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ECONOMIC DEVELOPMENT AND JOB  
TRAINING IN JAPAN

By

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## Economic Development and Job Training in Japan

### Historical Setting

When Japan opened her ports in 1859, after two hundred years of closed-door policy and preventing economic development, she found a very wide differential in technology between herself and the West. Although traditional artisan techniques had developed for many centuries in Japan, there was nothing which could be called machine technology.

Leaders of Japan - old feudal lords, as well as the new political elite of the post revolution (1868) period - were very eager to introduce western technology, firstly, in order to meet military needs, as they recognised the superior power of the artillery and iron warships; and secondly, to improve the balance of trade which showed a big deficit caused by the flood of imports, particularly textiles and metal goods, while inflation were proceeding through depletion of the precious metals.

An apprenticeship system had already developed within the artisan society, particularly among builders such as carpenters, plasterers etc., and among blacksmiths, copper-smith and similar trades. The apprenticeship period was usually 7 years or more. However, the new government which was eager to promote freedom of trade and industry, forbade this system in 1872, on the ground that the apprentices were subjected to a type of bondage. This led to the collapse of the system organisationally and functionally, despite the fact that the artisan groups attempted and succeeded to some extent to maintain it to meet their needs for skilled workers.

### The New Training: First Stage — Learning from the West

The new western technology was very different from the traditional Japanese, so that even in a similar job, such as blacksmith, for instance, it was necessary to retrain the Japanese blacksmith to enable him to use a western type forge. In the case of entirely new skills, such as turning or finishing, the process had to be learnt from the beginning.

Initially, western engineers and skilled workers were employed by government factories, shipyards and mines, and sometimes by big private enterprises, in order to build factories, to train Japanese labourers and to operate the new machinery. To meet the immediate needs, training was on the job, person to person, direct and strict, but unsystematic.

It was the intention of the Japanese leaders to replace the western skilled workers by Japanese as soon as possible (Japanisation!), and it was realised that to achieve this more systematic training was necessary particularly for industries such as shipbuilding. Mechanics institutes were founded in government shipyard and factories which followed the example set by similar institute in the West. Courses were 3 to 5 years duration and the teaching standards were high, but as training institutions for skilled workers they were failure because the trainees completed their courses with far higher aspiration than a mere skilled worker. They had acquired high quality technical knowledge against the background of skill level of those days, and were qualified to be technicians. Many of them moved to private — mostly small — factories as technicians or foremen and undertook a training function as well as supervising.

#### Second Stage — Apprenticeship Schemes

For the first generation of the process of transplanting western heterogeneous technology and skill to Japan, it was necessary to learn directly from western engineers and skilled workers, but it was a very expensive process. It was also ineffective sometimes, because of language difficulties. Consequently, after 1880 job training was transferred almost completely into the hands of Japanese foremen and skilled workers.

At the same time government factories were being forced to become more cost-minded. Not to speak of systematic training being expensive, trainees moved frequently to other factories after completing their training. To cut the unproductive expenses, even the large factories began to emphasize on-the-job training, which they were now able to tackle as they had sufficient key skilled workers.

At the other end of the scale, small repair and maintenance workshops mushroomed, which, utilising old-fashioned and simplified machines, needed many skilled workers. Some of these came after training from the big factories, but others were trained within the small workshops. Skilled workshop masters took the initiative in this extension of apprenticeship system into modern skilled society.

Under the conventional apprenticeship system, the apprentice lived in his masters house, doing miscellaneous house work for the first year or so; then he was trained on the job for a further 6 years. After finishing this period, it was usual for the apprentice to serve for one more year with his master without wage as gratitude, and then he was recognised as a skilled artisan.

This strict apprenticeship system was not established among jobs arising from the new technology, because:-

- (1) Systematic training was lacking due to the master's lack of systematic knowledge.
- (2) A standard of skills was not established which was reflected in the absence of wage rates.
- (3) Apprentices often deserted before completion of the training period, taking a job as a semi-skilled worker, rising eventually to skilled through experience.

Nor was this system used in the big factories. There the young trainees, called 'probationers,' were not assigned to a particular master or skilled worker, but belonged to a workshop, doing odd jobs and helping the skilled workers. No one was responsible for them and it was difficult for them to learn the necessary skill on the job.

#### Third Stage -- The Trainee System

As industrialisation progressed and technical precision was demanded, neither the 'probation' nor the 'apprenticeship' system was adequate to produce the standards of skills required.

Furthermore, the shortage of well-trained skilled workers was a serious bottleneck to further industrialisation which was going on after 1910 or so. In consequence more systematic and precise training was emphasised.

There was, however, a serious economic problem in setting up systematic training schemes. Who would and could shoulder the financial burden? The family of the trainee was too poor to bear the training cost, despite their ambition, like western unskilled workers, to see their children in higher wage earning jobs. Employers were also reluctant because they had no guarantee that their trainee would stay long enough for them to recoup the costs of training. Skilled workers were in short supply and well trained young workers could get better jobs easily, and labour turn-over was very high.

The government considered that it had a responsibility to provide some kind of training facility. Just before the turn of the century, the government started the supplementary course of trades and farming, and the apprentice schools for primary school leavers. These were only successful in training for the local indigenous handicraft industries. For the skilled factory jobs, the government started a few mechanics institutes, but these only trained a few dozen each year, which was quite inadequate to meet the demand.

Around 1910 when big private businesses were established in various industries, employers of these businesses found it more satisfactory to provide training facilities in their factories, geared to their specific needs. The 'trainee' system was established, under which leavers of primary school, which was extended to 6 from 4 years in 1910, were recruited, provided with board, clothing, some pocket money and trained for about 3 years. Usually they had lessons on fundamental scientific knowledge in the morning and practised skilled works in the afternoon. During training, the benevolence of the employer and loyalty to the company were emphasized, but more effective was the warm treatment and the opportunity for rapid promotion and high wages for them. Most of the 'trainees' remained for many years with the company that trained them, sometimes even up to retirement. They were called the 'reared-from-teenage',

the most reliable workers in the company, and became one of the pillars of 'Japanese industrial relations system' which were evolving at about this time.

#### Aftermath and Appreciation

Apprenticeship almost disappeared among big modern factories but remained in medium and small factories, which could not afford facilities for the 'trainee' system, as the recruiting institution for skilled workers. Most Japanese regarded it as business custom behind the times. Even the 'trainee' system, established among big business, was confined to each factory so that standard skills did not emerge and nor did a standard wage rate. Wages were estimated according to the length of experience and skill of each worker.

When the 'trainee' system was established, the training facilities for technicians and foremen were also set up in some big factories, because the management found troubles between old technicians or foremen and well qualified young skilled workers.

At the same time, government took responsibility to set up technical middle schools in most of the industrialised areas, and after the World War I, they became the sole source of supply of technicians even for big factories.

When Japanese industry shifted from light to heavy in the 1930s, the economy suffered again for a serious shortage of skilled workers. The countermeasure was nothing but a spreading of the 'trainee' system to the medium scale factories, enforced by law, and the reduction of the training period in an attempt to meet the high demand by the war economy caused the collapse of the trainee system itself.