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## **Skill Formation Style Difference between Germany and Japan: Its Influences on the Development of Labor Markets and Global Competitiveness**

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### **Introduction**

Under the pressure of an aging society, industrialized countries are now struggling to maintain their international competitiveness through technological innovation and human resource development (HRD). The manufacturing industries in Germany and Japan, recognized as the world's leading industries in terms of their high productivity and proven quality, are no exceptions.

This paper examines how skill formation style differences influence the development of labor markets and their global competitiveness through comparative empirical study from socio-economic perspectives and in particular, how private manufacturing companies in each country invest in human resources, namely, apprenticeships or in-company skill formation, and how each skill formation style works in the context of each labor market. The paper also investigates the basic question: "for whom are the skills formed?" — for individual workers, for organizations, or for the society?

### **Background**

It is noteworthy that manufacturing companies in both countries recognize raising workers' basic skill standards as the foundation of industrial competitiveness. In each country, however, required and preferred skill formation style is entirely different. The nation-wide vocational education and training (VET) system, known as the "dual VET system", namely, apprenticeship training with related classroom lessons systematically provided by a private company *before* the points of entry has been well developed in

Germany, whereas intensive in-company training and recurrent on-the-job training *after* the ports of entry are well organized in Japan.

## **Methods**

The methods used in this paper consist of an analysis of relating literature, economic data, and the results of empirical research including some interviews to human resource managers in Japanese manufacturing firms and questionnaires to the workers in July and September 2005. In addition, analysing the characteristics of regional or national manufacturing culture in particular, interdisciplinary international comparative studies have provided significant indications to this paper. The literatures and the result of fact finding factory visits including some interviews to human resource managers and vocational training leaders/coordinators in Germany conducted in May and August 2006 also contributed to this paper. All in all, the changing phase of the characteristics of the Japanese skill formation system to maintain the firms' competitive edge will be delineated in this paper on the comparative basis.

## **Results and Discussion**

### **1. Skill Formation Style in Germany**

Skill acquisition is an individual's choice and the obtained qualification is portable for the workers in the German skill formation system. The education system in Germany, shown as **Figure 1**, also seems to be favorable to develop the nation-wide industrial training system. A critical point on the dual VET system is that the private sector provides a large portion of the budget.<sup>1</sup> Moreover, under the influence of a long *guild* tradition, Chambers of Industry and Commerce have maintained authority over the qualification examinations and supervision in general. As a result, the quality of individual skill levels is secured and maintained but interdisciplinary skills such as *mecha-tronics* and team work are minor on the agenda. The system is not flexible for the companies in the industry.

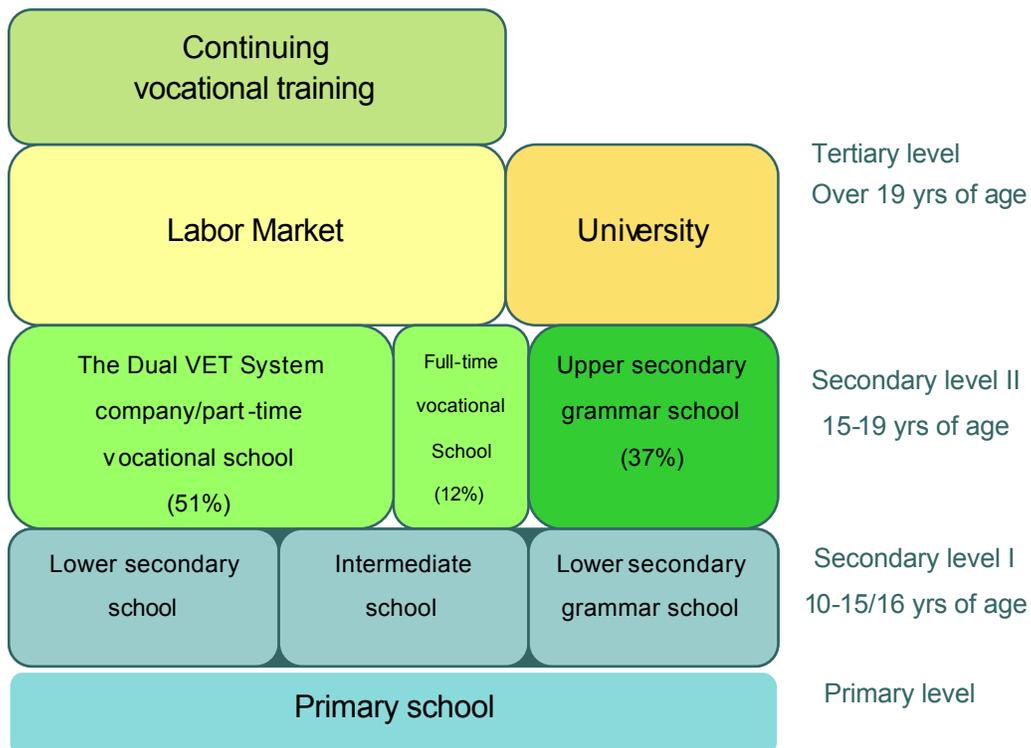
The system is cost effective for small-sized companies because of the chambers' across-the-board supervision, whereas sponsoring the system seems to be "noblesse oblige" for large companies which contribute significantly large amounts of money and

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<sup>1</sup> According to BIBB (2005), the private sector provides 73% (EUR 14.7 billion) of the total VET budget, while the public sector offers 13% (EUR 3.05 billion) for part-time vocational schools and 14% (EUR 3.17 billion) for full-time vocational schools.

well-equipped training venues to the VET system.<sup>2</sup> In addition to this, the *Meister* system is vitally in action in the workplace as shown in the continuous training in the upper-left of **Figure 1**. The system is working especially in the central part of the factory (*Betriebsmittelbau*), e.g., machine production and maintenance division, where 30-year-experienced super skilled workers are working as *Meister supervisors*. It is noteworthy that an individual skilled worker's performance is regarded as more important by the workers even though teamwork is advocated on the shop floor by production managers.

**Figure 1 Education and Training System in Germany**



Source: BIBB

<sup>2</sup> A large high-tech steelworks in Duisburg employed 15 trainees out of 130 in 2005 after providing a three-and-a-half-year apprenticeship. A German “flagship” automobile company’s Bremen factory employed no trainees out of 140 apprentices in 2006 because of no job openings there.

## 2. Skill Formation Style in Japan

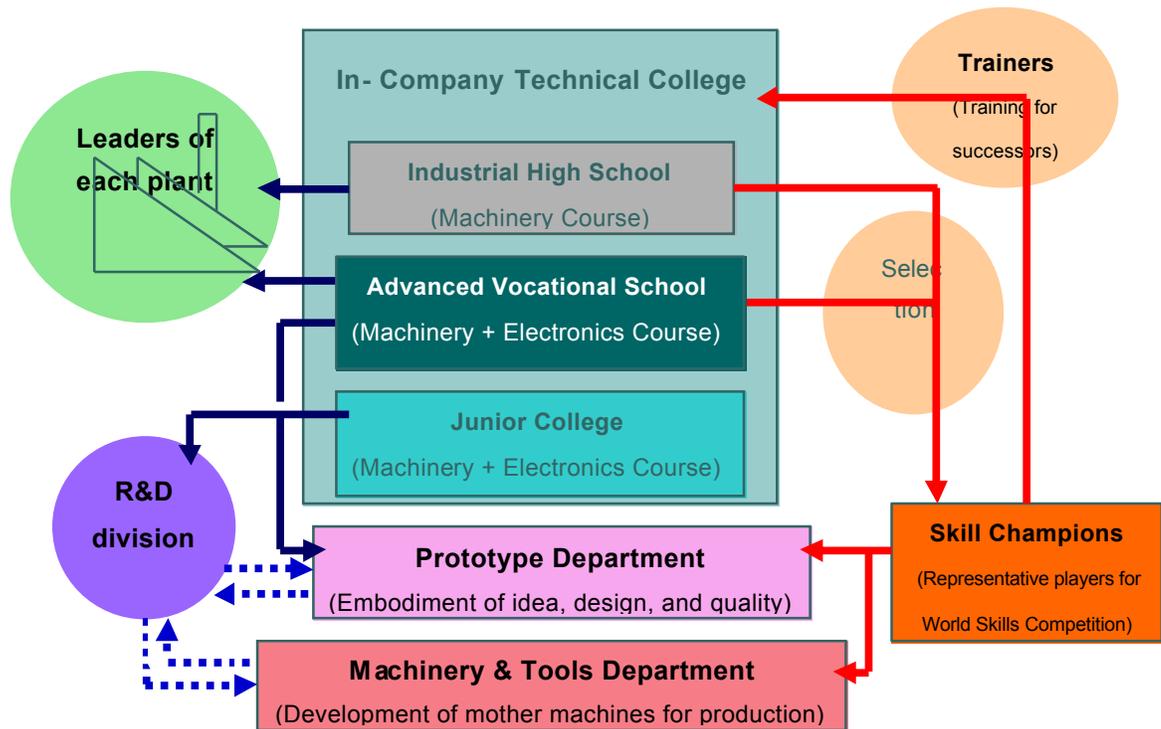
On the other hand, the Japanese skill formation system is totally internalized within the company. It is mainly because public vocational training could not catch up with rapid economic growth in modern times.<sup>3</sup> As a result, industrial apprentices narrowly exist in the closed internal labor markets in Japan, although their skill levels are extremely high. The increasing rate of entering tertiary education has encouraged social mobility but also caused a skilled worker shortage in Japan. Concurrent systematic on-the-job training and re-training in the firms might be an alternative to maintain Japan's competitive edge. All in all, it has become quite flexible for the company and the acquired skills are not portable for the workers. At the same time, team work is recommended and implemented smoothly on the shop floor through job rotation.

Apparently, the in-company skill formation system is a cost effective and efficient way to train a limited number of trainees. A critical point is, however, that a Japanese company has to utilize *all* regular workers trained within the firm for a significantly long time until their mandatory retirement age of 60-65. As a result, the internal labor market sometimes has to be elaborately developed, as is shown in **Figure 2** of an automotive components company, for instance. Information and personnel exchange is frequent and flexible under the holistic human resource management (HRM) system. The company adopts the apprenticeship-type training and education system for young employees. A distinctive point is that the prototype of the products developed in such traditional style in Japan is deployed world-wide to produce final products to fit each market by a highly automated production system. This creates Japan's manufacturing competitive edge as a result.

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<sup>3</sup> See Hayashi (2008) in detail.

**Figure 2 In-Company Training System and Internal Labor Market  
(Example of an Automotive Components Company in Japan)**



Source: Adapted and translated by the author from Special Feature of the company in *Weekly Diamond*, 23 July 2005, p.131, with amendment based on the interviews with the technical college instructors and HRD managers of the company in July 2005.

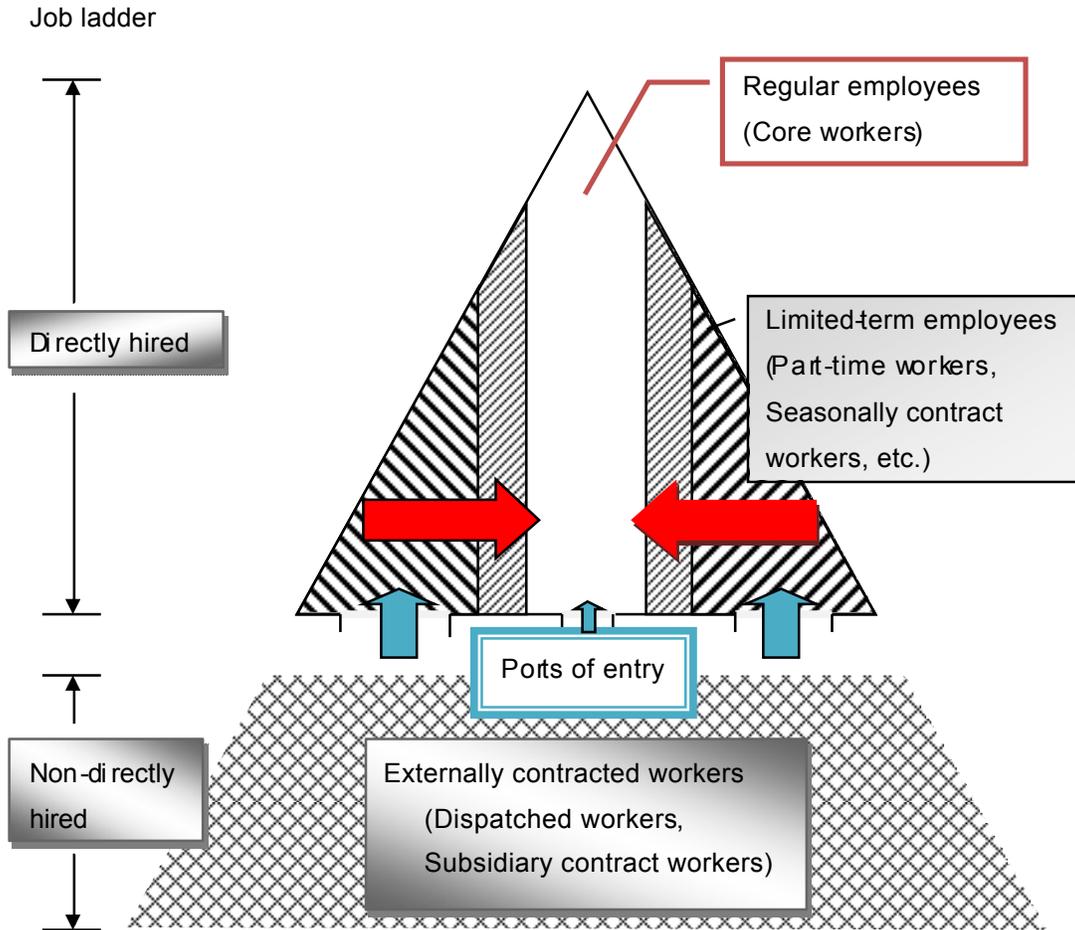
### 3. A Critical Point on New Type of *Dualism* in Japan

It should be noted, however, competitive companies mentioned above tend to employ a significant number of contingent workers to save quasi-fixed labor costs. As it is delineated in **Figure 3**, a large number of regular employees have been replaced by contingent workers; directly hired part time workers and/or indirectly hired temporary workers.<sup>4</sup> Such a tendency has generated a new type of dualism, regular workers

<sup>4</sup> Regarding temporary workers, although the number of dispatched workers in the manufacturing industry had rapidly increased after 2004 Revised Temporary Workers Act, the recent job research findings revealed that externally contracted temporary workers registered with temporary staff agencies and only conclude contracts when there are jobs available for

versus contingent workers, and that causes remuneration differences and skill succession difficulties in Japanese society today.

**Figure 3 Model of Japan's Enterprise Internal Labor Market and its Recent Change**



Source: Delineated by the author

them are in a considerably precarious situation in the recent recession (Health, Labor and Welfare Ministry survey on temporary workers, released on 31 March 2009).

## **Conclusions**

In conclusion, human resources are invested in by the society in Germany and by the organizations in Japan. The dual VET system and continuous training in Germany have maintained a standard of nation-wide skill levels with some rigidity of framework, whereas the integration of machines and electronics, a key factor of the present manufacturing industry, is relatively easily accomplished in the Japanese system. It appears cost effective for the latter but there is little consciousness of the future needs of society. Under pressure of an aging society with fewer children, the grand design of HRD policy must be hastily established in Japan. It should be noted, however, that the skill formation system is fundamentally determined in the context of each industrial culture. The empirical study also indicates that HRD policies and schemes will continue to evolve according to significant changes in both global and/or national economic and demographic environments.

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