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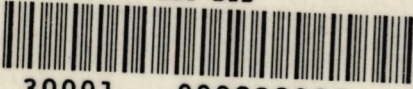
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EUROPEAN UNIVERSITY INSTITUTE, FLORENCE
DEPARTMENT OF POLITICAL AND SOCIAL SCIENCES

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Printed in Italy in February 1991
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Is the German Dual System a Model for a Modern Vocational Training System?

A cross-national comparison of how different systems of vocational training deal with the changing occupational structure¹

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¹ Paper presented at the conference on the Role of Vocational Education and Vocational Training in an International Comparison, 25–26 October, 1990, Berlin. I would like to acknowledge the useful comments and suggestions made by Clare Tame in preparing this manuscript.

1. Introduction

Today, the increasing rate of change in the occupational structure constitutes a challenge that faces all modern industrialized countries. Increasingly, new occupational qualifications are being demanded of members of the active working population and customary occupations are fast disappearing and being replaced by new ones.

Historically various countries have developed their own educational systems with which they have attempted—more or less successfully—to cope with these changes in the occupational structure. Particularly important in this respect are the vocational training institutions. In this paper I would like to compare these institutions with respect to their ability to deal with the rapid structural changes in the occupational system. The paper is structured in the following way. First I will take a brief look at the nature and direction of changes in the occupational structure of modern societies, and will formulate five problems that this presents for vocational training systems. I will then classify historically established vocational training systems for skilled manual and skilled white-collar workers in various Western European countries and the United States and compare them in respect of the way they deal with these problems. The focus is always the comparison with the German dual system.² On the basis of these considerations I will then conclude with a proposal for some basic elements of a training system of further education which – given the increasing speed of the changes taking place in the occupational structure – are necessary to complement the existing vocational system.

2. Consequences of Changes in the Occupational Structure

Let me first discuss the consequences of the changes in the occupational structure for a modern system of vocational training. If one looks at the official statistics for Western European countries and the United States over the last decades one observes an impressive similarity in three trends of change in the occupational structure (Goldthorpe 1986:1): (1) there has been an impressive shift away from manual and productive jobs to non-manual service and administrative jobs; (2) the greatest drop in manual employment has been for semi-skilled and unskilled workers and less for skilled workers; (3) the greatest increase in non-manual employment has not been in unskilled jobs, but in skilled commercial and administrative positions, skilled services, the semi-profession, and professions. Thus, regardless of the nature of the highly controversial debate about the general direction of the development of job requirements in the course of occupational change during the last decade, it is clear that there has been an upward shift in the skill structure of jobs: modern societies need skilled and highly-skilled labour more than ever (Blossfeld 1985a, 1989).

² The "dual system" is the prevailing type of vocational training in Germany. "This training takes place in both privately owned and state-owned-and-operated enterprises and is complemented by instruction given in part-time vocational schools financed and run by the state." (cf., Max Planck Institute for Human Development and Education, 1979:).

In addition, all forecasts for future labour requirements indicate that this development will continue in all highly developed countries. For instance, the IAB-PROGNOS forecast for West Germany until the year 2010, predicts a further reduction of about 2 million jobs in production-oriented fields and an increase of more than 4 million jobs in commercial, administrative and service-oriented sectors (Stooß and Weiding 1990:43). At the same time, the number of unskilled jobs will drop by around 2 million and the number of higher and highly skilled jobs will increase by almost 4 million (Stooß and Weiding 1990:44).

The continual shift in occupational requirements is the result of technical and organizational changes that highly developed market economies have accepted and institutionalized (Haller and Müller 1983). These changes lead to a continuous tension between the requirements of the occupational structure and the structure of vocational qualifications distributed among the employed population. Disparities between both structures lead to crises, which manifest themselves in the form of labour shortages in particular occupations or in a shortage of skilled labour in general.

In principle, the adjustment of the structure of qualifications to the occupational structure can be made in two ways (Janossy 1966). First, the already employed population can acquire new knowledge and skills through further education or retraining. Secondly, new entrants into the labour market can take up new jobs, while workers leaving the labour market simultaneously leave old ones. Although in all societies the adjustment of qualifications to occupational demand is carried out in both ways, empirical investigations show that the greatest change in the occupational structure has been accomplished by the entry of young people into the labour force and the retirement of old people (Müller 1978; Blossfeld 1985b, 1987a, 1987b, 1989). Normally, young people tend to enter new jobs, created by technical innovations and developments and old people leaving the labour market were often employed in occupations and industries which have become less important for economic development. Generational change allows a particularly radical form of change in occupational structure because people entering the labour market for the first time have a totally new access to the occupational structure (Ryder 1965). For this reason changes in the occupational structure are particularly keenly felt by those who have to make a relatively long-term occupational training decision (Blossfeld 1985).

With the increasing rate of changes in the occupational structure, the choice of vocational training and first jobs are connected with an increasing level of uncertainty, not only because the occupational requirements within an occupation change rapidly, but also because the life-span of many occupations has been permanently shortened. Today one is clearly in a position to make forecasts about the development of broad occupational activities and fields of qualification, but it is increasingly difficult to predict in a detailed way the development of selected occupations which could serve as a basis for young people to make low-risk training and occupational decisions (Stooß 1990:52). In the short term, one can certainly predict the future development of broad occupational fields, but concrete forecasts about occupational development over the course of a whole work life are increasingly less successful given the rapid rate of technical and organizational change.

Each new generation of occupational entrants is therefore referred to a particular occupational structure which opens up a specific range of future occupational opportunities (Blossfeld 1989). The way in which such occupational structures are linked to occupational and mobility chances, however, varies significantly from country to country. Job mobility is determined by the structure of the particular educational systems (cf. for example Lutz 1976; König and Müller 1986; Haller 1989; Allmendinger 1989a, 1989b) which give education a country-specific importance for the attainment of social status and income (Blossfeld et al., 1988), the formation of in-plant hierarchies and personnel structures in firms (Maurice et al., 1979), the organization of work (Lutz 1976; Haller 1989), and the differentiation of labour markets (Blossfeld and Mayer, 1989). For this reason, in highly developed countries the adjustment of the qualification structure to the demands of the occupational structure is the result of a complex interplay of nation-specific educational and employment institutions. The system of vocational training in any particular country cannot therefore be understood in isolation, but must be considered in relation to the general organization of the educational system and in connection with the nation-specific occupational structure of the employment system (Blossfeld 1990a). On the basis of this argumentation it follows that the increasing rate of change in the occupational structure generates five problems, which will be the basis for my comparison of various systems of vocational training:

(1) The problem of generational flexibility: Since particularly radical changes in the occupational structure are possible through a change of generation, one can ask to what extent the different systems of vocational training are able to direct new occupational entrants to new and future-oriented occupational fields in a flexible way. Vocational training channels each new generation of entrants in a particular direction and this initial channelling can improve or hinder the adjustment to changes in the occupational structure.

(2) The problem of individual flexibility: Since requirements within occupations are changing rapidly and the life-span of most occupations is permanently shortened, one can ask, does a system of vocational training further individual flexibility. This means, one can compare the various systems of vocational training in respect of the extent to which they not only supply the opportunity to learn specific functional and extra-functional skills and abilities, necessary for a concrete job, but also promote general cognitive and social skills as well as the readiness for further education over the whole working life. All available empirical studies show that further training is highly dependent on having accomplished some kind of vocational training.

(3) The problem of structural flexibility: Since vocational training includes a social assignment of tasks and work abilities, the different systems of vocational training can be assessed in as much as they allow an interchange between various occupations later on in the occupational life course (Beck and Brater 1977:10). That is to say, does vocational training restrict the employee to a narrow field of activity, or will it instead open the door to a broad range of occupations and activities.

(4) The problem of hierarchical flexibility: Since an occupation also has a status dimension, one can evaluate the extent to which vocational training systems form a

basis for career opportunities and job advancement, which in turn can motivate the employed person to acquire additional occupational qualifications and social skills.

(5) The problem of training flexibility: Since the proportion of jobs for unqualified employees is increasingly reduced as a result of changes in the occupational structure, one can finally ask to what extent the different systems of vocational training tend to be open for all people and to what extent the unskilled in each generation will have the chance to obtain training later on in their life course.

In summary, one can say that the more flexibly a systems of vocational training is organized and the more extensively it will prepare entrants for complex and changing situations in their later occupational life, the better it can cope with the consequences of the increasing rate of occupational change.

3. Cross-national Comparison of Different Systems of Vocational Training

I would now like to focus on the different national systems of vocational training for skilled manual and skilled white-collar workers and to deal with the question as to what extent these historically established systems are in a position to cope with the five problems described above. Since the fundamental relationship between the educational system and the occupational system is moulded by the basic economic and political composition of a country, I will limit my discussion to western countries with a market economy and a relatively high level of industrialization.

In these countries today, vocational training is heterogeneously organized. It is carried out in general schools, vocational schools, training centres, the so-called dual system, or in the form of simple on-the-job training at the workplace. Different types of vocational training have varying degrees of weight in different national training systems. For example, in France the greater part of vocational education takes place within the general educational system (Maurice et al., 1979; CEDEFOP 1981), whereas in Denmark, the Federal Republic of Germany and other German speaking countries the dual apprenticeship system is the dominant type of vocational training which leads to a clear separation between general education and vocational training (König et al., 1987:87). In the Netherlands, Luxembourg, Belgium and Sweden vocational training essentially takes place in vocational schools (CEDEFOP 1981). Finally, in Italy, the UK, the Republic of Ireland and the United States many occupational beginners enter employment life directly and acquire occupational qualifications through on-the-job training at the workplace (CEDEFOP 1981).

Although one can observe pronounced focal points in the basic organization of vocational training in different countries, there is nevertheless in all countries a complex coexistence of many types of school-based and workplace-related vocational training which has also changed over the last decades. In this paper it is therefore impossible to give an exhaustive description of all these different combinations of vocational training across countries. Instead, I will concentrate my arguments on selected dimensions of vocational training systems which seem to be particularly important in dealing with the five problems described above. These dimensions are:

(1) the school- and workplace-relatedness of vocational training; (2) the standardization of vocational training; and (3) the stratification of vocational training.

The Workplace-relatedness of Vocational Training

First of all, vocational training can be distinguished in the way in which it combines theoretical learning with practical work experiences (Benner 1982:54). At one end of this dimension lie the general educational and vocational schools where the trainee is not confronted with real life occupational problems and obtains qualifications only on the basis of theoretical instruction, as is the case of full-time vocational schooling in France (Erbes-Seguín 1990:17). At the other end of this dimension lies pure on-the-job training where the trainee acquires all his qualifications without any theoretical instruction, solely through the solution of real life occupational problems in a concrete workplace, as is often the case in the United States, the UK or Italy (Hamilton 1990; Bynner 1990; Benner 1982).

Between these two extremes lie the various combinations of school and on-the-job training. For instance, the predominant school-based training with in-plant practical work experience, as for example in the technical middle-grade secondary school in the Netherlands, or the in-plant training with part-time vocational school of the dual system found in the Federal Republic of Germany, or the government sponsored vocational training via skillcentres in the UK.

If one accepts that important occupational experiences cannot be simulated at school, but can only be made by the real life situation of the workplace (Drexel 1990:26), and if it is true that the firm and workplace represent valuable learning environments that cannot be substituted by the school (Hamilton 1990), then effective vocational training must take place at the real workplace. On the other hand, from the growing rate of change in the occupational structure there is an increasing need for additional individual flexibility, because occupational requirements change rapidly and the life-span of occupations is being shortened. Therefore it is important that people acquire a broad theoretical understanding of their occupational activities and that vocational training contains a more general education. Given these contradictory demands, it is obvious that neither a pure school-based vocational training such as one finds in France, nor a pure on-the-job training as is often found in the United States, the UK or Italy, is a model that could serve as the basis for a modern vocational training system for skilled manual and skilled white-collar workers. The institutional solution for a modern vocational training must lie somewhere between these two extremes, and depends of course on the concrete occupational contents of a job.

The growing popularity of the dual training system in different highly developed western countries is, therefore, partly accounted for by the fact that this system is able to offer a pragmatic compromise of theoretical learning and job experience for a large number of occupations. In the dual system the dominant practical in-plant training is combined with theoretical learning in vocational schools. The task of vocational schools is to complement practical experience in the workplace by giving it a

theoretical basis together with some general education. Certainly, the coordination of theoretical school-based learning with practical workplace training – as is the case with all the various combinations of school-based and workplace training in general – is one of the areas in need of continual improvement in the dual system (Lempert 1990).

Although in the dual system of the Federal Republic of Germany the emphasis is clearly placed on practical in-firm training, during the last decade the school-based elements of vocational training have also been strengthened. In particular, a strong system of trainee workshops and joint training workshops has been developed. In the Federal Republic today, joint instruction schemes are used by over 60 per cent of craft firms, and in-plant instruction by about 40 per cent of the industrial and commercial firms (Arbeitsgruppe Bildungsbericht, Max Planck Institute for Educational Research 1990:344). For this reason, in the dual system the in-firm training also implies the acquisition of more general workplace skills and knowledge. These general skills increase the individual flexibility of the trainee, and are necessary to keep pace with the progressive rate of change in the occupational structure.

The Standardization of Vocational Training

A second dimension according to which vocational training systems can be classified is the extent to which vocational training conforms to the same standards and access to jobs is based on training certificates (Allmendinger 1989a; Haller 1989). At one end of this dimension lies the training in vocational schools and in the dual system. In the latter, both the theoretical and practical sides of training are highly standardized and training ends with a recognized certificate which serves as a precondition for entry to specific jobs and occupations, as is the case in Germany (König and Müller 1986; Haller 1989; Allmendinger 1990). At the other end of this dimension lies the totally unregulated on-the-job training where in-firm training takes place without general guidelines with regard to the quality of instructors or curricula, and where training does not end with a generally recognized certificate. This is the case, for instance, in the United States, the UK and Italy (CEDEFOP 1981; Haller 1989; Allmendinger 1989; Hamilton 1990).

Between these two extremes lie the various school and work-based vocational training schemes with different degrees of standardization. Especially in France, where vocational training programmes have been integrated into the general educational system, could be considered as a case in between these two extremes because school-based training is highly standardized whereas the post-school part of training at the workplace takes place under unstandardized conditions with no recognized final certificate (especially for jobs of a highly manual character) (Erbes-Séguin 1990).

If we assume that the acquisition of job qualifications can be socially best ensured by a certificate, and that the information value of such a certificate is determined by the observance of particular quality norms, then training must take place under highly standardized conditions for well-defined occupational titles. Employers can then use certificates as a useful indication of particular employment possibilities for employees

(Spence 1973), and employees can use them as a reference point in defining their social status in collective and individual negotiations with employers (Krais 1979:25). On the other hand, the growing rapidity of change in the occupational structure generates a need for structural flexibility, that is, for employees who are not restricted to a too-narrow occupational field by social definitions, and at the same time a need for generational flexibility, that is, a need for new generations of entrants which are flexibly directed to new future-oriented occupational fields.

On the basis of these contradictory demands it follows that neither the unstandardized on-the-job training with no recognized final certificate (as is often the case in the United States, the UK, Italy or France) (Bynner 1990; Hamilton 1990; Erbes-Seguín 1990), nor the highly channelling occupationally-specific dual system in the Federal Republic of Germany, is acceptable as a model for a modern vocational training policy (Hamilton 1990; Lempert 199). The institutional solution for future-oriented vocational training systems must lie again between these two extremes.

However, fundamental elements of the German dual system could serve as a basis for such a modern vocational training system. First, it is important that the system of vocational training is not governed solely by the state, but that it is instead the outcome of a complex process of coordination between the state, employees and employers associations (Erbes-Seguín 1990). The very different interests involved in vocational training plans can in this way be adequately taken into consideration. Second, it is very important that the observance of the quality standards of the firms which train people and the minimum requirements of training activities are guaranteed (Lempert 1990). Thirdly, it is important that the qualifications of trained people are highly regarded by the employers, and this can be achieved by stressing the inclusion and involvement of employers in the process of vocational training (Lutz 1976).

For the employed on the other hand the recognized educational certificates of the dual system also implies a high degree of social security (Benner 1982). This means that skilled employees in Germany are often entitled to a specific wage according to their qualifications, that in the case of unemployment they are not obliged to accept employment below their qualifications for a certain period of time, that they have access to training and retraining schemes, and that they are entitled to occupational invalidity insurance benefits.

Finally, in comparison with other countries the dual system of the Federal Republic of Germany has one great advantage, and that is that it allows a large number of young people make a smooth transition from the general educational school system to the employment system because this vocational training systems feeds directly into the job system (Blossfeld and Nuthmann 1989; Erbes-Seguín 1990; Bynner 1990; Hamilton 1990). In countries with a strong orientation to on-the-job training, such as the UK or the United States, or countries where training on-the-job after vocational school takes place under unregulated conditions (e.g. France), this transition often lasts several years and is characterized by a high level of job insecurity, frequent change of workplace, a high degree of part-time employment and a high rate of unemployment (Bynner 1990; Erbes-Seguín 1990; Hamilton 1990).

In some respects, however, the dual system is in need of improvement (Lempert 1990). Although it is already highly standardized compared to other countries, there is still a great variation in the quality of training between firms. Differences can especially be observed with regard to the level of systematicness, the fact that the trainee is confronted with tasks for which he/she is not trained, and that he/she must practise the work virtues such as discipline, diligence, orderliness at the expense of creativity, independence and the chance to cooperate in the workplace (Arbeitsgruppe Bildungsbericht, Max Planck Institute for Educational Research 1990:344). A recent investigation made by the Federal Institute for Occupational Education shows, for example, that training in large firms and in firms falling under the control of the Chamber of Commerce is better planned and more systematically organized than in small firms and craft enterprises. However, craft enterprises and small firms have less difficulties in guaranteeing the completeness of the training (Damm-Rüger, Degen and Grünwald 1988). Moreover, in the German dual system, differences between firms are even greater than differences between occupations. "There are occupations in which young people receive a good training, where they are systematically and comprehensively qualified, and where they are confronted with the latest technology (this includes banking and insurance employees and mechanical fitters), whereas, for example, mechanics, carpenters, backers and bricklayers are often badly trained." (Arbeitsgruppe Bildungsbericht, Max Planck Institute for Education Research 1990:344).

Finally, one of the problems in the German dual system is the large number of different training occupations and their mutually exclusive character. This tends to lead to inflexibility and a lack of occupational mobility later on in the work life (Blossfeld 1985b, 1989). All international comparative mobility studies that include the Federal Republic of Germany show that the degree of mobility between occupations and sectors in the Federal Republic of Germany is lower than in other countries (Carroll and Mayer 1986; König and Müller 1986; Erikson and Goldthorpe 1985; Mayer and Carroll 1987; Haller 1989; Allmendinger 1989a; Mayer et al., 1989; Featherman, Selbee and Mayer 1989). During the last two decades, however, efforts have been made to de-specialize training in various occupations with the introduction of a relatively broad and general basic occupational education leading to a more specialized training after a minimum period of one year (Lempert (1990). This new type of dual vocational training qualifies trainees for a broad spectrum of occupations, encourages occupational mobility and directs the occupational entrants in a flexible way into new developing occupations.

The Stratification of Vocational Training

In the last step, vocational training can be classified from a hierarchical point of view in so far as it differentiates between the unskilled and semi-skilled workers on the one hand and the occupationally trained on the other, and in as much as it gives trained workers the opportunity to climb the job ladder (Haller 1989). At one end of this dimension lies the more or less open on-the-job training where there is no barrier between unskilled, semi-skilled and skilled workers, and where the career perspectives of the trained are heavily dependent on the quality of the on-the-job training in a specific firm, as is often the case in the United States, the UK or Italy

(Benner 1982; Bynner 1990; Hamilton 1990). At the other end of this dimension lies the training in the dual system where there is a clear division in job opportunities between the untrained and the trained, and where the trained have a common basis for further qualifications as master craftsmen and technicians, and also often as technical college engineers, as is the case in the Federal Republic (Krais 1979; Drexel 1990).

Between these two extremes lie various degrees of openness. For instance in France on the one hand it is quite normal for unskilled and semi-skilled workers to be classified as skilled manual labour on the basis of their year-long job experience (Erbes-Seguín 1990), but on the other hand, school-based educational training is rarely the basis for an occupational career (Krais 1979; Haller 1989).

If one again accepts that the best way to socially ensure the acquisition of qualifications is by a certificate (Spence 1973; Krais 1979), and if it is true that further individual educational investments can best be motivated through upward mobility (hierarchical flexibility) (Drexel 1990), and that as the proportion of unskilled jobs decreases as a result of change in the occupational structure, then a modern vocational training system must provide both: (1) the opportunity to enter vocational training over the whole life course (training flexibility); and (2) the chance to make occupational career steps that are connected with certificates (Blossfeld 1989). Hence, neither the rather "fateful" and uncertified on-the-job training nor the "dead-end" career vocational school system in France, can form the basis of a modern vocational training system for skilled manual and white-collar workers. The institutional solution for a system of modern vocational training must rather be in the direction of the German dual system. Although it is true that even in the German dual system, some skilled workers are employed in semi-skilled positions after they have completed their training (i.e. positions which do not correspond to the training they have received) (Hofbauer 1983), in comparison with other countries with on-the-job orientation, however, in Germany downward occupational mobility is nevertheless rather rare and upward mobility is the general pattern (König and Müller 1986; Blossfeld and Mayer 1988).

Certainly, the dual system needs to be improved also with regard to this hierarchical aspect. Empirical studies have shown that in Germany the proportion of unskilled workers in each generation is strongly related to the economical and demographic conditions when these generations enter vocational training, and that this proportion of the generation tends to remain stable over the rest of the worklife (Blossfeld 1989). Hence, one finds relatively disadvantaged generations, such as the cohorts born around 1930 who completed their training in the immediate postwar period, or the large birth cohorts that crowded into vocational training at the beginning of the 1980s. Comparable generational patterns can also be observed in Germany as regards the quality of vocational training (Lempert 1990), the training opportunities of women (Blossfeld 1987), foreigners (Benner 1982) and children from lower social classes (Blossfeld 1990b). For this reason a modern system of vocational education must give the employee the chance to obtain a training qualification later on in the work life (Mayer and Blossfeld 1990).

Finally, in Germany educational expansion has led to the displacement of formally less qualified workers by formally higher qualified workers over the last decades, and has clearly reduced the career opportunities of the man who has "come up the ladder" (Blossfeld 1985, 1986). Formal school and university qualifications have become an increasingly important factor for access to high-level jobs involving planning and direction, and have de-valued the experiences of vocational training and job career (Lutz 1989). In this way, vocational training in the dual system is threatened, as in France, to lead to a dead-end in career mobility. For this reason the dual system must be reintegrated into the changed structure of the educational system and must provide motivated young people with an alternative praxis-oriented career path (Drexel 1990).

4. Vocational Training and Further Education

In summary, one can say that in a cross-national comparison the German dual system can be taken as a model which has considerable strengths, although there is nevertheless still room for improvement.

Given, however, the increasing rate of change in the occupational structure, a traditional vocational training system is no longer sufficient. It must be supplemented by an effective system of further education and retraining, which accompanies the worker throughout his occupational career. On the basis of what has been said up to this point, such a system should include the following elements: (1) a practical in-firm training and theoretical school-based instruction; (2) the inclusion of the various interests of the state, employees, and employers in setting up and organizing training; and (3) the introduction and institutionalization of retraining in the form of an upward career. In short, there is a clear need to develop a system of further training in parallel to the institutions of the system of modern vocational training.

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