training system in Japanese companies through financial assistance and incentives. The system covers almost all levels of employees in a company. Moreover, under the Japanese life-time employment system, employees receive education and training at each stage of their career until they retire. Japanese workers are also encouraged to play an active role in their companies; the idea of quality control circles has contributed to higher levels of quality and greater participation by employees. Aspects of the Japanese style of management are considered, including the lifetime employment system that results in low levels of unemployment and relatively stable labor-management relations.

In its summary, the paper considers several aspects of Japan's development experience and suggests lessons that developing countries could draw from this experience.

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CHAPTER I

INTRODUCTION

The three basic resources necessary for economic development are financial resources (money), physical resources (material) and human resources (manpower). Although all three are closely related and mutually dependent in the process of economic development, manpower appears to be the most fundamental resource. A country with rich natural resources and ample financial resources cannot necessarily achieve steady economic development if it does not have enough manpower to utilize and develop them. On the other hand, a country with well educated manpower has a chance to obtain economic success, even if it has poor natural resources.

Human resources have played a crucial role in Japan's economic development. The Government has always been strongly concerned about the nation's education, and by the end of the Meiji period Japan had achieved almost universal compulsory education. Today, the rate of attendance at upper secondary schools is 94% and that at university 32%. In regard to skill acquisition, various types of institutions such as upper secondary schools offering vocational courses, technical colleges, special training schools, vocational training schools and junior vocational training colleges are provided. However, people seem to prefer general education to vocational. This is because the Japanese educational system works as a sophisticated mechanism to select students, and companies recruit new graduates based on their academic qualification rather than their vocational knowledge and skills.

After hiring new graduates, Japanese companies provide long and systematic education and training for all employees including blue-collar workers in order to develop their potential capability, although there are some differences between large companies and small and medium companies. These long and systematic education and training programs are based on the so-called Japanese style of management such as life-time employment and seniority wage system. Another remarkable characteristic of Japanese manpower is workers' participation in management and production. Human oriented activities such as quality control (QC) circles play an important role in Japanese economic development.

The main purpose of this paper is to examine the formation and utilization of manpower for economic development in Japan, and to consider some lessons for developing countries from Japan's experience. The paper consists of two main chapters. Chapter II considers the role of schools and training institutes in the formation of manpower and examines the education and training system both in the Meiji period and in the post-World War II period. Chapter III deals with the role of companies in the upgrading and utilization of manpower. Education and training in a company, Japanese management and manpower, and workers' participation are the main topics of this chapter. The final chapter describes the lessons which developing countries can learn from Japan's experience.

CHAPTER II

THE ROLE OF SCHOOLS AND TRAINING INSTITUTES IN THE FORMATION OF MANPOWER

1. The Acquisition of Skills for Industrialization in the Meiji Period

This section examines the Japanese education and training system, especially as regards the acquisition of skills for industrialization in the Meiji period. During this time Japan started her modernization process and transformed herself from a pre-industrial agrarian society to a modern industrial nation.

The Meiji period was a time of trial and error for modernization. In the field of education and training, too, many kinds of schools and training institutes were established based on different policies. However, roughly speaking, we can distinguish three types of education and training systems in this period, namely: (a) higher level specialized education and training for the selected elite; (b) primary level general education for everybody; and (c) secondary level industrial education and training for those not included in the elite category. In the following section, we will examine the development of these three systems in this order.

(a) Higher level specialized education and training

The first concern of the Meiji Government was for higher education rather than primary or secondary education. One of the characteristics of the Government's educational policies was that, in producing manpower for industrialization, they started with top level engineers, and only later focussed on middle and lower level engineers. This was mainly because the Meiji Government tried to quickly foster limited elites to be leaders of Japan's modernization. It should also be noted that, in the early Meiji period, each ministry had its own school or training institute to produce the necessary manpower in its field.[1/] In 1878, for example, there were the following schools for higher education and training under the management of different ministries.

Ministry of Education	-	University of Tokyo
Ministry of Engineering	-	College of Engineering
Ministry of Home Affairs	-	Komaba Agricultural School
Ministry of Justice	-	School of Law
Board of Cultivation	-	Sappro Agricultural School

KOBU DAIGAKKO (Ministry's College of Engineering) played the most important role in producing high level skilled manpower. The College was established by a young British engineer, Henry Dyer, in 1873.[2/] When he planned the College, he did not directly transfer the European model to Japan but built his own unique system of engineering education, which combined theoretical study in a school and practical training in a factory. He divided a six-year course into three terms. In the first two years, students learned basic theory in a school, in the next two years they took both specialized subjects in a school and on-the-job training in the ministry's factories, and in the final two years they concentrated on on-the-job training. The College

was highly successful and the level of education was outstanding even by world standards at that time.[3] Graduates from the College had to work in the Ministry of Engineering for seven years and played a crucial role in Japanese industrialization and technological development. After producing 211 graduates, the College was absorbed into Tokyo University and became the Department of Engineering in 1886. The jurisdiction of most of the other ministries' schools was also gradually transferred to the Ministry of Education.

It is important to pay attention to the role of the thousands of foreign experts and teachers, such as Dyer, who were employed by the Meiji Government. For example, the Ministry of Engineering employed 588 foreign experts until it was abolished in 1885, and all staff in the College of Engineering were British educators.[4] The cost of employing them, however, was very high. The Meiji Government spent 4% of the total budget for salary payments to them in the period from 1868 to 1872, 2% from 1873 to 1877, and 1% from 1878 to 1882. In the case of the Ministry of Engineering the payment reached 58% of the total budget.[5]

Another important education and training institute for industrialization was TOKYO SHOKKO GAKKO (Tokyo Craftsmen's School, the present Tokyo Institute of Technology), which was established in 1881. The original purpose of the school was to produce middle-level skilled manpower such as chief craftsmen or instructors for other craftsmen's schools by giving vocational training to poor students. The school had a four year course; one year for basic subjects and three years for specialized subjects. However, since most of the common people did not understand why craftsmen should go to school, more than 70% of the students came from the samurai class and became the same type of industrial elite as the graduates from the College of Engineering.

Although the development of Japanese industry required a great number of skilled workers, graduates from the Ministry's College of Engineering and the Tokyo Craftsmen's School were limited, and they became managers or administrators of industries rather than workers. As a result, a shortage of middle-level skilled manpower emerged as a serious problem for Japanese industrialization in the 1890s.

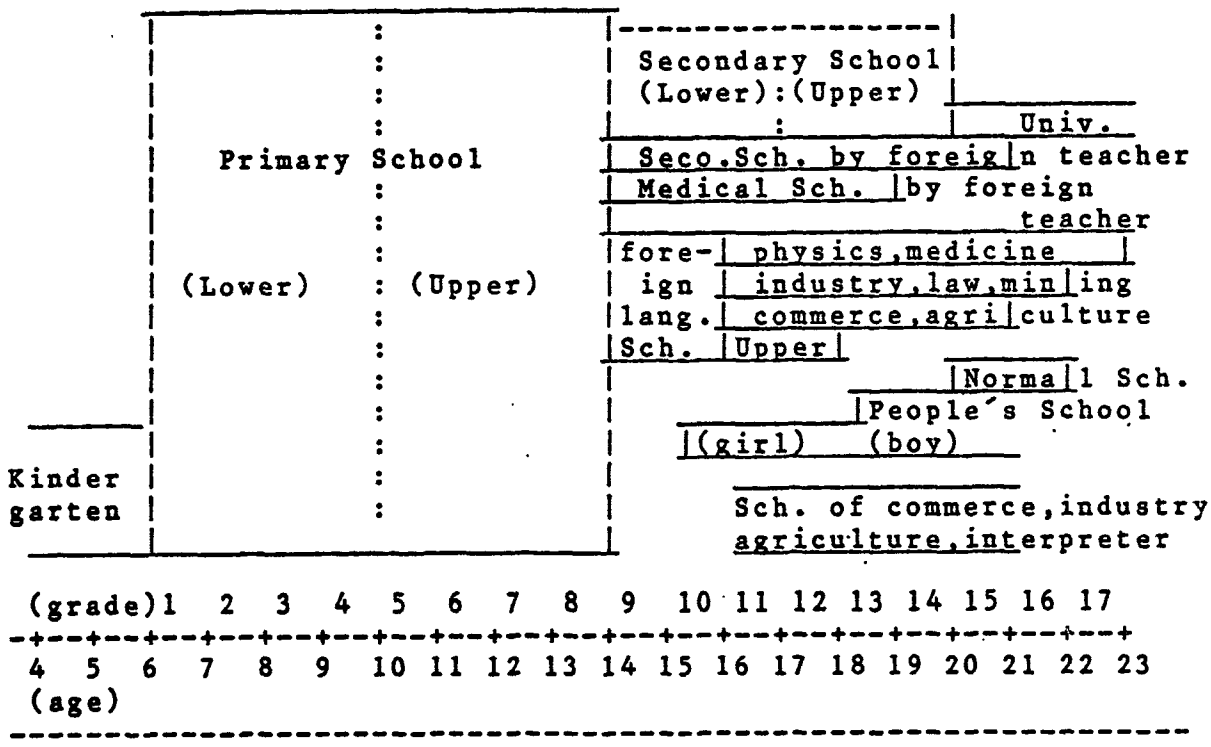
Before looking at this problem, we will first examine the primary education system.

(b) Primary level general education

Although primary education is not directly related to occupation or skill acquisition, it played a crucial role in Japanese development in the following two senses. First, it realized almost universal literacy and numeracy by the end of the Meiji period. Second, in primary school pupils learned the attitude and ethics necessary to be modern workers. In short, primary education provided the basis of modern manpower for Japanese industrialization.

A Ministry of Education was organized in 1871 to make a nationwide plan of education, and GAKUSEI (The Fundamental Code of Education, or literally "School System") was regulated the following year. The Code was the first national plan for a universal education system in Japan. Diagram II-1 shows the school system regulated by the Code. According to the Code, the

Diagram II-1: School System in 1873



entire country was divided into eight university blocks, each university block into 32 secondary school blocks, and each secondary school block into 210 primary school blocks. In this way a total of eight universities, 256 secondary schools and 53,760 primary schools were to be built. However, this was only a desk plan and most of the schools did not actually exist.[67] The main purpose of the Code was to provide a universal primary school system, and to encourage people nationwide to learn in school. The famous preamble of the Code states:

> It is only by building up his character, developing his mind, and cultivating his talents that man may make his way in the world, employ his wealth wisely, make his business prosper, and thus attain the goal of life. But man cannot build up his character, develop his mind, or cultivate his talents without education - that is the reason for the establishment of schools...Learning is the key to success in life, and no man can afford to neglect it....Learning has been viewed as the exclusive privilege of the samurai and his superiors, farmers, artisans, merchants, and women have neglected it altogether and do not even know its meaning...This was due to our evil traditions and, in turn, checked the spread of culture, hampered the development of talent and accomplishments, and sowed the seeds of poverty, bankruptcy, and disrupted homes. Every man should therefore pursue learning; and in so doing he should not misconstrue its purpose. Accordingly, the Department of Education will

> soon establish an educational system and will revise the regulations relating thereto from time to time; wherefore there shall, in the future, be no community with an illiterate family, nor a family with an illiterate member. Every guardian, acting in accordance with this, shall bring up his children with tender care, never failing to have them attend school...[7]

From this preamble we can observe three basic ideas of the Meiji Government about primary education. First, the Government grasped the meaning of education from a practical and utilitarian point of view. They repeated to people that learning is the key to success in life. This is because the Government believed that learning was also the key to economic success in Japan. Learning, here, means acquiring western knowledge and skills for modernization, and primary education was regarded as a basic tool to achieve this purpose. Second, the Code is based on an egalitarian idea of education. It is remarkable that immediately after feudalism Japan had an egalitarian educational system, in which the former so-called four different social classes (samurai, farmers, artisans, and merchants) attended the same class in the same school.[8] Third, the Code started the first compulsory education in Japan. The Code tried to spread primary education by means of regulating several kinds of primary school such as girls school, village school, poor people's school, etc. as well as ordinary primary school, which had four years lower course and four years upper course. Table II-1 shows the rates of attendance at primary school in the Meiji period. Even compared with western countries at that time, 35% in 1875 was a high rate. At the end of the Meiji period it was close to 100%.

Table II-1. RATES OF ATTENDANCE AT PRIMARY SCHOOL

Year	Male	Female	Total
	%		
1875	51	19	35
1885	66	32	50
1895	77	44	61
1905	98	93	96
1915	99	98	99

Source: National Institute for Educational Research, 1977.

The biggest obstacle to the implementation of the Code was finance. A great part of the national budget for education had to be spent for Tokyo University and sending students abroad. In the first budget of 1873, for example, Y 100,000 out of Y 800,000 was earmarked for overseas study. Y 300,000 was spent in 1873 for 1,260,000 pupils in 14,000 primary schools, but this subsidy was abolished in 1881.[9] Table II-2 shows the comparison of expenditure between Tokyo University and primary education.

Table II-2. SHARES OF TOKYO UNIVERSITY AND PRIMARY SCHOOLS IN THE TOTAL NATIONAL EXPENDITURE FOR EDUCATION

Year	Tokyo University (%)	Primary Schools (%)
1879	32	33
1880	40	18
1881	43	abolished

Source: Passin, 1965, p. 74.

Because the national budget could not afford the necessary expenditure for nationwide primary education, local governments and people had to provide most of it. Table II-3 shows the national and local share of educational expenditure. As shown in the table, almost 90% of public expenditure for education was provided by local governments in the Meiji period. As Passin commented, "this undoubtedly had many advantages: It assumed a closer correspondence between public demand and availability of school facilities than otherwise would have prevailed; and it corresponded with her administrative traditions and with the new administrative structure developed by the modern regime."[10/]

Table II-3. RATES OF PUBLIC EXPENDITURE FOR EDUCATION

Year	National share (%)	Local (%)		
		Total	prefectural	municipal
1881	10	90	14	76
1885	10	91	11	79
1890	10	90	12	78
1900	14	86	22	64
1910	11	89	19	71

Source: Passin, 1965, p. 70.

(c) Secondary level industrial education and training

As presented in the previous sections, the Meiji Government began to establish an education and training system first at the higher specialized

level and then at the primary general level. Although a secondary school system had also been provided, it was only for a limited elite who were going to higher school, and curriculum in the school was mainly for general rather than vocational education. Therefore, as the Japanese economy developed, industrial education and training to produce middle level skilled manpower was recognized as vital for Japanese industrialization. In the early 1890s, just before the Japanese industrial revolution, the Meiji Government institutionalized two types of secondary level vocational schools, that is, JITSUGYO HOSYU GAKKO (Industrial Supplementary Schools) and TOTEI GAKKO (Apprentice Schools), and enacted the National Treasury Subsidy Law for Vocational Education Expenses to give financial support to these schools.

The industrial supplementary schools, which were institutionalized in 1893, were defined as "places where necessary knowledge and skills are taught as a supplement to primary school education to pupils who will work in various industries" (Regulation of the School, Article 1). The schools accepted mainly primary school leavers and gave them industrial education and training for three years. Subjects included a moral course, reading, writing, arithmetic and other subjects related to their occupation. The schools aimed at producing semiskilled manpower for various industries. As shown in Table II-4, the number of schools steadily increased until they were converted into youth schools in 1935.

The apprentice schools, which were institutionalized in 1894, were defined as "places where necessary subjects for craftsmen are taught" (Regulation of the School, Article 1). The schools aimed at giving systematic vocational education and training in a school, instead of apprenticeship in a factory. The schools, however, failed to develop as training institutes and were abolished in 1920. Kimura mentioned three reasons why the schools failed. First, 144 schools out of a total of 238 apprentice schools were women's schools, and their programs contained little technical education for industrialization. Second, most of the schools which tried to modernize traditional local industry failed to attract students, who were interested in modern technical engineering. Third, although the schools were expected to combine theory and practice of industrial education and training, this task proved too heavy for them.[11]

Table II-4. INDUSTRIAL SUPPLEMENTARY SCHOOLS

Year	No. of schools	No. of teachers	No. of students
1894	19	26	1,117
1895	55	71	3,327
1905	2,746	1,272	121,502
1915	8,908	2,815	498,178
1925	15,316	9,821	1,051,437
1935	16,678	68,179	1,902,157

Source: National Institute for Educational Research, 1977.

The Ordinance of Industrial Schools, which is one of the most important laws on industrial education and training in the Meiji period, was enacted in 1899. The purpose of the Ordinance was to develop industrial education and training at the secondary level in order to meet the demand for middle level skilled workers as a result of the Japanese industrial revolution after the Sino - Japan War (1894-1895). The Ordinance classified five basic industrial schools, that is, Engineering School, Agricultural School, Commercial School, Mercantile Marine School, and Industrial Supplementary School. The Apprentice School was regarded as a kind of Engineering School. Table II-5 shows the development of industrial schools, excluding the industrial supplementary schools.

Table II-5. INDUSTRIAL SCHOOLS

Year	No. of schools	No. of teachers	No. of students
1875	1	1	15
1885	26	102	990
1895	54	397	5,015
1905	270	2,633	29,959
1915	547	4,962	50,315
1925	797	10,643	50,315

Source: National Institute for Educational Research, 1977.

2. System for Acquiring Skills for High Economic Growth in the Post-War Period

Japan's rapid reconstruction after the Second World War and subsequent high rate of economic growth are often regarded as a "miracle". Japan's average growth rate of GDP was 10.4% between 1960 and 1970, and 4.6% between 1970 and 1982, these figures are the highest among the advanced industrial market economies. Japan's share of GNP in the world, except the USSR, has increased from only 2.9% ($44 billion) in 1960 to 11.1% ($1.1 trillion) in 1980, which is second only to the USA.[127] Education and training have played an important role in this remarkable economic growth. The World Development Report 1980, for example, says:

> The outstanding growth of Japan ... probably could not have been achieved without their distinctively early mass literacy and numeracy, which (together with land reform, more advanced education and good economic management) contributed to increased agricultural productivity, to the expansion of labor-intensive manufacturing and exports, and to their remarkable ability to adapt to changes in technology and world demand. (pp. 37, 39).

The purpose of this section is to examine the kind of education and training system, especially for the acquisition of skills, that has been provided for this high economic growth. Although education and training in contemporary Japan are conducted by thousands of schools and training institutions, we will divide them into two categories: (a) the program administered by the Ministry of Education; and (b) the program administered by the Ministry of Labor. This is not a distinction between general education and vocational training, since the former includes both general and vocational education, while the latter is mainly concerned with vocational training.

(a) The program administered by the Ministry of Education

After the Second World War, Japan developed a completely new educational system. Diagram II-2 shows the present school system administered by the Ministry of Education, and Table II-6 shows the number of schools, their students, and the rates of enrollment.

Diagram II-2: Present School System

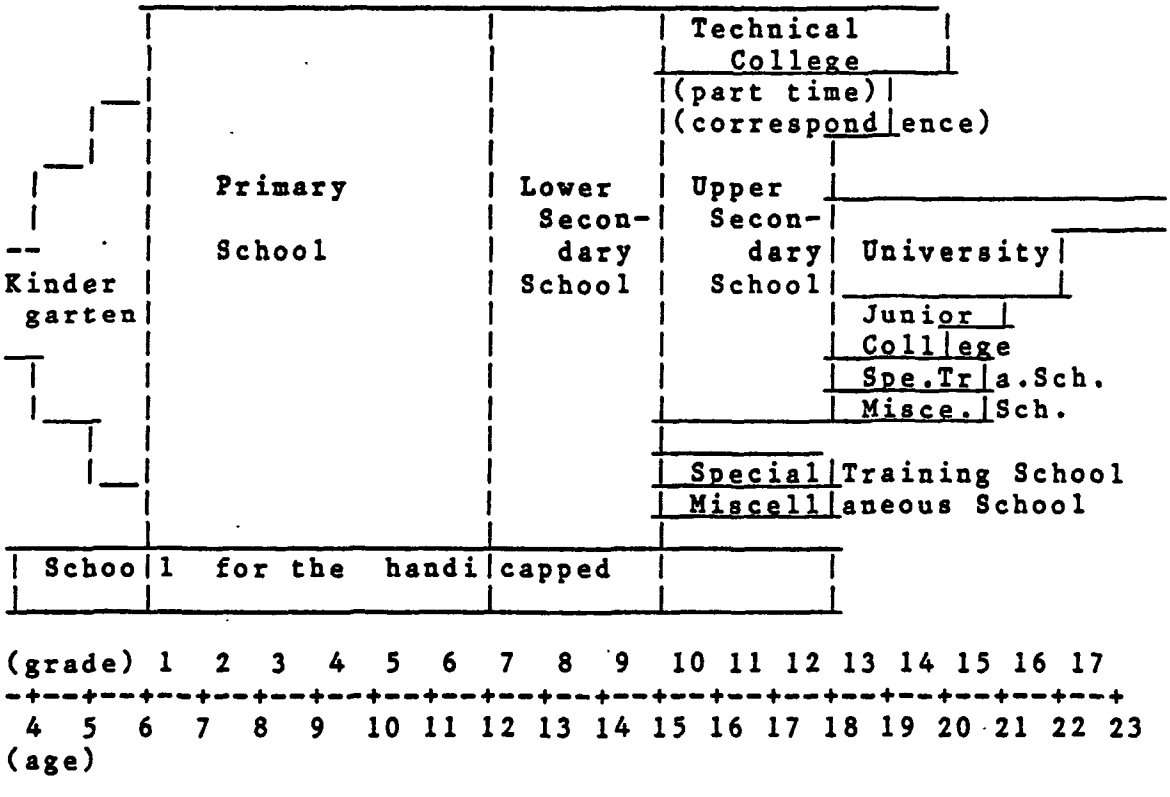


Table II-6. NUMBER OF SCHOOLS, STUDENTS AND RATES OF ENROLLMENT
(as of May 1983)

Classification	Total	National	Local	Private
Kindergarten	15,189	48	6,226	8,915
Primary school	25,045	73	24,804	168
Lower secondary school	10,945	77	10,314	559
Upper secondary school	5,369	17	4,081	1,271
Technical college	62	54	4	4
Junior college	532	36	51	445
University	457	95	34	328
(graduate school)	(268)	(82)	(22)	(164)
Special Training School	2,860	185	160	2,515
Miscellaneous school	4,674	9	135	4,530
Schools for the handicapped	895	45	833	17
Total	66,028	639	46,642	18,752

Unit: thousand (%)

Classification	Total	(rate)	Male	(rate)	Female	(rate)
Kindergarten	2,193	(63.8)	1,119		1,074	
Primary school	11,739	(99.9)	6,014		5,726	
Lower secondary school	5,707	(99.9)	2,925		2,782	
Upper secondary school	4,716	(94.0)	2,375	(92.8)	2,341	(95.2)
Technical college	47		46		1	
Junior college	379		38		341	
University	1,834	(35.1)	1,419	(37.4)	415	(32.2)
(graduate school)	(62)	(4.9)	(54)	(5.8)	(8)	(2.1)
Special Training School	512		203		309	
Miscellaneous school	606		311		295	
Schools for the handicapped	94		58		36	
Total	27,827		14,508		13,320	

Note: The figures for upper secondary school include technical colleges. The figures for university include junior college, and also students who do not go to university or junior college immediately from upper secondary school.

Source: Ministry of Education, 1984.

As shown in the diagram, at present Japan has a so-called 6-3-3-4 system (six years for primary school, three years for lower secondary school, three years for upper secondary school, and four years for university). The first nine years of education are compulsory. Upper secondary school is divided into a general course and a vocational course. The 12 years of general education in primary school, and lower and upper secondary school, and the four years of higher level specialized education in university are regarded as the "main stream" of education. With regard to vocational education and training, however, other types of schools such as vocational courses in upper secondary schools, technical colleges, special training schools, and miscellaneous schools also play a very important role. In the following section, we will briefly examine each of these schools from the viewpoint of skill acquisition.

Primary and Lower Secondary Schools (SHOGAKKO and CHUGAKKO)

As mentioned above, at present Japan has nine years of compulsory education at primary and lower secondary level, and enrollment rates are almost 100%. Table II-7 shows the standard number of yearly teaching hours at primary and lower secondary school. More than 60% of teaching hours are spent on general subjects such as "Japanese language", "social studies", "arithmetic" and "science" (and "English language" in lower secondary school).

Table II-7. STANDARD NUMBER OF YEARLY TEACHING HOURS

Classification	Primary School (six years)	(%)	Lower Secondary School (three years)	(%)
Japanese language	1,532	(26.5)	455	(14.4)
Social studies	558	(9.6)	385	(12.2)
Arithmetic/Math.	1,011	(17.5)	385	(12.2)
Science	558	(9.6)	350	(11.1)
Music	418	(7.2)	175	(5.6)
Drawing and handicrafts	418	(7.2)	-	-
Arts	-		175	(5.6)
Homemaking	140	(2.4)	-	-
Industrial arts and homemaking	-	-	245	(7.8)
Physical education (and health)	627	(10.8)	315	(10.0)
Moral education	209	(3.6)	105	(3.3)
Special activities	314	(5.4)	210	(6.7)
Elective subjects, etc.	-	-	350	(11.1)
Total	5,785	(100)	3,150	(100)

Source: Ministry of Education, 1981, p. 22

In regard to education related to skill acquisition, "drawing and handicraft" and "homemaking" in primary school, and "industrial arts and homemaking" in lower secondary school should be mentioned, although they account for less than 10% of all teaching hours. These subjects aim to give pupils basic skills to enable them to carry out planning, manufacturing, and maintenance activities.[13]

Upper Secondary Schools (KOTOGAKKO or KOKO)

Although upper secondary school is not compulsory, the rate of enrollment has already reached 94% (Table II-6). The courses at upper secondary schools are roughly classified into two groups: the general education course and the vocational education course. In both of these courses, the minimum credits required for graduation are 80, (one credit consists of 35 unit hours in the course of one school year, one unit hour being 50 minutes of teaching) and students in vocational courses must obtain at least 30 credits in the relevant vocational subject areas such as Agriculture, Fisheries, Engineering, and Commerce.[14] Table II-8 indicates the number of courses and students at upper secondary schools.

Table II-8. UPPER SECONDARY SCHOOLS

Courses	No. of Courses	(%)	No. of Students ('000)	(%)
General	4,724	(55.8)	3,322	70.5)
Agriculture	494	(5.8)	154	(3.3)
Engineering	842	(9.9)	462	(9.8)
Commerce	1,218	(14.4)	558	(11.8)
Fisheries	54	(0.6)	16	(0.3)
Home economics	733	(8.6)	139	(3.0)
Nursing	162	(1.9)	27	(0.6)
Others	250	(3.0)	33	(0.7)
Total	8,477	(100)	4,711	(100)

Source: Ministry of Education, 1984

As shown in this table, more than 70% of students in upper secondary schools take general rather than vocational courses. Since vocational course school leavers do not always get occupations in the same industry as that covered by the courses they have studied at school, most of the school leavers start work without any vocational training. Table II-9, which indicates the percentage of occupations of upper secondary leavers classified by their courses in school, clarifies this point.

Table II-9. PERCENTAGE OF UPPER SECONDARY SCHOOL LEAVERS' OCCUPATION

	Special-ists	Office workers	Agric. and fisheries	Plant workers	Other	Total
General	0.8	15.2	0.3	10.2	16.4	43.6
Agriculture	0.2	0.5	0.8	3.1	2.3	6.9
Engineering	1.1	0.5	0.1	13.5	3.5	18.7
Commerce	0.2	13.9	0.1	2.9	6.7	23.8
Fisheries	0.0	0.0	0.1	0.3	0.3	0.7
Other	0.8	1.3	0.0	1.6	2.6	6.3
Total	3.1	31.4	1.4	31.6	31.8	100

Note: Total number of school leavers is 621,038.

Source: Created from the Ministry of Education, Basic Survey of Schools, 1982

According to the results in Table II-10, only 30% of upper secondary leavers state that their occupation is very or somehow related to the subjects they studied in school. In the case of plant workers (Table II-9) trained school leavers account for only 43% (13.5/31.6) of all leavers in this occupation. In other words, when companies employ upper secondary school leavers as plant workers, 57% of them are not trained for this occupation. In the case of office workers, we get almost the same percentage. This implies that vocational courses at upper secondary schools do not play a significant role in producing skilled manpower, and that general course leavers are trained in a company. We will examine the reasons for this in Chapter II-(3).

Table II-10. RELATION BETWEEN OCCUPATION AND SUBJECTS AT UPPER SECONDARY SCHOOL
%

Very related	9.2
Somehow related	22.7
Rarely related	34.2
Not related	21.8
Don't know	9.2
Other	2.9

Source: Ministry of Education, Report of Industrial Education, in Miyoshi.

Technical Colleges (KOTO SENMON GAKKO or KOSEN)

Technical colleges were inaugurated in 1962 as unique higher educational institutions for science and technology. As shown in Diagram II-2, technical colleges are connected directly to lower secondary schools and give five years continuous education and training. Therefore, in these colleges, students can get higher education immediately after the completion of compulsory education. Compared with the combined school hours of upper secondary school (general course) and university for seven years, Table II-11, technical colleges give less general education, but more specialized education.[15] Technical colleges are therefore more effective, in the sense of the period of skill acquisition, than a combination of upper secondary school and university.

Table II-11. COMPARISON OF TEACHING HOURS

	General education	Specialized education	Total
Upper secondary school and university	4,450 (58.9) /a	3,000-3,200 (41.1) /a	7,450-7,650 (100)
Technical college	2,975 (45.4)	3,640 (54.6)	6,615 (100)

/a These percentages, in parentheses, are based on 3,100 hours of specialized education.

Source: Shimosaka, pp. 75, 76 in the Japanese National Commission for UNESCO, 1972.

Universities and Junior Colleges (DAIGAKU and TANDAI)

Institutions of higher education in Japan comprise universities and junior colleges, together with technical colleges and special training schools (described later). The length of a university undergraduate course is four years for most courses, and six years for medicine and dentistry. Junior colleges, which have two or three year courses, aim at fostering such practical abilities as are required for vocational or daily life. Table II-12 indicates the number of students classified by specialization at universities (undergraduate), junior colleges (undergraduate) and graduate schools. As shown in the table, there were about 2.2 million students at universities and junior colleges in 1983. However, they do not necessarily acquire skills or knowledge directly related to their future occupations. "Humanities" and "Social Science" courses in particular have very little relation to students' future occupations in Japan. With regard to skill acquisition, we should note that the percentage of students in "Natural Science", "Engineering (Industry)", "Agronomics (Agriculture)", "Medicine and Dentistry (Health)" and "Pharmacy" courses is only 30.4%. Table II-13 shows this point more clearly.

Table II-12. NUMBER OF UNIVERSITY STUDENTS CLASSIFIED BY SPECIALIZATION (AS OF MAY 1983)

	University (undergrad.) ('000)	(%)	Junior Coll. (Undergrad.) ('000)	(%)	Graduate schools ('000)	(%)	Total ('000)	(%)
Humanities	244	(14.1)	82	(21.8)	8.7	(14.1)	335	(15.5)
Social science	680	(39.3)	35	(9.3)	6.5	(10.5)	721	(33.3)
Natural science	58	(3.4)	-		6.6	(10.6)	65	(3.0)
Engineering (Industry)	339	(19.6)	20	(5.3)	19.7	(31.8)	379	(17.5)
Agronomics (Agriculture)	60	(3.5)	4	(1.1)	5.5	(8.9)	70	(3.2)
Medicine and Dentistry (Health)	75	(4.3)	19	(5.1)	9.0	(14.6)	103	(4.8)
Pharmacy	41	(2.4)	-		0.5	(0.8)	41	(1.9)
Home economics	32	(1.8)	101	(26.9)	0.3	(0.5)	133	(6.1)
Pedagogy	134	(7.7)	85	(22.6)	3.4	(5.6)	222	(10.2)
Culture	-		8	(2.1)	-		8	(0.4)
Arts	45	(2.6)	20	(5.3)	1.3	(2.1)	66	(3.0)
Others	22	(1.3)	2	(0.5)	0.4	(0.7)	25	(1.1)
Total	1,730	(100)	376	(100)	62	(100)	2,168	(100)

Note: () is a subject in Junior College

Source: Ministry of Education, 1984.

Table II-13. PERCENTAGE OF GRADUATES' OCCUPATION CLASSIFIED BY SPECIALIZATION (as of May 1983)

	Specialists	Teachers	Office workers	Sales workers	Others	Total
Humanities	0.7	2.1	10.3	1.8	0.6	15.5
Social science	1.1	0.6	18.1	11.0	1.6	32.4
Natural science	1.2	0.5	0.2	0.1	0.1	2.1
Engineering (Industry)	14.1	0.2	0.5	0.7	1.0	16.5
Agronomics (Agriculture)	0.1	1.4	0.5	0.4	0.4	2.8
Health	3.2	0.3	0.2	0.1	0.0	3.8
Home economics	2.0	0.6	6.5	0.6	0.3	10.0
Pedagogy	2.6	7.3	2.6	0.3	0.4	13.2
Arts	1.3	0.7	0.2	0.2	0.1	2.5
Others	0.1	0.0	0.7	0.1	0.0	1.0
Total	26.4	13.7	39.8	15.3	4.5	100

Note: The number of total graduates is 427,381.

Source: Created from Ministry of Education, 1984.

We can see from this table that only 18.6% of graduates who majored in natural science, engineering, agronomics, and health, became specialists. The table also shows that 60% of graduates who find occupations work as office workers, sales workers or other nonspecialists. We can assume that this 60% of graduates start working with little or no vocational training for their occupation. They get their training in a company as we will examine in the next chapter.

Miscellaneous Schools and Special Training Schools (KAKUSHU GAKKO and SENSHU GAKKO)

Miscellaneous schools have been traditionally neglected from the mainstream of education. However, from the point of view of skill acquisition, miscellaneous schools play important roles which other formal "schools" cannot fulfill.[16] First, miscellaneous schools offer a wide range of opportunities for skill acquisition. As shown in Table II-6, there are about 4,700 miscellaneous schools, offering various types of courses which cover such areas as home economics, medical care, engineering, commerce, arts and culture, etc. Second, they can quickly respond to the latest needs of vocational training because most of them are privately run and of relatively small size. For example, with the progress of technology in the 1960s, many miscellaneous schools were newly established in the areas of electronics and

computers. Third, many of the courses in miscellaneous schools are closely linked with occupational qualifications and trade skill tests.

In 1976, the School Education Law formally recognized some of the miscellaneous schools as "schools". These are special training schools. In order to be a special training school, each miscellaneous school must enroll 40 or more students and the length of each course must be minimum one year, with 800 or more teaching hours per year. Special training schools can be classified into three types by their courses: upper secondary courses, (KOTO SENSHU GAKKO) for the graduates from lower secondary schools, advanced or college courses (SENMOM GAKKO) for the graduates from upper secondary school, and general courses (SENSHU GAKKO) for other students. As shown in Table II-14, in 1983, there were 2,860 special training schools with 512,180 students. Their role in producing middle level technicians is significant.

Table II-14: SPECIAL TRAINING SCHOOLS

	No. of Schools	No. of students
(Recapitulation)	2,860	512,180
Upper secondary course	416	77,358
Advanced or college course	2,328	385,911
General course	116	48,911

Source: Ministry of Education, 1984.

Expenditure

Lastly, let us briefly examine the educational expenditure for the schools administered by the Ministry of Education. Table II-15 indicates school expenditure classified by type of school. This includes all the expenditures for education at national, public and private institutions. From this table we can observe the following two points. First, the ratio of total expenditure against national income has steadily increased from 5.6% in 1955 to 7.6% in 1978. Second, the share of the expenditure for compulsory education has decreased from 64.0% in 1955 to 55.4% in 1978, and it has been replaced by an increase in the rate of upper secondary school and higher education. This is mainly because the rates of enrollment in upper secondary school and higher education have rapidly increased, although that of compulsory education had already reached 100%.

Table II-15: SCHOOL EXPENDITURE CLASSIFIED BY TYPE OF SCHOOL
(Y billion)

Year	1955	1960	1965	1970	1975	1976	1977	1978 (%)
Kindergarten	2.0	1.7	2.1	2.9	3.8	4.0	4.1	4.1
Compulsory education	64.0	60.2	51.1	53.5	56.1	55.2	55.0	55.4
Upper secondary school	15.7	17.7	21.4	19.0	18.5	18.5	18.1	18.0
Higher education	16.0	17.6	22.2	21.4	19.6	20.1	20.4	20.2
Special tra. sch. & misc. school	2.3	2.8	3.1	3.2	2.0	2.2	2.4	2.2
Total	407	702	1,657	3,237	8,809	9,882	11,220	12,612
Rate against national income	5.6	5.3	6.3	5.3	7.1	7.2	7.3	7.6

Source: Ministry of Education, 1981.

Table II-16 shows school expenditure in 1978 classified by defrayer. The following points should be observed from this table. First, more than 70% of total expenditure is accounted for by the local government and private school, and the share of the national government is less than 30%. The national government pays for more than half of the expenditure for higher education. Compared with expenditures in the Meiji period, the situation appears similar. Second, more than 80% of upper secondary school expenditure is accounted for by the local public entity. This means demand for enrollment in upper secondary schools, where the rate of enrollment reached 94%, has been met by local government financing. Third, it should be noted that 96.6% of the expenditures for special training schools and miscellaneous schools are accounted for by private schools, and 81.4% of the expenditure is paid back by the students. This implies that the cost of acquiring skills in special training schools or miscellaneous schools is more expensive than in other institutions such as vocational courses at upper secondary schools.

Table II-16: SCHOOL EXPENDITURE IN 1978 CLASSIFIED BY DEFRAYER, (%)

	National govt.	Local public entity	School juridical person, etc.	Payment by students
Kindergarten	2.2	37.8	60.0	53.4
Compulsory education	33.0	65.7	1.3	0.9
Upper secondary school	2.4	80.5	17.1	18.1
Higher education	51.7	5.7	42.6	28.2
Special tra. sch. & misc. school	0.8	2.6	96.6	81.4
Total	29.3	53.6	17.1	13.5

Source: Ministry of Education, 1981.

(b) Program Administered by the Ministry of Labor

The main purpose of this section is to examine the present vocational training system regulated by the Vocational Training Law. First of all, it is useful to clarify some differences between the program administered by the Ministry of Education, especially vocational courses in upper secondary schools, technical colleges and special training schools, and that administered by the Ministry of Labor.

First, vocational education and training in the Education Ministry's schools is regarded as only part of the education which aims at the full development of the students' personality (Fundamental Law of Education), whereas the Labor Ministry's institutions aim at the development of the workers' abilities necessary for their occupation (Vocational Training Law). However, their subjects are not completely different, since both of them aim at providing useful skills for students. The Vocational Training Law states that vocational training must be practiced without duplication of school education, but with close relation to it (Article 3). Therefore, we can say that these two programs are different basically in their viewpoints.

Second, although the program administered by the Ministry of Education has almost the same curriculum in any part of Japan, that of the Ministry of Labor has various kinds of courses according to the needs of the regions where the schools are located. The Ministry of Education's curriculum includes more basic and general subjects than the Ministry of Labor's but the latter has more flexibility in its subjects and can more easily meet the demands of the region and of industry.

Third, with regard to the duration of the course, the program administered by the Ministry of Education is for at least one year (for

example, 1-3 years in special training schools, 3 years in the vocational course at upper secondary schools, 5 years in technical colleges). Most of the programs administered by the Ministry of Labor, however, are less than one year.

Fourth, in the case of schools administered by the Ministry of Education, almost all of the students come directly from lower or upper secondary schools. In the case of schools administered by the Ministry of Labor, however, they accept not only young school leavers but also current workers, workers who are out of employment, and those who intend to change their occupation.

According to the Vocational Training Law (first enacted in 1958 and completely revised in 1972), vocational training is basically classified into two types: public vocational training and authorized vocational training in an enterprise. The former is given to job-seekers, such as new graduates, and workers changing employment. The latter is provided by the owner(s) of an enterprise(s) to currently employed workers. We will concentrate on the public type of vocational training here, since the enterprise training is examined in Chapter III-(I). Table II-17 shows the types of vocational training institutions and their training courses.

Table II-17: VOCATIONAL TRAINING INSTITUTIONS AND TRAINING COURSES

	Basic training	Upgrading training	Occupation capability re-develop. training	Instructor training
Vocational Training School	*	*	*	
Junior Vocational Training College	*			
Skill Development Center		*	*	
Institute of Voc. Training				*
Voc. Training School for the Handicapped	*	*	*	

As shown in the table, four types of training are regulated by the Law. Basic training (YOSEI KUNREN) has two course levels: the ordinary

training course, mainly for lower secondary school leavers and the advanced training course, mainly for upper secondary school leavers. Both courses aim to give new school leavers the basic skills and knowledge necessary to be multi-skilled workers. The duration of courses varies from six months to one year, two years, or three years. Upgrading training (KOJO KUNREN) has four types of courses: grade I trade certificate training course, grade II trade certificate training course, supervisory training course and skill updating training course. They are focussed on workers who have already basic skills and knowledge. The skill updating training course, especially, aims at helping them to catch up with technological progress in industries. The duration of the courses is relatively short: 10 hours, 12 hours, 40 hours, or between one and six months. Occupational capability redevelopment training (NORYOKU SAIKAHATSU KUNREN) focusses especially on workers who intend to get alternative jobs for which they are not trained. The duration of the training is for two months, three months, six months, nine months or one year. Instructor training (SHIDOIN KUNREN) aims at providing the necessary skills and knowledge to be a vocational training instructor and is for four years. This training is conducted only by the Institute of Vocational Training.

These four types of vocational training are carried out in the five types of vocational training institutions, namely, vocational training schools, junior vocational training colleges, skill development centers, Institute of Vocational Training, and vocational training schools for the handicapped. Table II-18 indicates the number of institutions and training places. The first four types of institutions are briefly described below.

Table II-18: NUMBER OF VOCATIONAL TRAINING INSTITUTIONS AND STUDENTS IN 1981

	No. of facilities	No. of subjects	No. of training places
Vocational Training Schools	378	2,521	283,122
Junior Vocational Training Colleges	6	34	1,040
Skill Development Centers	2	-	4,620
Institute of Vocational Training	1	15	1,200
Vocational Training Schools for the Handicapped	12	117	2,290

Source: Ministry of Labor

Vocational Training Schools (SHOKUGYO KUNRENKO)

This is the most popular type of vocational training institution. Because most of the vocational training schools are established by the prefectural government or municipal government, they can easily meet local demand for vocational training. They provide basic training for lower and

upper secondary school leavers, and upgrading training and redevelopment training for adults. Vocational training schools managed by the Employment Promotion Project Corporation (EPPC) (an organization established by the national government) are now being converted into junior vocational training colleges or skill development centers.

Junior Vocational Training Colleges (SHOKUGYO KUNREN TANKI DAIGAKU)

Junior vocational training colleges were newly established in 1973 in order to meet manpower demands resulting from the rapid progress of science and technology. The colleges are aimed at providing basic training for upper secondary school leavers and producing technicians who have both skills and knowledge in science and technology. The colleges have an important role in the history of Japanese vocational education and training, because they are the first institutions to try to combine practical skills and scientific knowledge at the higher education level since the Meiji period.[17]

Skill Development Centers (GINO KAIHATSU SENTA)

Skill development centers were established to provide upgrading training and redevelopment training, especially for adults in employment or temporarily unemployed. Although there were only two centers in 1981, many of the vocational training schools managed by EPPC are to be converted into skill development centers within a few years. This is because the main purpose of skill development centers is to help adult workers in employment to catch up with technological progress and the unemployed to get new jobs more easily. The centers are expected to play an important role from now on.

The Institute of Vocational Training (SHOKUGYO KUNREN DAIGAKUKO)

The Institute of Vocational Training was established in 1961 as a center of the whole vocational training system. The main purpose of the Institute is to produce professional vocational training instructors and to carry out research and studies on vocational training. Its activities include international technical cooperation such as providing training courses for instructors from developing countries, and also for Japanese instructors who intend to go to developing countries.

Expenditure

Lastly, let us briefly examine the expenditure on vocational training. Table II-19 shows the national and local budget for vocational training in 1982. "General account" is mainly spent on the prefectural vocational training schools, "labor accident" payment on national vocational training schools for the handicapped, "coal & oil payment" on the training of workers leaving mines, and "employment payment" on other purposes.

Table II-19: NATIONAL AND LOCAL BUDGET FOR VOCATIONAL TRAINING IN 1982
(Y million)

	Management expenses	Personnel expenses	Equipment expenses	Total (%)
National				
General account	5,404	11,142	0	16,546 (17.2)
Employment payment	40,940	1,716	14,732	57,388 (59.6)
Labor accident payment	20	0	990	1,010 (1.0)
Coal & oil payment	20	50	0	70 (0.1)
Subtotal	46,384	12,908	15,722	75,014 (77.9)
Local	8,580	9,666	2,994	21,240 (22.1)
Total	54,964 (57.1)	22,574 (23.5)	18,716 (19.4)	96,254 (100)

Source: Ministry of Labor.

Compared with the school expenditure administered by the Ministry of Education (Tables II-15 and II-16), we can note the following two points from this table. First, the amount of the expenditure for vocational training administered by the Ministry of Labor is far less than that of the Ministry of Education. The former in 1982 was only 0.8% of the latter in 1978. Second, in the case of vocational training administered by the Ministry of Labor, the national budget shares 78% and the local budget 22%, although in the case of the program administered by the Ministry of Education, the national share is only 30% and the local 54%.

3. Academic Qualification Society and Economic Development

Based on the previous examination of the Japanese education and training system in the Meiji and contemporary periods, we will analyze, in this section, the meaning and role of this system in Japanese economic development.

It is important to understand that Japan is a so-called GAKUREKI SHAKAI (academic qualification society). First, in Japan, important factors of one's social life such as wage, promotion and social status are basically determined by one's final academic qualification. Second, the purpose of

one's education is not what one learns but what kind of academic qualfication one gets. Third, almost all members of the society try to take part in the fierce competition to go up the ladder of academic qualification.

Table II-20 indicates the wage differential classified by academic qualification. It is obvious from the table that there are distinctive differentials among the different qualification levels. A university graduate (male) can get Y 127,200 as his starting salary, and Y 262,600 as an average salary of all ages, while a lower secondary school leaver (male) can get only Y 91,000 and Y 204,200 respectively.

Table II-20: WAGE DIFFERENTIALS CLASSIFIED BY ACADEMIC QUALIFICATION IN 1982 (Y'000)

	Starting salary		Average salary	
	Male	Female	Male	Female
University	127.2	119.1	262.6	174.7
Junior college or technical college	111.2	106.1	227.8	143.2
Upper secondary school	103.4	97.5	214.2	132.3
Lower secondary school	91.0	81.3	204.2	116.1
Average	n.a.	n.a.	222.0	130.1

Source: Created from Ministry of Labor, 1983.

Table II-21 indicates the rates of return by educational level in Japan. These data also show that the private rate of return from higher education is 2-3% higher than that from secondary education.

Table II-21: RATES OF RETURN IN JAPANESE EDUCATION

	Data I	Data II
Private		
Secondary education	6.0	5.9
Higher education	9.0	8.1
Social		
Secondary education	5.0	4.6
Higher education	6.0	6.4

Sources: Data I: Psacharopoulos, in World Bank, Education and Income, 1984, p. 18.
Data II: Umetani, in World Bank, ibid, p. 85.

There are many other discriminations based on academic qualification as well as the wage differentials. For example, not only some professional occupations such as doctors and teachers, but also prospective positions in government and enterprises are restricted to university graduates by the written or unwritten codes.

Among university graduates, there is also discrimination based on the name of the university. This is the so-called university nomination system in employing new university graduates. This means that some of the Japanese companies recruit new graduates exclusively from several "prestigious universities." Graduates from other "nonprestigious universities" are not even given the chance to take an interview. Table II-22 shows the percentage of companies which adopt the university nomination system, classified by the size of the companies. From this table, we can gather that the larger a company is, the more it adopts the university nomination system. Only 31% of large companies (more than 5,000 workers) do not use any system of nomination. In spite of such a high rate of nomination, big companies succeed in employing the necessary new graduates from nominated universities. The reason is shown in Table II-23, which shows wage differentials classified by the size of the companies. The average wage in small companies (10-99 workers) is only 70% of that in large companies.

TABLE II-22: UNIVERSITY NOMINATION SYSTEM
(of 1,100 companies in 1975)

Size of Company (No. of workers)	- 99	100 - 499	500 - 999	1,000- 4,999	5,000 -	Average
Nominate both univ. and the department	9.9	12.1	14.4	29.5	32.5	19.1
Nominate only department	21.1	36.7	48.4	43.8	36.4	31.2
Do not have the system	69.0	51.2	37.2	26.8	31.2	40.6

Source: Japan Rekuruto Center, taken from Yakura, 1978, p. 23.

Table II-23: WAGE DIFFERENTIAL INDEX BY SIZE OF COMPANY (1982)
(Manufacturing)

Size of company by no. of workers	10 - 99	100 - 999	1,000 -
Wage index	70.4	78.3	100

Source: Ministry of Labor, 1983.

Therefore, people know that to get a high salary in a big company, they must go to university, especially a prestigious one, and to go to a prestigious university, they must go to a prestigious upper secondary school, to go to a prestigious upper secondary school, they must go to a prestigious lower secondary school, and so on. In order to go up this educational ladder, everybody has to take and pass the very competitive entrance examination at each gateway. (The most important entrance examination is, of course, that to university.) It is reported that pre-pre-kindergarten has failed to devise adequate tests for two years olds and has decided to test their mothers instead.[18] This educational spiral is called "examination hell", in which everybody's future is determined. Thus, the academic qualification society has a sharp pyramid structure, which consists of, from the bottom, lower secondary school leavers, upper secondary school leavers, junior college and technical college graduates, and university graduates. Because the rate of attendance at university has reached 35%, there is also stratification among the universities. Among more than one thousand institutions for higher education in Japan, the University of Tokyo is located at the top of this

pyramid. It is followed by other national and prestigious private universities such as Kyoto University, Hitotsubashi University, Waseda University and Keio University. Many other public and private universities rank after these universities.

In the academic qualification society, this educational ladder through entrance examinations is almost the only channel of social mobility. An OECD educational mission to Japan, therefore, reported that Japan was not an aristocratic society, where one's class and life are determined by one's birth, but a degreeocratic society, where one's class and life are determined by the entrance examination at the age of eighteen. [19]

In the academic qualification society, because the kind of qualification one gets is more important than what one learns in school, every student studies only the subjects related to the entrance examination, namely, general subjects rather than vocational ones. Therefore, the vocational course at upper secondary school is ranked at the bottom of the upper secondary school strata. Table II-24 indicates the change of the rate of attendance at upper secondary school and the share of students between general and vocational courses.

Table II-24: RATES OF ATTENDANCE AT UPPER SECONDARY SCHOOL AND THE SHARES OF GENERAL AND VOCATIONAL COURSES

Year	(1) Rate of attendance	(2) Share of general course	(3) Share of voc. courses	(4) (1) x (2)	(5) (1) x (3)
1955	51.5	59.8	40.2	30.8	20.7
1960	57.7	58.3	41.7	33.6	24.1
1965	70.7	59.5	40.5	42.1	28.6
1970	82.1	58.5	41.5	48.0	34.0
1975	91.9	63.0	37.0	57.9	34.1
1980	94.2	68.2	31.8	64.2	30.0
1981	94.3	69.1	30.9	65.2	29.1
1982	94.3	70.0	30.3	66.0	28.6
1983	94.0	70.5	29.5	66.3	27.7

Source: Ministry of Education.

The table shows that the share of the general course has constantly increased since 1970 (and that of the vocational course has decreased). Furthermore, columns (4) and (5) show the percentages of students of the same age who are enrolled in general and vocational courses. The enrollment rate of the general course has continuously increased from 30.8% in 1955 to 66.3% in 1983. We can safely conclude from this fact that people prefer the general

course to the vocational courses. Table II-25, which shows the percentages of students who wanted or did not want to enter their present course, confirms this conclusion.

Table II-25: STUDENTS' PREFERENCE FOR THEIR COURSES

Course	Male			Female		
	(1)	(2)	(3)	(1)	(2)	(3)
General	73	15	11	81	12	8
Agriculture	37	45	13	29	56	12
Engineering	55	34	11	48	40	11
Commerce	33	56	11	42	49	8
Home economics	-	-	-	35	55	10

Notes: (1) those who wanted to enter present course
(2) those who wanted to enter different course
(3) those who did not mind the course

Source: Ministry of Education, taken from Miyachi.

Vocational training administered by the Ministry of Labor is also not popular among the school leavers. Table II-26 shows the rate of utilization of the places for basic training. As shown in the table, in spite of the reduction of training places, only 70-80% of the places have always been filled.

Table II-26: RATES OF UTILIZATION OF BASIC TRAINING PLACES
(thousand)

	1973	1974	1975	1976	1977	1978	1979	1980
Number of places	59.8	59.9	56.8	56.5	55.9	55.1	52.5	48.6
Number of trainees	47.7	48.3	46.8	46.6	46.1	44.7	43.3	39.7
Rate of utilization (%)	79.8	80.6	82.4	82.5	82.5	81.1	82.5	81.2

As a result of this bias toward general education, about 70% of upper secondary leavers and 60% of university graduates are not trained, when they start working. To get the necesary skills and knowledge for their job they are trained in a company. But, why doesn't the company employ school leavers who have already received vocational training in school? And what role does this educational system play in Japan's economic development? In order to answer these questions, we should note the following two points about the role of the Japanese school system.

First, from what we have observed so far, all pupils and students in Japan have to compete and study general subjects very hard for many years. As a result, a well-educated mass of people with a strong background in general education is produced. They have an advantage, because in a time of rapid technological progress, a deep and wide range of general knowledge is more useful than specific vocational skills, which may soon become obsolete.

Second, the Japanese education system works as a sophisticated device for selection. In the academic qualification society, the name of the university and its department gives little information about what students learned there. However, it indicates the level of their general ability among the whole of society. General ability does not mean specific skills or knowledge but their potential. That is why Japanese companies accept the university nomination system. By employing graduates from "first class" universities, they can expect them to have " first class" general ability and potential. Since Japanese companies adopt a so-called lifetime employment system, what they are most concerned about in employing new graduates is their lifetime potential capability. Once they get a "golden egg", as long as they foster it properly, it can be expected to be a " golden hen" in the future (We will examine how they foster it in the next chapter).

Of course, the academic qualification society has brought about a serious social problem named the "diploma disease" by Dore, but generally speaking, nothing seems to have changed so far.

> "The system works well enough ----; provided one thinks of it as an enormously elaborated, very expensive intelligence testing system with some educational spin-off, rather than the other way round. One suspects that Japan's more conservative leaders, though they are prepared to shake their heads over the system with those who deplore it, are secretly well satisfied. The examination hell sorts the sheep from the goats; a man who can't take the psychological strain would be no use anyway. If you need convincing of the virtues of meritocracy - of getting the top brain in the top place - look, they would say, at our economic growth record". (Dore, The Diploma Disease, pp. 48-50)

Part of Japan's economic growth is sustained by this examination hell.

CHAPTER III

THE ROLE OF COMPANIES IN THE UPGRADING AND UTILIZATION OF MANPOWER

1. Education and Training in a Company

This section aims at examining the in-company education and training system.[20] As indicated in Table III-1, 85% of the Japanese labor force is engaged in the private sector of secondary and tertiary industries, and they produce more than 90% of total GDP. Manufacturing industry employs 24% of the labor force and produces 30% of GDP. Since most of the labor force is working in companies, it is meaningful to examine their education and training system in order to understand the role of manpower in Japan's economic development. In the following we will first briefly look at: (a) government policies for skill acquisition in a company, then, examine (b) the education and training system in a company.

Table III-1: DISTRIBUTION OF LABOR FORCES AND GDP

	Labor forces (1980) %	GDP (1982) %
Primary industries	10.9	4
Secondary industries	33.6	42
(manufacturing)	(23.7)	(30)
Tertiary industries	55.4	54
(public sector)	(3.6)	(n.a.)
Total	100	100

Note: Total number of the labor force is 55,811,000 and it includes "others". Total amount of GDP is $1,061 billion.

Source: Ministry of Labor, World Development Report, 1983.

(a) Government Policies for Skill Acquisition in a Company

The Vocational Training Law, which represents the Government's vocational training policies has two origins, namely, skilled workers training and vocational guidance.[21]

The Government began to be concerned about in-plant skilled workers training in the late 1930s, mainly because of the military requirement. In

1939, the ordinance of skilled workers training in factories and workshops was enacted,and large factories were obliged to train skilled workers with a government subsidy. Although the law was abolished at the end of World War II, the idea of in-plant skilled workers training was retained in a newly enacted Labor Standard Law of 1947. It is important to note that the Labor Standard Law regulated in-company vocational training from the viewpoint of criticizing apprenticeship. This is because in the pre-war period, there was severe exploitation of young workers under the name of apprenticeship. Therefore, the Law aimed to establish a modern skill acquisition system in a company. This is the origin of authorized vocational training in an enterprise(s) regulated by the present vocational training law.

Another origin of the present vocational training policies is vocational guidance which started in the 1920s. In order to cope with the unemployment problem, the Government established vocational training institutions, since there was a shortage of skilled workers even at a time of mass unemployment. In 1947, after World War II, the Employment Security Law was enacted to give the unemployed vocational training in public institutions. This has developed into the present system of public training institutions which we examined in Chapter II-(2)-(b).

These two training programs, namely, skilled workers training based on the Labor Standard Law, and vocational guidance based on the Employment Security Law, were unified into the Vocational Training Law in 1958, just before Japan started its high economic growth (the Law was completely revised in 1969 in order to meet Japan's rapid economic development). The Law requires the Minister of Labor to prepare the basic scheme of vocational training which indicates the fundamental direction of the policies for vocational training and skills certification (Articles 5), and each prefecture governor is to prepare the prefectural scheme of vocational training based on the basic scheme (Article 6).

The first and the second basic scheme based on the revised Vocational Training Law were planned for 1971-75 and 1976-80 respectively, and the third scheme (for 1981-85) is now being enforced. The aims of the present basic scheme of vocational training, which is subtitled "Preparation for career training system",are: First, basic vocational training should be provided for young persons who are going to start working, according to their ability and aptitude. It is necessary to strengthen the relation between school education and public vocational training. Second, training for currently employed workers should be strengthened, because we can expect structural change in industries, technological innovation, extension of working career and demand for self-development, etc. In order to cope with this situation, education and training organized by employers has to be developed, and supported by public vocational training. Third, occupational capability redevelopment training should be provided, especially for persons leaving and changing occupations and women intending to work. Fourth, the evaluation system for vocational capability should be provided according to each stage of the working career, and the skill certification system must be expanded. Fifth, Japan should play an important role in international technical cooperation through vocational training.

Within this comprehensive scheme, we can observe the concerns in the second and third points corresponding with the two original purposes of vocational training policies mentioned above. We shall focus on the second point, namely, goverment policy for authorized in-company vocational training. (We have already examined vocational training in the public institutions in the previous chapter.)

The Vocational Training Law regulated that prefectural governors can authorize vocational training conducted by employers, their association, juridical persons, or trade unions, when they meet the prescribed standard (Article 24), and authorized employers or associations can establish vocational training schools, junior vocational colleges or skill development centers (Article 25). The national and prefectural governments are required to provide various types of assistance and incentives for both employers and employees undertaking authorized in-company vocational training. The assistance and incentives include: traineeship loan, training allowance for the unemployed, financial assistance to smaller enterprises with less than 300 employees (in retail and services less than 50, and in wholesale less than 100), professional advisory and institutional services, incentive grant for paid educational leave, etc. [22] In 1981, Y 2,092 million was subsidized for managerial expenses in 812 authorized in-company vocational training schemes, Y 186 million for 14 vocational training institutions, and Y 172 million for 199 items of vocational training equipment.[23] Although, compared with the government expenditure on school education (Table II-14), these amounts are very small, it should be noted that the Government gives private companies financial assistance in order to promote vocational training.

Authorized in-company vocational training is performed by single enterprises or an association of enterprises. The former is implemented by relatively large companies, and the latter by relatively small companies. Table III-2 indicates the number of authorized in-company vocational training institutions and the number of employers organizing the training institutions. From this table, we can observe the following points. First, the percentages of the number of single employers, which are relatively big enterprises, are only 0.2-0.3%. However, they share 26-28% of the total authorized vocational training institutions. Second, 99.7 or 99.8% of employers who organize authorized vocational training institutions are performing the training as associations. This fact implies that almost all enterprises which use the authorized in-company vocational training system, are relatively small companies.

Table III-2: AUTHORIZED IN-COMPANY VOCATIONAL TRAINING INSTITUTIONS

	1978	1979	1980	1981
No. of Employers				
Single	262	257	263	305
	(0.3)	(0.2)	(0.2)	(0.2)
Association	99,425	143,682	152,581	179,091
	(99.7)	(99.8)	(99.8)	(99.8)
Total	99,687	143,939	152,844	179,396
No. of Institutions				
Single	262	257	263	305
	(28.2)	(25.9)	(26.5)	(28.3)
Association	667	734	730	771
	(71.8)	(74.1)	(73.5)	(71.7)
Total	929	991	993	1,076

Source: Ministry of Labor.

It is important, however, to note that the total number of enterprises in Japan was more than 5.8 million in 1978. Therefore, the percentage of enterprises which have authorized in-company vocational training institutions individually or as an association is only 1.7% of all enterprises. Almost all companies are performing employees' training in another way, rather than using the authorized vocational training system. We will examine this in the next section.

(b) Education and Training System in Japanese Companies

Although the purpose of this section is to examine the in-company education and training system, it is important, first of all, to clarify the difference among companies. Roughly speaking, Japanese companies are classified into two groups by their size, namely, large companies, and small and medium companies. According to the Fundamental Law of Small and Medium Enterprises, small and medium companies are defined by the number of employees or the amount of capital. In the case of manufacturing business, for example, small and medium companies are defined as those with less than 300 employees or less than Y 100 million of the capital. Table III-3 indicates the share of large and small and medium enterprises classified by industries. From this table, we can observe that more than 99% of enterprises are small or medium companies in any industries. Although in the following part of this paper, we will mainly concentrate on companies in the manufacturing industry, it is

important to note that the number of manufacturing companies shares only 14.4% of all companies (in terms of the numbers of workers, it shares 29.6%).[24]

Table III-3: SHARE OF THE NUMBER OF LARGE COMPANIES AND SMALL AND MEDIUM COMPANIES

	Small and Medium (%)	Large (%)	Total No.	(%)
Mining	99.5	0.5	6,817	(0.1)
Construction	99.9	0.1	495,345	(8.5)
Manufacturing	99.5	0.5	841,132	(14.4)
Retail, wholesale	99.6	0.4	2,865,596	(49.0)
Finance, insurance	99.5	0.5	75,261	(1.3)
Real estate	100.0	0.0	213,331	(3.6)
Transport, etc.	99.5	0.5	115,096	(2.0)
Electricity, gas, etc.	97.5	2.5	5,305	(0.1)
Service	98.6	1.4	1,231,708	(21.1)
Total	99.4	0.6	5,849,591	(100.0)

Note: Small and Medium means companies with less than 300 employees except wholesale (less than 100), retail (less than 50) and service (less than 50).

Source: Prime Minister's Office.

Table III-4 shows shares of the number of businesses, number of workers, amount of gross and net product among small, medium and large companies in manufacturing industry. From this table, we can observe the following points. First, although the number of large companies is only 0.5% of all companies, they produce nearly half of the products. Second, although small companies share 87.2% in number, their share of gross product is only 12.6%. These differentials among companies affect their in-company education and training performance.

Table III-4: SHARES OF MANUFACTURING COMPANIES CLASSIFIED BY SIZE

Size by number of employees	Small (- 19)	Medium (20-299)	Large (300 -)	Total No./Yen
		(%)		
No. of companies	87.2	12.3	0.5	841,132
No. of workers	(-----73.5 ------)		26.5	12,509,000
Amount of gross product	12.6	40.1	47.3	Y 162 trillion
Amount of net product	16.1	41.0	42.9	Y 56 trillion

Source: Prime Minister's Office (first two rows), Ministry of International Trade and Industry (last two rows).

Table III-5 shows the difference in education and training performance between large enterprises, and small and medium enterprises. We can observe from this table that 42% of large companies have regular and systematic education and training programs, while in the case of small and medium companies, only 6.3% have them. This is mainly because of the difference of financial capability of education and training.

Table III-5: EDUCATION AND TRAINING PERFORMANCE IN MANUFACTURING COMPANIES IN 1979

	Large (%)	Small & Medium (%)
Regular and systematic	42.0	6.3
Systematic training as necessary	47.8	39.0
Support for individual training	5.6	28.5
Not systematic, obtain by experience in job	3.5	25.3
Others	1.0	1.0

Source: Small and Medium Enterprise Agency, 1980.

Table III-6 indicates the index of the expenditure for education and training per worker classified by the size of company. It is obvious from this table that the smaller companies are, the less they spend for employees' education and training. Small companies which have between 30 and 99 workers

can spend only 20.4% of the amount spent by large companies which have more than 5,000 workers for workers' education and training. Although we will examine the system of in-company education and training in the following part of this section, it is important to remember the differentials among companies that we have observed so far.

Table III-6: INDEX OF EXPENDITURE PER WORKER FOR EDUCATION AND TRAINING

Size of company	30-99	100-299	300-999	1,000-4,999	5,000
Index	20.4	31.2	52.5	61.0	100

Source: Small and Medium Enterprise Agency, 1983.

First of all, it is important to note the following three points about the education and training system in Japanese companies. First, the system covers almost all levels of employees in a company, from blue collar workers to white collar workers, new employees to old employees, clerical staff to general managers. Second, under the lifetime employment system in Japan, this means a lifetime education and training system for all workers. All employees in a company continuously take various types of education and training at each stage of their working career until they retire. For the company, this system means that education and training for employees are a long-term investment in the future development of human resources. Third, Japanese companies use the term of "education and training" in a broad sense. For example, when some of the managers state that a company is DOJO (literally, traditional training place where one practices the way of martial arts) of life, it means every activity in a company is a part of education and training for employees.[25] Concretely speaking, they include not only on-the-job training and study seminars, but also formal and informal meetings at any level, company communications, purchasing specialized magazines, moral stories from the president, and private counseling, etc. Even recreation such as parties, festivals and short trips organized by a company are sometimes regarded as a part of education and training.

Let us start by looking at the main method of education and training in companies. Tables III-7 and III-8 show the methods of education and training for managers and employees respectively, in manufacturing industry.

Table III-7: METHODS OF SELF-DEVELOPMENT FOR THE MANAGEMENT

	Large (%)	Small and Medium (%)
Reading special newspapers and magazines, watching TV etc.	72.2	59.0
Attending various study seminars	78.1	58.0
Having study meeting with other employers in the same business	38.0	36.5
Taking consultation from specialists	32.4	31.9
Attending special educational institutions	10.2	6.5
Others	4.3	2.6
Do not do anything	5.6	11.8

Note: Because of multi-answers, total is not 100%.

Source: Small and Medium Enterprise Agency, 1983.

Table III-8: METHODS OF EDUCATION AND TRAINING FOR EMPLOYEES

	Large (%)	Small and Medium (%)
On-the-job education and training	87.0	82.8
Attending study seminar in public training institutions	53.9	41.1
Attending seminar in a company	73.5	36.5
Attending study seminar in private training institutions	64.8	28.3
Having study seminar with other companies in the same business	8.4	17.9
Working temporarily in the related companies	15.7	16.2
Attending formal schools such as university and special training schools	29.8	4.6
Others	2.7	0.6
Do not do anything	0.6	1.0

Note: Because of multi-answers, total is not 100%.

Source: Small and Medium Enterprise Agency, 1983.

The differences between large, and small and medium companies are mainly derived from the differentials of financial capability of companies as we examined before (Table III-6). We should also, however, note that there is a difference in the needs of manpower between large companies and small and medium companies. Generally speaking, the former require manpower who have special knowledge and can make managerial policies or planning of R&D, while the latter require those who have leadership in production and sales.[26]

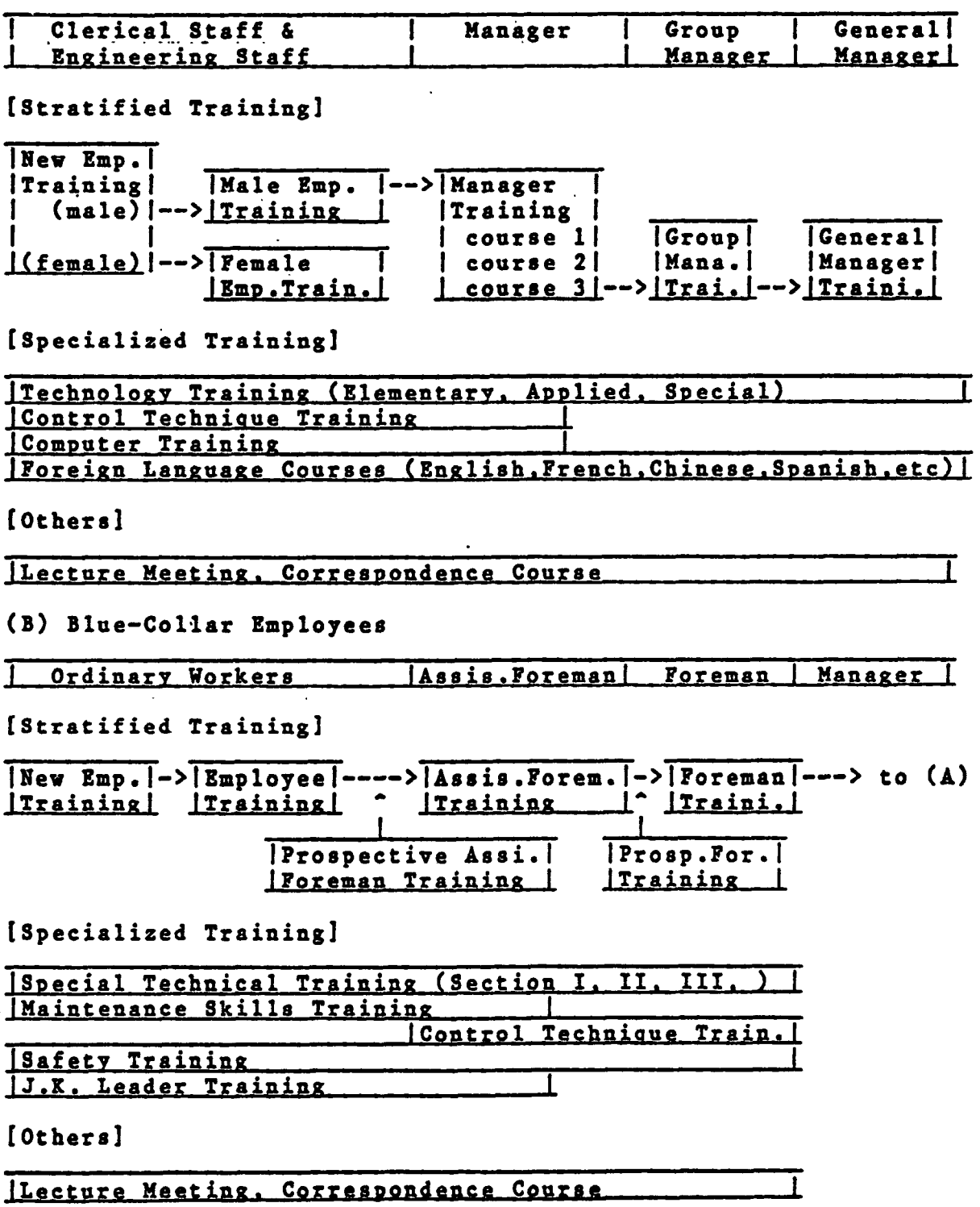
We will roughly classify these methods into on-the-job education and training, and other institutional training, and briefly examine them in the following.

On-the-job education and training is a very important method of employee education and training in a company. It has the following features: First, on-the-job education and training can be performed individually based on one's educational needs and personal character. Second, through on-the-job education and training, one can acquire the knowledge and skills which are directly related to one's job. Third, on-the-job education and training can be performed anytime and anywhere. In the case of on-the-job training in Japanese companies, however, we should not miss another crucial role, namely the formation of human relations in a company. The objectives of on-the-job training are not only teaching some specific skills and knowledge but also building tight human relations between staff and their chief.

Institutional training can be defined as vocational education and training based on a systematic curriculum for a certain period in a certain class.[27] We can classify the institutional training into four types by its organizer: (a) institutional training organized by a company; (b) institutional training organized by an association of companies; (c) institutional training organized by formal educational institutions; and (d) institutional training organized by specialized management institutions. The first type is the most popular method of training after on-the-job training in large companies (Table III-8). The second type is performed mainly by small and medium companies. The third type includes a program to send employees (or employers themselves) to formal educational institutions (for example, universities, special training schools and miscellaneous schools), public vocational training institutions (for example, vocational training schools, and skill development centers) or other public study seminars organized by companies associations, prefectural or municipal governments. The fourth type is performed by specialized organizations such as the Japan productivity centers, and the Union of Japanese Scientists and Engineers. In the following section, we will concentrate on the first type, namely, institutional training organized by a company, since other types of institutional training are usually used as a supplement to the first type.

Diagram III-I shows the in-company institutional training system of Nippon Steel Corporation, which is one of the largest companies in Japan. This is a typical education and training system of large Japanese manufacturing companies. As shown in the diagram, the in-company institutional training system is composed of two types of education and training, namely, specialized education and training, and stratified education and training. The former includes programs for white-collar employees and for blue-collar

Diagram III-1 : In-Company Education and Training System of Nippon Steel Corporation



[source] Nippon Steel Corporation

employees, and both of them are a vertical system in which some special skills or knowledge are accumulatively instructed. Employees in any position take this program according to their needs. For example, computer training, foreign language course, safety training, in the diagram are typical programs of specialized education and training. The latter is a horizontal system, in which all the employees in the same positions get trained.

As we examined in Chapter II-(3), Japanese companies hire new graduates very carefully and selectively, paying attention to their potential rather than their specific vocational skills or knowledge. Since Japanese companies have such a long-term perspective, initial education and training for new employees is very important. Generally speaking, a one or two weeks intensive program is provided for all freshmen and women. Most of the large companies have their own training center, where all trainees stay for the period of training. Although the basic purpose of this orientation program is to give an introduction to the company and a basic knowledge of the business, the most important objective is to motivate new employees to work in that company. The fundamental philosophy of the company, which is usually highly society-oriented, is given in a lecture by the president or the executives, and freshmen are urged to establish an attitude of mind as full-fledged members of society and the company. Other spiritual attitudes such as pride, self-esteem, sense of duty and responsibility are also emphasized. It is also important to note that one of the most required virtues in Japanese companies is a sense of harmony and teamwork, since all employees work in the same company for the rest of their lives. In order to promote this sense, for example, some companies oblige all new employees to stay in the company dormitory for at least their first year. A retired ex-employee of the company becomes the superintendent of the dormitory and takes care of both the private and public life of new employees, and once a year, the president of the company is invited to the dormitory festival.[28]

Stratified education and training programs continue every one to two years until new employees become middle-level manpower. The duration of the program is usually less than one week. The main objective is to promote employees' consciousness and understanding of their role in the company rather than teaching specific knowledge, which is learned in specialized education and training courses or on-the-job training. Together with ordinary lecturing and seminars, several imported methods such as role playing, sensitivity training, transaction analysis, and case method, are often used to provide the opportunities to meet the executives, lecturers, and other employees.

In regard to managers' education and training, the main objective is to understand the whole system of the company from the managerial point of view. They often have informal meetings with managers in other divisions or departments to discuss managerial problems. Another important objective of managers' training is to learn how to guide their staff and raise their morale. They are required to have many formal and informal meetings with their staff. For example, in some companies, general managers have lunch with every staff member on his birthday.[29] They also organize recreational activities for their staff such as sports, hiking and parties. The staff's family are also invited to understand the company. They expect to develop a total human relationship with their staff through these activities. An ideal

manager is a person who can get full credit with his staff, and this is an important objective of managers' education and training, as well as learning some specific knowledge and skills of management.

From the examination so far, we can summarize the following two points. First, major Japanese companies perform long-term and systematic education and training for all employees. Second, the main objectives of education and training are not only learning specific knowledge and skills but also improving employees' moral and human relations. We will examine, in the following section, why Japanese companies can perform such long-term, systematic and human relation oriented education and training. This is closely related to the so-called Japanese management system.

2. Japanese Management and Manpower

A great number of studies about the Japanese management system have already been done both in Japan and abroad. This is mainly because Japanese high economic growth in the 1960s and relatively good economic performance in coping with two oil crises in the 1970s attracted strong worldwide interest in her management style.[30] The purpose of this section is to suggest that Japan's management system for manpower is one of "internal accumulation" rather than of "external procurement".[31] In the following section, we will analyse this point from two aspects of the Japanese style of management: (a) the employment and promotion system; and (b) the wage system.

(a) The Employment and Promotion System

Basic policies of the internal accumulation type of manpower management are, first to hire capable new graduates, second to educate and train them intensively in a company, and third to keep them in the same company for the whole period of their working careers. We have already examined the first and second point in the previous sections. It is important, however, to remember that in hiring new graduates, Japanese companies are concerned about their general ability and potential rather than specific knowledge and skills, and in training them, special emphasis is put on the improvement of human relations as well as teaching vocational knowledge and skills.

The third point is the so-called life-time employment system, which is widely recognized as one of the basic characterictics of Japanese management. However, it is important to note that there is no legal obligation in this system. In other words, life-time employment is merely a custom of Japanese companies and neither employers nor employees have any obligation of life-time employment. Employers can dismiss their workers anytime (although an announcement is required) and workers can also leave their company anytime. Therefore, there must be some reasons why both employers and employees in Japanese companies try to keep the life-time employment system.

Let us first examine the case of employees. First of all, life-time employment gives stability to a worker's life and he can make a steady career plan on the basis of the security of his employment. Aged workers, especially, tend to prefer staying in the same company where they have worked. Second, because Japanese companies adopt a seniority wage system, the longer

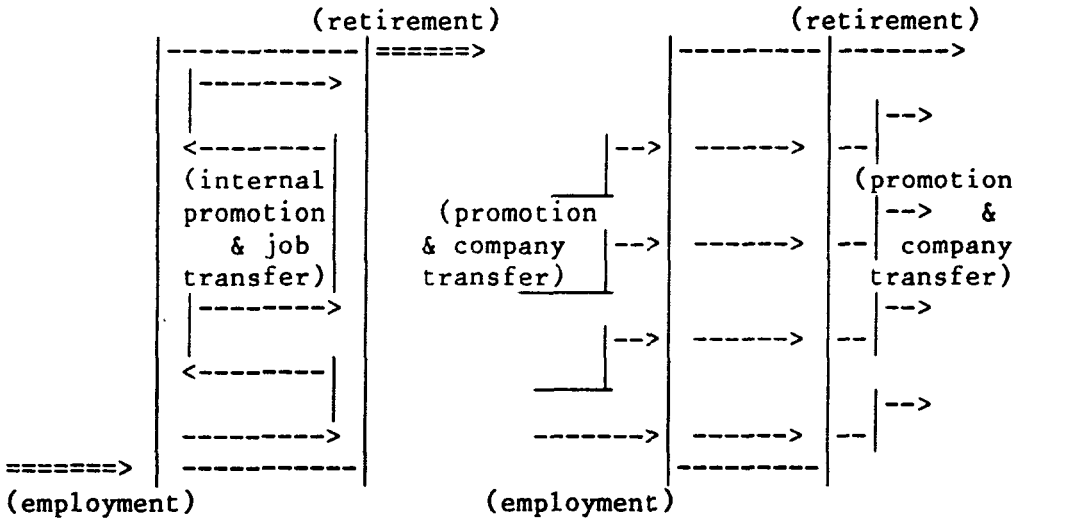
workers stay in the same company, the higher the salary they can get (we will examine the details in the next section). Third, in Japan it is very difficult to leave one company and get a better job in another company, because most of the companies, especially the large ones, hire only new graduates as regular staff. Fourth, traditional ethics in Japanese society require that once one gets a job in a company, one should not easily change to another company.

Employers also have reasons to keep the life-time employment system. First, they can make long-term manpower planning. When they make a large investment in education and training, it is essential for them to be sure that their employees will stay for a long period in the company. Second, by providing many years of education and training, employers can adapt their workers to the tradition of the company, and expect high morale and loyalty. Third, it is difficult to recruit skilled and experienced workers from the labor market outside of the company, since capable workers are trained in a company and stay there. They are also prudent in hiring workers from other companies, since it often causes friction between new and old employees. Keeping harmony among workers is one of the most important roles of management. Fourth, employers also have traditional ethics that require they should not easily dismiss their workers, since both employers and employees regard their company as a kind of family. Employers' paternalism and employees' loyalty are two of the most significant cultural factors of Japanese management, and the life-time employment system is reinforced by this.

Based on this life-time employment system, employees in a Japanese company form an internal labor market inside the company, which is distinguished from the ordinary external labor market. This internal labor market has the following characteristics. First, it is a closed system, in which there is only one entrance and one exit. Employees enter this market at the begining of their working careers and exit at the time of their retirement. Second, it is a competitive market, in which every employee is in a race for promotion. Although seniority and academic qualifications determine the initial conditions in this market, those in similar age and academic qualification groups have equal opportunities for promotion. They are very often transferred among departments during their working careers, and the company gradually examines their merits and aptitudes. The most capable men among the white collar workers, who win the long promotion race in this internal market, become the president or the executives of the company. Blue collars workers also have an opportunity for promotion up to foreman.[32/] This is called the internal promotion system. Third, this internal labor market is flexible in job allocation. The company freely transfers its employees in this market according to its needs. This means that as long as the company accumulates enough human resources, it can flexibly cope with the changing economic situation by mobilizing its own manpower.

Diagram III-2 summarizes these characteristics mentioned above, and compares this system with that of external procurement. It is important, however, to note that these characteristics are only tendencies of Japanese companies and do not exist in a pure sense. Generally speaking, the larger

Diagram III-2 : Internal Accumulation Type and External Procurement Type



the company, the more they have these tendencies. We should also note that the most important factor of this internal accumulation type of manpower management is to keep the mobility of all employees in a company. This means that in Japanese companies, the type of post has a very loose relation with the worker's qualification. In the case of European or American companies, which have an external procurement type of manpower management, job content and responsibility are clearly defined together with qualification for the person who is applying for the post. Therefore, everyone who has this qualification (both inside and outside the company) can apply for the post, and the company hires the person for this particular job. Workers have to get their qualifications at their own expense, say, by going to training school, but if they have the qualifications, they can apply for a post at any company. We may say that these companies employ not the worker himself, but his qualification, namely, his specific vocational knowledge or skills. Therefore, when the post become redundant, the company does not try to transfer the worker into another post, but immediately lays him off.

Japanese companies, however, look at employees' potential and train them as flexible manpower at company expense. Since they pay the cost of their employees' education and training, when the post become unnecessary, they try to transfer the workers into another post. In other words, Japanese companies keep training their workers so that they can mobilize them at any time in any way. Therefore, in Japanese companies most of the posts do not require specific qualifications, and the job content and responsibility of the post are not clearly determined. We may say that none of the newly employed graduates know their specific duties in a company, when they are hired. All

of them are expected to have the potential to do any type of job, and the company trains them to do so. This flexibility of manpower is a strong advantage of Japanese companies.

(b) The Wage System

The compensation system in Japanese companies is also closely related to their employment system. The compensation system consists of a wage system and a fringe benefit system, the former includes basic salary and other allowances. In the following part of this section, we will concentrate on the wage system and examine its characteristics. Table III-9 indicates the composition of wages in Japanese companies. As shown in the table, 83.5% of the fixed wage is a "basic salary". The basic salary is the most fundamental part of the salary, and it is used as a standard to determine other allowances and benefits. The role of the basic salary in Japanese companies is similar to that of the wage rate in European and American companies.

Table III-9: COMPOSITION OF WAGES (1979)

	Yen	%	%
Fixed wage			
Basic salary	144,450	(83.5)	(89.9)
Achievement allowance	3,460	(2.0)	
Service allowance	7,266	(4.2)	
Encouragement allowance	15,050	(8.7)	
Life allowance	1,211	(0.7)	
Subtotal	171,437	100	
Other Wages	19,435		(10.1)
Total	190,872		(100)

Source: Japan Productivity Center.

There are three types of basic salary in Japanese companies, namely, basic salary based on job classification (SHOKUMUKYU), basic salary based on job capability (SHOKUNOKYU) and basic salary based on seniority (NENKOKYU). Table III-10 indicates the percentages of companies which adopt these salary types.

Table III-10: TYPES OF BASIC SALARY

Type A (SHOKUMUKYU)	2.9
Type B (SHOKUNOKYU)	92.6
Type C (NENKOKYU)	11.7
Type A & C	4.9
Type B & C	64.1
Cannot determine	1.9
Others	1.9

[note] : Type A : basic salary based on job classification
Type B : basic salary based on job capability
Type C : basic salary based on seniority

SHOKUMUKYU is the salary which is paid for the job itself. It is assumed that there is a fixed relation between job classification and salary stratification. Therefore, the salary is paid not for the worker but for his/her job. This type of salary is mainly used in European and American companies, which have an external procurement type of manpower policy. In Japanese companies, however, SHOKUMUKYU is not a popular type of salary as shown in the table. This is mainly because Japanese companies have an internal accumulation type of manpower policy, and try to keep the flexibility of their employees. If a worker's salary and his job are tightly linked, it will be difficult to transfer him from one job to another. In order to freely mobilize all employees, their salary must be determined not by their job classification but by other personal factors.

NENKOKYU is one alternative. This basic salary is determined by personal factors such as age, years of employment, academic qualification, sex, etc. Employees' salaries increase with little or no relation to their job classification or their capability, and among those in the same academic qualification and sex group, the older workers earn the higher salary. We may say that this is a seniority wage system in a pure sense. However, this type of salary system has two main problems. First, as the Japanese workers age, the cost of their salaries becomes a heavy financial burden for the companies. Second, it is difficult to reflect a worker's merit in his salary, and it may weaken the morale of capable employees. This is why as shown in the table, only 11.7% of companies adopt only this type of basic salary.

SHOKUNOKYU, basic salary based on job capability, is the other alternative. Job capability means not only an employee's realized capability in his present job but also his potential capability for a future job. This type of salary enables a company to keep a loose relation between an employee's salary and his job, and at the same time, to reflect his merit in his salary. Another advantage of this type of salary is that both the company and the workers are concerned about education and training, because workers can expect a higher salary by developing their potential, and the company can accumulate more capable manpower by providing education and training. However, the most difficult point in this salary type is how to measure a

worker's potential capability. Although elaborate methods of personnel appraisal have been developed, there is still some risk, because once employees feel the appraisal is unfair, their morale is severely distorted. This is why most Japanese companies accept the combination of NENKOKYU and SHOKUNOKYU as shown in Table III-10 (64.1%).

Another important characteristic of the wage system in Japanese company is TEIKISHOKYU (yearly salary increase). This means that every employee's (both white and blue collar workers) salary is raised every year at the same time. The rates of increase are determined automatically by the prescribed table, or by appraising individual capability and achievements, or by a combination of these two methods. As shown in Table III-11, 87% of Japanese companies adopt this system of yearly salary increase. This yearly salary increase can be performed both for SHOKUNOKYU and NENKOKYU but not for

Table III-11: PERCENTAGES OF COMPANIES ADOPTING A SYSTEM OF YEARLY SALARY INCREASE

Size of company by no. of workers	Adopting the system				Not adopt	Total
	sub-tot	A	B	A & B		
30 - 99	86.2	20.3	27.8	38.2	13.8	100
100 - 999	88.6	24.2	20.4	44.0	11.4	100
1,000 -	87.2	23.0	17.8	46.3	12.8	100
Average	86.9	21.4	25.5	40.0	13.1	100

Notes: A : Determined by personnel appraisal.
B : Determined automatically by prescribed table.

Source: Ministry of Labor.

SHOKUMUKYU. As a result of this system, wages among Japanese workers are differentiated by their age and length of working years. As shown in Table III-12, their wages increase constantly until they are fifty five years old, the ordinary retirement age. This is the so-called seniority wage system in Japanese companies. This system has advantages for both workers and the company. For workers, this system guarantees the increase of their salary according to their age, and therefore, enables them to meet their needs at each stage of their life cycle. For companies, this system guarantees the

Table III-12: WAGE DIFFERENTIALS CLASSIFIED BY AGE AND ACADEMIC QUALIFICATION (1982)
(1,000 yen)

Age	White-collar		Blue-collar	
	A	B	C	A
Under 17	-	-	97.0	
18 - 19	111.3	-	108.1	113.6
20 - 24	133.7	141.7	131.5	131.7
25 - 29	171.7	172.2	160.4	164.9
30 - 34	213.2	228.0	187.5	195.5
35 - 39	254.7	285.1	209.4	221.6
40 - 44	288.9	355.8	218.5	234.3
45 - 49	307.6	410.2	219.0	234.1
50 - 54	317.4	450.0	218.0	228.0
55 - 59	290.0	424.1	195.3	202.8
60 - 64	242.4	316.2	156.7	173.8
over 65	200.4	270.8	142.0	155.1
Average	243.8	269.8	199.1	183.8

Note : A : Upper secondary school leavers.
B : University graduates.
C : Lower secondary school leavers.

Source : Ministry of Labor, 1983.

workers' life-time commitment to the company, and it can use this system as an incentive to develop each employee's potential capability.

However, this seniority wage system has been changing recently, mainly because of the increase in cost as the result of workers aging. Some of the companies stop the automatic yearly increase at the middle of their workers' careers, say, at the age of forty, or reduce the rate of increase for the older employees.

3. Workers' Participation and Economic Development

In the previous sections, we analyzed the characteristics of education and training in Japanese companies and their management policies for the utilization of manpower. The purpose of this section is to examine how Japanese companies have been able to develop Japan's economy in this management style. Although Japan's economic success can be explained by reasons other than companies' management policies, (for example, institutional reforms after World War II, appropriate Government leadership, and favorable international environment), we will concentrate on the utilization of manpower in Japanese companies and in particular, workers' participation.

We use the term "workers' participation" in a broad sense, which includes at least the following three points. First, workers' participation means each worker's positive commitment to his/her job. He performs his duty not only because he has to, but also because he can get self-fulfillment through his job. We can expect the best result from a worker when he actively involves himself in his job. Self-esteem and pride in doing his duty are important factors. Second, workers' participation means every worker's voluntary commitment to the job. Not only white-collar but also blue-collar workers should actively participate in production and management of the company according to their duties. Third, workers' participation includes workers' cooperation. An employer cannot achieve his aim without the positive cooperation of his employees nor can employees improve their production and working conditions without their employer's understanding. The more they cooperate, the better results they can get. We may say that participation is the key to utilize human resources, because it motivates workers and enables them to maximize their ability both as individuals and as a group. We may say that one of the most important factors of the success of Japanese companies is this workers' participation. In the following part of this section, we will examine the three aspects of workers' participation, namely, (a) labor participation in management, (b) suggestion system, and (c) company-wide quality control. Finally, we will consider some effects of these management policies and workers' participation on Japanese economic development.

(a) Labor participation in management

Labor participation in management usually includes collective bargaining, labor-management joint consultation, ownership sharing, profit sharing, and workers' participation in the board of executives. Although it is not our purpose to describe all of these systems, we should note the following points as characteristics of Japanese labor-management relations.

Table III-13: NUMBER OF UNIONS AND THEIR MEMBERS (1975)

	No. of Unions	(%)	No. of Members (one thousand)	(%)
Enterprise unions	65,337	(94.2)	11,360	(91.1)
Industrial unions	1,775	(2.6)	682	(5.5)
Craft Unions	720	(1.0)	169	(1.4)
Others	1,501	(2.2)	259	(2.0)
Total	69,333	(100)	12,470	(100)

Source: Ministry of Labor.

First, almost all Japanese companies adopt the so-called enterprise unionism. As shown in Table III-13, 94% of total unions are enterprise unions. Since all the members of a union are, at the same time, employees of the company, the interests of labor and management can be matched relatively easily. After the first oil crisis, for instance, Japanese unions accepted the relatively lower level of wage increase compared with the higher inflation rate. This is mainly because unions adopted a long-term point of view, and gave priority to the security of employment rather than to the increase in wage. As a result, Japan was able to avoid mass unemployment and recover her economy relatively quickly.

Second, the internal promotion system also contributes to labor participation in management. In Japanese companies, it is common for a worker to stay in a company first as an employee, then as a leader of the union, and again become an employee of the company. The post of union leader is considered a good opportunity to learn labor-management relations, and those who have held the post are usually promoted to management positions. The union representative may even become a member of the board of directors.[33]

Third, we should also note the decision-making system of Japanese companies. Since, as we saw in the previous section, each worker's job content and responsibility are not clearly prescribed in Japanese companies, decision-making is performed collectively involving many workers in the company. Under this decision-making system, most of the decision plans are first provided by ordinary employees or lower managers. They have several formal and informal discussions with other managers at the same level whose sectional interest may be related to this decision, and consensus among them is sought. Once they reach consensus, the decision plan is raised to the senior managers' level. They repeat almost the same process and accumulate their ideas and consensus to the plan. In this way, the decision plan goes through a hierarchy of the company up to general manager, executives, or the president, according to the significance of the decision. Although the final decision is taken by the top management, it is the result of many workers' consensus. Especially for lower level workers, this system provides an opportunity to participate in decision-making. Therefore, once a decision has been adopted, all the workers who are familiar with the decision cooperate and the objective can be achieved smoothly.

Fourth, labor participation in management is also supported by the community-oriented mental attitude of Japanese workers and managers. Under the Japanese management system which we have examined so far, both management and workers begin to feel that they are living in the same community and sharing their life and fortune with each other. They often regard their company as a big family and this emotional relationship promotes the sense of participation.

(b) Suggestion System

The suggestion system aims to collect workers' ideas and opinions about their job and company, and improve the company's system and productivity. As shown in Table III-14, almost three quarters of all companies have the suggestion system, and more than 80% of workers are involved in it. In the case of large companies, the corresponding percentage is more than 90%.

Table III-14: SUGGESTION SYSTEM

Size of comp. by No. of Emp.	% of establishments involved	% of workers involved
5000 -	91.9	94.5
1000 - 4999	80.9	83.5
300 - 999	70.8	73.4
100 - 299	66.2	68.5
Total	74.1	82.2

Source: Ministry of Labor, from Inagami, p. 32.

This nationwide suggestion system is coordinated by the Japan Research Association for the Suggestion System, which was established in 1958. Suggestions mainly concern improving work methods, saving materials and energy, improving the working enviroment, and updating equipment and machinery.

For employees, the suggestion system provides opportunities to realize their ideas and improve their working conditions. For employers, good suggestions lead to increased productivity. They can also expect a raise in workers' morale, when their suggestion is adopted. Table III-15 indicates the trend of the suggestion system. We can observe the following points from this table. First, the total number of suggestions has increased from 3.3 million in 1973 to 32.2 million in 1981, an almost ten-fold increase in eight years.

Table III-15: TRENDS OF THE SUGGESTION SYSTEM

	1973	1975	1977	1979	1981
No. of comp.	141	189	229	372	465
Total No. of suggestions (thousand)	3,322	4,942	5,748	13,499	32,223
Ave. No. of sug. per comp. (thousand)	23.6	26.1	25.1	36.3	69.3
Ave. No. of sug. per empl.	4.5	4.7	5.6	7.2	14.2
Adoption rate (%)	68.0	72.3	69.3	70.0	70.0
Implementation rate (%)	92.3	72.5	90.2	93.1	92.6

Source: Inagami, 1983, p. 34.

Second, accordingly, the average number of suggestions per company and per employee have also increased. Third, on average for this period, 70% of all suggestions have been adopted, and the implementation rate has reached 88%.

It is also reported that the yearly cost of suggestion activities was Y 3.77 million on average based on the data of 301 companies, and total economic benefits derived from the suggestions was estimated at Y 34.18 billion. Therefore, the rate of return of the suggestion system ([benefit - cost]/cost) reached 29.1.[34]

(c) Company-wide quality control (CWQC)

The most unique system of workers' participation in Japanese companies is "small group activities." It is said that more than ten million workers are involved in small group activities.[35] This figures implies that almost one fifth of all Japanese workers including all industries organize small groups spontaneouly in their workshop. These small group activities are formed on the basis of the Japanese management system and group-oriented cultural background, and support the vitality of the companies and Japan's economic development.

Although there are various types of small groups such as recreation circles, safety circles, suggestion circles, ZD (Zero defects) circles and JK (JISHU KANRI, voluntary control) circles, etc., we will concentrate on QC

(quality control) circles here, and examine them in relation to CWQC. Quality control was originally one of the management techniques imported from the United States after World War II. However, under the leadership of the Union of Japanese Scientists and Engineers (JUSE), quality control activities have developed into a unique system in Japanese companies, and nowadays the techniques of Japanese quality control are exported worldwide including the United States, China, Korea, etc. Quality control activities have played one of the most important roles in Japan's export promotion.

Ishikawa, one of the most famous experts of quality control, mentions the following six points as the unique characteristics of Japanese quality control: CWQC, education and training for quality control, quality control circle, nationwide promotion activities, evaluation system of quality control, and utilization of statistical skills.[36] We will briefly examine the first three points in the following.

CWQC means at least the following three points.[37] First, everybody in a company participates in quality control activities. Second, every department of the company must participate in the quality control. Quality control can be applied not only for the production line, but also any other department such as planning, sales, personnel management, etc. Sectionalism among departments must be removed. Third, CWQC aims at total quality control of all company activities. It controls not only quality of goods, but also quality of prices, time, and services, etc.

It is said that quality control starts and ends with education, and everyone in a company must be educated in CWCQ. This is partly because quality control is based on statistical analysis of data, and requires that everyone has a basic knowledge of statistics. However, a more important reason for education and training is that quality control is one of the management philosophies to change the quality of the company itself, and therefore, systematic and repeated education is essential to understand and implement this new philosophy. These education and training programs are mainly conducted by the JUSE. Its "basic course" has been held more than sixty times since it was started in 1949. Duration of the course is six months, and in each month there are five days of lectures and case study. Every attendant is required to collect data from his own plant every month, and solve problems by learning basic skills of quality control. Graduates of the course organize a QC program in their own company based on JUSE's program with the assistance of external consultants, and disseminate the knowledge and skills to other members of the company.[38]

According to the Fundamentals of Quality Control Circles edited by the JUSE, a QC circle is defined as "a small group which carries on continuously as a part of company-wide quality control activities, self development and mutual development, control and improvement within the workshop, utilizing quality control techniques with all members participating." Aims of QC circle activities are to contribute to the development and improvement of companies, to create better workshops based on humanism, and to realize the full potential of employees through the development of their ability. As shown in this definition, a QC circle is a small group organized by the spontaneous participation of all workers in a workshop. As shown in Table III-16, the number of

QC circles registered in JUSE reached 115,254 and the number of participants is more than one million in 1980. It is estimated that the number of unregistered circles is almost ten times that of registered circles.

Table III-16: REGISTERED NUMBER OF QC CIRCLES

Year	No. of QC circles	No. of participants
1962	23	-
1964	1,051	-
1966	7,307	90,829
1968	17,416	212,134
1970	33,499	388,543
1972	51,615	551,643
1974	65,477	664,458
1976	78,395	774,012
1978	94,787	903,471
1980	115,254	1,062,759

Source: INAGAMI, 1983, p. 31.

It is remarkable that such a great number of workers are spontaneously forming QC circles. This is mainly because the QC circle aims at self-development and mutual development of workers. Workers participate in the circle not because of the direct economic benefit (most of the circles have a meeting before or after working hours without any payment), but because they can improve human relations in a workshop and get self-fulfillment through their job. QC circles give workers a pride in their job, and develop their potential. It is said that QC circles bring back the essence of working as a human activity to workers who have been alienated in the progress of automation. Although there is some criticism that QC circle activities are another way of exploiting workers, this seems to be from a minority.[39] As long as small group activities such as QC circles are based on workers' spontaneous participation, they will develop further.

Some Effects of Japanese Management Policies

Lastly, let us briefly examine some effects of these manpower management policies in Japan. Apart from economic growth rate and the amount of GDP, we can mention the following points.

First, Japan's rate of unemployment is very low, compared with other countries. As indicated in Table III-17, Japan's rate of unemployment was only 2.4% in 1982, which is the lowest rate in OECD countries. One of the main reasons for this low rate lies in the internal accumulation type of management policies such as life-time employment.

Second, Japan's labor-management relations are relatively stable compared with other countries. Table III-18 indicates the work-days lost in labor disputes in selected countries. As shown in the table, the number of workdays lost in Japan is the lowest both in total days and days per worker. (One thirty second of the number of workdays lost in the U.S.A. and one forty fifth of the number in Italy).

Table III-17: RATES OF UNEMPLOYMENT IN SELECTED OECD COUNTRIES (%)

	1970	1975	1980	1982
Japan	1.1	1.9	2.0	2.4
U.S.A.	4.8	8.3	7.0	9.5
U.K.	3.1	4.7	6.9	12.7
F.R.G.	0.8	3.6	3.0	6.1
France	2.4	4.1	6.3	8.0
Italy	5.3	5.8	7.4	8.9
Canada	5.6	6.9	7.5	10.9

Source: OECD.

Table III-18: INDEX OF WORKDAYS LOST IN LABOR DISPUTES

	No. of workdays lost (average of 1978 - 1980)	No. of employees (1978)	No. of work-days lost per employee
Japan	1.0 (1,096,000)	1.00 (38,760,000)	1.0 (0.028)
U.S.A.	31.9	2.32	13.9
U.K.	15.7	0.59	26.5
F.R.G	1.5	0.57	2.6
France	2.3	0.45	5.1
Italy	16.5	0.37	44.4

Note: ( ) indicate real numbers of Japan.
Source: The Japan Institute of Labor.

Third, Japanese companies can cope with technological innovations without causing serious problems such as unemployment. This is because in introducing new technology, Japanese companies can transfer their employees from obsolete posts to new posts by giving them training. Since workers' employment and wages are secured regardless of their current job, they do not object to the introduction of new technology such as industrial robots. On the contrary, they often welcome it, because they know that as long as they get proper training, they can use this new technology to release them from hard physical work. According to the Government's investigation, the introduction of mechatronics machines resulted in surplus labor in 31% of companies, and reduced working hours per person in 25% of companies. However, only 2% of these companies coordinated their employees. In regard to the wages of workers who were transfered, 12% of companies increased their salary and 87% did not change. Only 1% reduced their salary.[40]

Fourth, the quality of Japanese products has become remarkably good, and therefore, productivity is increased. Table III-19 shows the data presented at the US-Japan semiconductor seminar in 1980. From this table, it is obvious that there is a significant difference in quality between Japanese and American products. Furthermore, quality control leads to reductions in production cost, because it decreases the rate of sub-standard articles significantly. The increase in quality and decrease in cost has resulted in the strong competitive power of Japanese companies in an international market.

Table III-19: COMPARISON OF QUALITY BETWEEN JAPANESE AND AMERICAN SEMICONDUCTORS

Companies	X	Y	Z
J 1	0	0.01	89.9
J 2	0	0.019	87.2
J 3	0	0.012	87.2
A 1	0.19	0.09	86.1
A 2	0.11	0.059	63.3
A 3	0.19	0.267	48.1

Notes X: Rate of sub-standard articles at the time of purchase.
Y: Rate of trouble after 1,000 hours' usage.
Z: Index of the evaluation of quality.
J 1, J 2, J 3 are Japanese companies' products.
A 1, A 2, A 3 are American companies' products.

Source: KARATSU, 1981, p. 7.

Fifth, Japan has achieved a relatively egalitarian income distribution, Table III-20 indicates the income distribution in selected countries. As shown in this table, the share of the lowest 20% of people in Japan is

8.7%, which is the highest rate among the selected countries (and among all the other countries for which the data are available),[41] and the lowest 40% (lowest 20% and second quintile) is also the highest (21.9%). On the other hand, the highest 10% of people share only 21.2%, which is the lowest together with Sweden and Finland (also among the world), and even the highest 20% share the lowest percentage (36.8%). Although the reasons for this egalitarian distribution can be explained by many factors such as institutional reforms and tax policies, the Japanese education and wage system are two important factors. More than 90% of people go to upper secondary school and the rate of attendance at university also reaches more than 30%. Although there is wage differential between upper secondary leavers and university graduates, the gap is not very big (see Table II-20). Furthermore, because of the seniority wage system, every worker's salary is gradually increased according to his age. These systems prevent workers' income from differentiating, together with other institutional mechanisms.

Table III-20: INCOME DISTRIBUTION

	Lowest 20%	Second quintile	Third quintile	Fourth quintile	Highest 20%	Highest 10%
Japan	8.7	13.2	17.5	23.1	36.8	21.2
Canada	3.8	10.7	17.9	25.6	42.0	26.9
France	5.3	11.1	16.0	21.8	45.8	30.5
F.R.G.	7.9	12.5	17.0	23.1	39.5	24.0
U.S.A.	4.6	8.9	14.1	22.1	50.3	33.4
Italy	6.2	11.3	15.9	22.7	43.9	28.1
U.K.	7.0	11.5	17.0	24.8	39.7	23.4
Sweden	7.2	12.8	17.4	25.4	37.2	21.2
Finland	6.8	12.8	18.7	24.9	36.8	21.2

Source: World Development Report, 1984.

CHAPTER IV

CONCLUSION

Lessons from Japan's Experience

This concluding chapter examines what present developing countries can learn from Japan's experience. From the comprehensive range of characteristics and specific conditions of Japanese manpower, eight aspects of her experience are examined, namely, the historical context, appropriate government leadership, primary education, institutional network, utilization of cultural factors, competition and merit system, workers' participation, and human oriented management and production.

Historical Context

Any development is a historical process. Japan's development in the Meiji period was based on that of the Tokugawa period, and the post-war period on that of the pre-war period. It is difficult to transfer a development policy which is based on the specific initial condition of Japan to other countries which do not have the same condition.

For example, when the Meiji government started establishing a new school system, Japan already had a long tradition of institutional education. At the beginning of the nineteenth century, there were more than two thousand small schools called TERAKOYA, in which children from the non-samurai class learned reading, writing and arithmetic. For children from the samurai class special schools called HANKO were provided by each feudal clan. The number of the schools reached 285 in 1871 when the clans were abolished.[42]

Therefore, when the school system started in the Meiji period, most Japanese people already had some idea of schools, and understood the importance of education. In fact, many of the primary schools were transformed from TERAKOYA, and this was one of the reasons why Japan could achieve almost universal compulsory education by the end of the Meiji period (Table II-1).

It is therefore important that a policy be based on each country's initial condition. When a new system is transferred, it is more likely to succeed by utilizing and transforming a traditional system which people are familiar with, rather than by introducing a completely new and strange system.

Appropriate Government Leadership

The experience of Japan demonstrates the influence of Government's role in development. The Meiji government had a strong leadership role in Japanese modernization. However, in the field of education and training, the Government developed and encouraged the autonomy of local governments and participation of the people, and changed from a centralized plan, which was expressed in the Fundamental Code of Education, to a decentralized plan of the Ordinance of Education. Since the local governments were given some degree of autonomy in education, the central government could transfer most of the educational cost to them (Tables II-3 and II-16).

More recently, the basic method to promote in-company vocational training in Japan is to give companies and trainees economic incentives such as financial assistance for in-plant public vocational training, and traineeship loans, and training allowances for the unemployed.

Primary Education

Primary education is one of the most important elements in the formation of manpower. It is widely reported that primary education has great socio-economic effects on development such as increased labor productivity, decreased fertility, and improved health and nutrition.[43] Although producing selected elites as leaders is necessary for a country's development, it must be accompanied by nationwide education. In order to achieve total development

of a nation (and not just the prosperity of a privileged class), it is essential to mobilize all human resources who receive at least primary education. Japan had only one university until the rate of attendance at primary school reached 65%, some thirty years after the Meiji Restoration, and twenty years later, when the rate reached almost 100%, Japan had still only four universities (the rate of attendance was about 1%).

Institutional Network

The development of human resources requires not only manpower planning and policies but also variety and range of institutions to implement them, Japan has established various types of institutions on a nationwide level. In regard to higher education institutions, there are 62 technical colleges, 532 junior colleges, 457 universities and thousands of special training schools (Tables II-6 and II-14), and they produce various types of manpower. Some 378 vocational training schools also play important roles to meet the demand for skilled manpower in local industries. All of these education and training institutions are systematically administered by national and local governments.

Private enterprises also provide education and training institutions. Large companies build their own education and training centers, and small and medium companies provide education and training programs as associations. Furthermore, there are many non-government institutions which contribute to manpower development, the Japan Productivity Center, for instance, is organized as a tripartite institution, namely, by labor, management and academia, and provides education and training programs to promote productivity in Japan.

This nationwide network of education and training institutions enables the formation and utilization of Japanese manpower.

Utilization of Cultural Factors

Cultural factors always play an important role in the transfer of manpower policies. Policies which are alien to a nation's culture will not work in that country, even if they were effective in the original country. On the other hand, policies which are suited to a nation's culture will be accepted, although possibly needing some adaptation.

Japan can also offer good examples of this adaptation of transferred policies. For instance, when Japanese companies tried to change their wage system based on seniority (NENKOKYU), they first introduced the wage system based on job classification (SHOKUMUKYU) from European and American companies. However, since SHOKUMUKYU did not match the Japanese culture and management style, it was eventually transformed into a Japanese style system, namely, a wage system based on job capability (SHOKUNOKYU). Japanese companies succeded in adapting the merits of the new transferred wage system to the traditional way.

Quality control circles are another example. When the technique of quality control was transferred from the United States, it was considered that

quality control was the duty of specialists. However, Japanese companies combined the technique of quality control with the group-oriented culture of Japanese workers, and generated a unique system of QC circles. As we examined in Chapter III-(3)-(c), these QC circles have become very popular in Japan and raised the quality of Japanese products to a high standard in the world.

Competition and Merit System

Competition is a driving force in the development of human resources in Japan: the system of competition derives potential from every competitor. Therefore, it is important to build in the mechanism of competition in manpower development such as the education and promotion systems. To promote competition, we should especially note the following three points. First, every competitor must be given equal opportunities to compete. Fairness is an important basis of competition. Second, winners of the competition must be given appropriate remuneration. The principal of meritocracy is to guarantee the reward for one's merit and efforts. Perverted equality weakens the morale of competitors. Third, the result of the competition should not cause great differentials between winners and losers. Once the losers feel that they cannot catch up with the winners, they lose the will to compete.

Japan has utilized this competition and merit system very well. As we examined in Chapter II-(3), all students in Japan are urged to compete with each other in their learning process, and this results in the formation of well-educated manpower. Competition is also keen in and among companies. The internal promotion system and the SHOKUMUKYU system give employees incentives to compete during the whole of their working careers. Since more than 99% of Japanese companies are small and medium size companies (Table III-3), competition among companies is also keen. We can say that the competition and merit system play a crucial role in the formation and utilization of Japanese manpower.

Workers' Participation

Another driving force of the development of human resources comes from participation. As discussed in Chapter II-(3), workers' spontaneous participation and cooperation in production result in remarkable achievement. Workers' participation should be promoted in various ways so that their potential can be maximized. However, it should be noted that Japan's wide range of workers' participation is based on a nationwide high level of education. Because workers have a strong background of general education, they can voluntarily organize their participation activities such as QC circles. However, a country where the general educational level is not so high as in Japan may not be able to achieve the same results from workers' participation. Therefore, it is important to understand the appropriate level and range of workers' participation in each country.

Human-oriented Management and Production

Finally, the role of human resources in management and production should be examined from Japan's experience. Human resources are not only the means of economic development but also the aim of economic development.

Physical resources can be mainly exploited and utilized for production. However, human resources are not just a means of production. Workers treated like machines will not show high morale, sense of responsibility and spontaneous participation in production. Human resources are more than physical resources. They have infinite potential to develop themselves, and Japanese management focuses on this point of human resources.

Therefore, general education is important as well as training. Although there is no clear distinction, training usually includes the acquisition of specific skills related to one's occupation, and education the development of more general skills. Japanese companies always use the term education (KYOIKU) together with training (KUNREN), such as on-the-job education and training, industrial education and training. This is because they are concerned about not only the improvement of workers' skills but also the total development of their potential.

Japan's human oriented management and production based on a high level of school education result in the full utilization of human resources and economic development.

FOOTNOTES

[1] This system is similar to that of present socialist countries such as China or USSR.

[2] He wrote several books about Japan and his achievements in the College. See H. Dyer, DAI NIPPON, 1905.

[3] Miyoshi points out the following five reasons why the College succeded in producing outstanding manpower: (1) As an environmental condition, there was no tradition of industrial education in Japan and the new system was accepted without any objection. (2) As a political condition, the Meiji Government totally supported the College in its finance and administration. (3) As a managerial condition, Dyer had an excellent vision and plan of the College. (4) As an educational condition, there were many talented and cooperative teachers. (5) As a learning condition, students were intelligent and industrious. See Miyoshi, 1983, p. 17.

[4] Miyoshi, Meiji no Enginia KYoiku, 1983, p. 9.

[5] Passin, Society and Education in Japan, 1965, p. 95. For example, the ministry paid Y 660 per month to Dyer, twenty five years old, when Japanese ministers received Y 500 for their salary.

[6] For example, the University of Tokyo, which was established in 1877 was the only university in Japan until 1897 when Kyoto University was built.

[7] Extracted from Passin, op. cit. pp. 210 - 211.

[8] Dore explains the reason why it was possible in Meiji Japan from the viewpoint of Japanese class structure and historical background. See Dore, 1965, chapter 10.

[9] S. Sumeragi, Nihon Kyoiku Seido no Seikaku, 1970, p. 95 and Passin, op. cit., p. 73.

[10] Passin, op. cit., p. 8.

[11] Kimura, Shokugyo Kyoiku no Kotokyoikuka eno Kizashi, in Miyach & Kurauchi (ed), Koza Gendai Gijutsu to Kyoiku Dai 4-Kan, ShokugYo Kyoiku, 1975.

[12] World Bank, World Development Report 1984.

[13] In regard to technical education in lower secondary schools, see K. Soejima, in The Japanese Commission for UNESCO (ed), Technical and Technological Education in Japan, 1972.

[14] Ministry of Education, Monbusho, 1981, p. 24.

[15] M. Shimosaka, in The Japanese Commission for UNESCO (ed), op. cit.

[16] In regard to miscellaneous schools, see S. Kurauchi, in Miyachi & Kurauchi (ed), op. cit.

[17] Kimura, op. cit.

[18] R.Dore, The Diploma Disease, 1976, p. 49.

[19] OECD, Review of National Policies for Ecucation: Japan, 1971.

[20] We will concentrate on the contemporary period. In regard to the in-company education and training since the Meiji period, see Levine and Kawada, Human Resources in Japanese Industrial Development, 1980.

[21] The concrete meaning of vocational guidance in Japan to assist the unemployed workers to acquire skills by providing vocational training for them.

[22] See Ishikawa, Japanese Industrial Relations Series: Vocational Training, 1981, p. 15, for details.

[23] Ministry of Labor (ed.), Rodo Gyosei Yoran, 1982, pp. 337-338.

[24] The same source as Table III-3.

[25] For example, Nihon Zoki Seiyaku Ltd. See Nihon Kogyo Ginko Chusho Kigyo Senta, Chuken Kigyo no Jinzai Ikusei, 1978, p. 53.

[26] See Small and Medium Enterprises Agency, Chusho Kigyo Hakusho, 1981, p. 314.

[27] Sumiya & Koga, Nihon Shokugyo Kunren Hattenshi: Sengo-hen 1978, p. 336.

[28] Daikure Ltd. See Nihon Kogyo Ginko Chusho Kigyo Centa, ibid, p. 139.

[29] Matsushita Tsushin Kogyo Ltd. See Nihon Kogyo Ginko Chosho Kigyo Senta, ibid, p. 229.

[30] For example, Levine, Industrial Relations in Postwar Japan, 1958; Cole, Japanese Blue Collar: the Changing Tradition, 1971; Dore, British Factory - Japanese Factory: the Origins of National Diversity in Industrial Relations, 1974; Pascale & Atbos, The Art of Japanese Management, 1981; Ouch, Theory Z: How American Business can meet the Japanese Challenge, 1981; Schonberger, Manufacturing Techniques: Nine Hidden Lessons in Simplicity, 1982.

[31] I owe the concept of "internal accumulation type" to Tanaka, Shogai Koyo Kakumei, 1979.

[32] It should be noted that in European and American companies, a foreman is provided among white collar workers.

[33] For example, Sankei Newspaper made an agreement to grant the union the right to send its president to the Board of Directors and to have a say on personnel appointments concerning directors in charge of labor problems. See Japan Institute of Labor, Japanese Industrial Relations Series No.2: Labor Unions and Labor-management Relations, 1979.

[34] Inagami, Japanese Industrial Relations Series No. 11: Labor-management Communication at the Workshop Level, 1983.

[35] Ueda (ed.), Shoshudan Katsudo Suishin Manyual, 1982.

[36] Ishikawa, Nihonteki Hinhitsu Kanri, 1981, pp. 52-53.

[37] ibid. p. 128.

[38] In regard to in-company education for quality controle, see Nikkagiren, Hinhitsu Kanri Vol. 32 No.7, 1981 and Hinhitsu Kanro Vol.33 No. 10, 1982.

[39] For example, Mukaigasa & Togita (ed,), Kojochosa: Kyodai Kojo to Rodosha Kaikyu, 1980.

[40] Small and Medium Enterprise Agency, Chusho Hakusho, 1983, pp. 294-295.

[41] See World Bank, World Development Report 1984, pp. 272-273 for detail.

[42] Yakura, Gakureki Shakai, 1978, pp. 36-37.

[43] For example, see Colclough, Primary Schooling and Economic Development: A Review of the Evidence, 1980.

BIBLIOGRAPHY

ABEGGLEN, J.G., The Japanese Factory: Aspects of its Social Organization, Illinois, The Free Press, 1958.

AMAYA, T., Japanese Industrial Relations Series No. 10: Human Resource Development in Industry, Tokyo, The Japan Institute of Labour, 1983.

AOKI, T., Kigyonai Kyoiku no Hoho to Jissai (Methods and Practices of education in a company), Tokyo, Daiyamondo Sha, 1979.

ASAKA & FURUTANI, Chushokigyo no Hinhitsu Kanri (Quality Controle in Small and Medium Companies), Tokyo, Nikkagiren, 1976.

BLAUG, M., An Introduction of the Economics of Education, London, Penguin, 1970.

COLCLOUGH, C., World Bank Staff Working Paper No. 399, Primary Schooling and Economic Development: A Review of the Evidence, World Bank, Washington D.C., 1980.

COLE, Japanese Blue Collar: the Changing Tradition, 1971.

DORE, R.P., Education in Tokugawa Japan, London, Routledge & Kegan Paul, 1965.

_____, British Factory - Japanese Factory: The Origins of National Diversity in Industrial Relations. London, George Allen & Unwin, 1973.

_____, The Diploma Disease: Education, Qualification and Development, London, George Allen & Unwin Ltd., 1976.

DYER, H., Dai Nippon: the Britain of the East, a Study in National Evolution. London, 1905.

FUKUDA, Y., The Method of Quality Control in Japanese Companies: Its Success and Problems, in Osaka City University Economic Review No. 16, Osaka, 1980.

FUKUZAWA, Y., Gakumon no Susume (An Encouragement of Learning, Tokyo).

FUNABASHI, N., Nihonteki KoYo to Chingin (Japanese Employment and Wages), Tokyo, Hosei Universty Press, 1983.

HANAOKA, M., Nihon no Romu Kanri (Japanese Labour Management), Tokyo, Hakuto Shobo, 1983.

HARA, M., & UCHIDA, T., Koza Gendai Gijutsu to Kyoiku Dai 8-Kan: Gijutsu Kyoiku no Rekishe to Tenbo (Modern Technology and Education Vol, 8: History and Proppect of Technical Education), Tokyo, Kairyudo, 1975.

HOSOYA & SAITO (ed.), Koza Gendai Gijutsu to Kyoiku: Gijutsu to Ningen Keisei (Modern Technology and Education: Technology and Formation of Personality), Tokyo, Kairyudo, 1975.

INAGAMI, T., Japanese Industrial Relations Series No. 11: Labor-management Communication at the Workshop Level, The Japan Institute of Labor, Tokyo, 1983.

ISHIKAWA, K., Nihonteku Hinshitsu Kanri: TQC towa Nanika (Japanese Quality Control: What is TQC?), Tokyo, Nikkagiren, 1981.

ISHIKAWA, T., Japanese Industrial Relations Series: Vocational Training, Tokyo, The Japan Institute of Labour, 1981.

JAPAN EXTERNAL TRADE ORGANIZATION, Now in Japan No. 16: Education in Japan and its Socioeconomic Implications, Tokyo, JETRO, 1975.

_____, Now in Japan No. 17: Employee Education and training in Japanese Enterprise, Tokyo, JETRO, 1975.

JAPAN INSTITUTE OF LABOUR (ed.), Industrialization and Manpower Policy in Asian countries. Tokyo, Japan Institute of Labour, 1973.

_____, Social Tensions and Industrial Relations Arising in the Industrialization Processes of Asian Countries, Tokyo, Japan Institute of Labour, 1979.

_____, Japanese Industrial Relations Series No. 3: Wages and Hours of Work, Tokyo, 1979.

_____, Japanese Industrial Relations Series No. 1: Employment and Employment Policy, Tokyo, 1979.

_____, Japanese Industrial Relations Series No. 2: Labor Unions and Labor-management Relations, Tokyo, 1983.

JAPAN MINISTRY OF EDUCATION, MONBUSHO: The Ministry of Education, Science and Culture Japan, Tokyo, 1981.

_____, Kuni to Chiho no Bunkyo Yosan (Educational Budget of National and Local Governments), Tokyo, 1983.

_____, Monbu Tokei Yoran (Statistics of Education), Tokyo, 1984.

JAPAN MINISTRY OF LABOR, Vocational Training Administration in Japan, Employment Promotion Projects Corporation, Tokyo.

_____, Shokugyo Kunren Kihon Keikaku: Shogai Kunren Taisei no Seibi (Basic Scheme of Vocational Training: Preparation of Career Training System), Tokyo, 1981.

_____, Theory and Practice of Vocational Training in Japan, Islamabad, ILO Asian and Pacific Skill Development Programme, Tokyo, 1982.

_____, Rodo Gyosei Yoran (Labor Administration), Nihon Rodo kyokai, Tokyo, 1982.

_____, Rodokeizai no Bunseki (Analysis of Labor Economy), Tokyo, 1982.

JAPAN SMALL AND MEDIUM ENTERPRISE AGENCY, Chusho Kigyo Hakusho (White Paper of small and medium enterprises), 1980 ed., 1981 ed., and 1983 ed., Tokyo.

JAPANESE NATIONAL COMMISSION FOR UNESCO, Technical and Technological Education in Japan, Tokyo, Japanese National Commission for UNESCO, 1972.

KING, K., New Approach to the Analysis of Scientific, Technological and Skilled Manpower, 1983 (mimeo).

KING, T., World Bank Staff Working Paper No. 402: Education and Income, World Bank, Washington D.C., 1980.

KIYOHARA, M. & ASOU, M., Koza Gendai Gijutsu to Kyoiku Dai 1-Kan: Gendai no Gijutsu Shakai to KYoiku (Modern Technology and Education Vol. 1: Modern Technological Society and Education), Tokyo, Kairyudo, 1975.

LEVINE, S.B., Industrial Relations in Postwar Japan, 1958.

LEVINE, S.B., and KAWADA, H., Human Resources in Japanese Industrial Development, Princeton University Press, 1980.

METCALF, D., The Economics of Vocational Training: Past Evidence and Future Evaluations, World Bank, 1984 (mimeo).

MIYACH, S. & KURAUCH, S., Koza Gendai Gijutsu to Kyoiku Dai 4-kan: Shokugyo Kyoiku (Modern Technology and Education Vol. 4: Vocational Education), Tokyo, Kairyudo, 1975.

MIYOSHI, N., Meiji no Enjinia Kyoiku: Nihon to Igirisu no Chigai (Education for Engineer in Meiji Period: Difference between Japan and Britain), Tokyo, Chuoh Koron Sha, 1983.

MORI, G.(ed.), Nihon no Rodo Kankei Sisutem (Labor Relations System in Japan), Tokyo, Nihon Rodo Kyokai, 1981.

MUKAIGASA & TOGITA (ed.), Kojo Chosa: Kyodai Kojo to Rodosha Kaikyu (Factory Investigation: Big Factory and Proletariat), Tokyo, Shin Nihon Shuppansha, 1980.

NAKATANI, M., Nihon no Chusho Kigyo : Nihon Keizai Tasuha e no Shiten (Small and Medium Enterprises in Japan: Viewpoint to the Majority of Japanese Economy), Tokyo, Dobunkan, 1981,

NATIONAL INSTITUTE FOR EDUCATIONAL RESEARCH, Modernization of Education in Japan, Tokyo, 1977, (mimeo).

NIHON KEIEI KYOKAI (ed.), 79 Nihon no Keisei: Sono Kadai to Tenbo ('79 Japanese Management: the Task and Survey), Tokyo, Nihon Keiei Kyokai, 1979.

NIHON KEIZAI KYOIKU SENTER, Keizai Kyoiku Sanko Shiryo No. 170: Kagaku Gijutsu to Kyoiku (Reference Material for Economic Education No. 170: Science, Technology and Education), Tokyo, Nihon Keizai Kyoiku Senter.

NIHON KOGYO GINKO CHUSYO KIGYO SENTA (ed.), Chuken Kigyo no Jinzai Ikusei: Seikoshita 66 sha no Jireishu (Manpower Formation in Medium Companies: Examples of 66 Companies), Tokyo, Daiyamondo-sha, 1978.

NIHON NORITSU KYOKAI(ed.), Nihonteki Keiei no Shinro (The Course of Japanese Management), Tokyo, Nihon Noritsu Kyokai, 1982.

NIHON SEISANSEI HONBU (Japan Productivity Center), Roshi Hakusho (White Paper of Labor-Management Relations), Tokyo, 1981.

NIKKAGIREN (Union of Japanese Scientists and Engineers), Hinhitsu Kanri (Quality Control), Vol. 32, No. 6, 1981; Vol. 32, No. 7, 1981; Vol. 33, No. 10, 1982, Tokyo.

NISHIKAWA, S., (ed.), The Labour Market in Japan: Selected Readings, Tokyo, The Japan Foundation, 1980.

ODAKA, K., Shokugyo Kunren no Keizaigaku: Joronteki Kosatsu (Economics of Vocational Training: An Introductry Study), in HITOSUBASHI DAIGAKU KEIZAI KENKYUSHO (ed.), Keizai Kenkyu Dai 3-kan Dai 4-go (Economic Studies, Vol. 3, No. 4), Iwanami, Tokyo, 1982, pp. 308-319.

OECD, Review of National Policies for Education: Japan, Paris, OECD, 1971.

_____, The Development of Industrial Relations Systems: some implications of Japanese experience, 1977.

OKITA, S., The Developing Economies and Japan: Lessons in Growth, University of Tokyo Press, 1980.

_____, Labour Productivity and Economic Development: The Japanese Experience in Australia - Japan Research Center Reserch Paper No. 83, 1981.

OUCHI, W., Theory Z: How American Business Can Meet the Japanese Challenge, Addison - Wesley Publishing Company, 1981.

PASCALE & ATHOS, The Arts of Japanese Management, Penguin, 1981.

PASSIN, H., Society and Education in Japan, Teachers College, Columbia University, 1965.

RODO HOREI KYOKAI, Rodosoran (Labor Laws Book), Tokyo, 1982.

SHOUBERGER, R. J., Japanese Manufacturing Techniques: Nine Hidden Lessons in Simplicity, London, The Free Press, 1982.

SHIMODA, H., Japanese Industrial Relations Series No. 6: The Japanese Employment System, The Japan Institute of Labor, Tokyo, 1980.

SHIMOYAMA & HYODO, "Nihonteki Roshi Kankei" to Rodo Undo ("Japanese Labour-management relations" and Labour Movements), in Nihon Shihonshugi no Shihai Kozo (The Structure of Ruling in Japanese Capitalism), Tokyo, Ohtsuki Shoten, 1982.

SHIRAI, T., Gendai no Romu Kanri (Modern Labour Management), Tokyo, Toyokeizai Shinposha, 1982.

SHODA & SAKUDO, Gaisetsu Nihon Keizaishi (History of Japanese Economy), Uhikaku, Tokyo, 1979.

SUMERAGI, S., Nihon Kyoiku Seido no Seikaku (Characteristics of Japanese Education System), Tokyo, University of Tamagawa Gakuen Press, 1970.

SUMIYA & KOGA (ed.), Nihon Shokuyyo Kunren Hattenshi <Sengo-hen>: Rodoryoku Toya no Kadai to Tenkai (History of Japanese Vocational Training Post-war period>), Tokyo, Nihon Rodo Kyokai, 1978.

TANAKA, H., Shogai Koyo Kakumei: Nihonteki Koyo no Saiken o Mezashite (Career Employment Revolution: Toward the Reconstruction of Japanese Employment), Tokyo, Dauyamondo Sha, 1979.

TANIUCHI, L., & White, M,I., Teaching and Learning in Japan: Premodern and Modern Educational Environments, 1982, (mimeo).

TSURU, S., (ed.), Human Resources, Employment and Development Vol. 1: The Issues, London The Macmillan Press Ltd., 1983.

UEDA, T. (ed.), Shosyudan Katsudo Suishin Manyuaru (Manual for Promoting Small Group Activities), Tokyo, Shin Gijutsu Kaihatsu Senta, 1982.

UMETANI, S., Education and Vocational Training in Japan, Hamburg, Instituts Fur Asienkunde, 1980.

UNESCO, Case Studies on Technological Development I: Technological Development in Japan, Paris, UNESCO, 1971.

UNION OF JAPANESE SCIENTISTS AND ENGINEERS, Fundamentals of Quality Control circles, Nikkagiren, Tokyo, 1970.

WESTINGHOUSE, Training and Development in Japanese Companies, U.S.A., (mimeo).

WORLD BANK, World Development Report 1980, Washington D.C., 1980.

YAKURA, H., Gakurekui Shakai (Society of Academic Qualification), Tokyo, Kyoikusha, 1978.

YONEYAMA, K., Gijutsu Kakushin to Shokuba Kanri (Technological Innovation and Labour Management), Tokyo, 1978.

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