Vocational training in small firms in Germany: the contribution of the craft sector

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Abstract

One of the traits which distinguish the German dual system of vocational education and training (VET) from most training systems in the world is the voluntary contribution of companies towards it, in both practical and financial terms. Obviously, the craft sector is a training segment within the dual system where the importance of practical experience is more strongly emphasised than the systematic approach underlying all modern training schemes. However, the overall supply of training placements in the German system decreased during the 1990s. Although the crafts have fared comparatively well, this tendency is now starting to also affect the sector. Being a sector with seemingly less attractive job prospects in small businesses and a comparatively low net cost per apprenticeship, the crafts face problems in terms of social selection as well as challenges with respect to the modernisation of training contents and instruction methods. The crafts are a sector with predominantly male participation and mainly absorb school leavers with lower secondary school qualifications. In this context, one of the questions for the Dual System and its uniform training practices might be whether the rapidly expanding services sector, with similar "small-business" features, will be able or willing to follow the "training philosophy" that originated in the craft sector – and which is still seen as the "backbone" of the German Dual System of training.

Introduction

In Germany, the "Dual System" of Vocational Education and Training (VET) has emerged as a central issue of concern. While the academic debate has become centered around the future of the vocational principle underlying apprenticeship training (Geissler, 1991; Baethge and Baethge-Kinsky, 1998; Deissinger, 1998; 1999), in the political arena the situation on the training market, in particular in the east of Germany, regularly arises as the major topic of VET policy. Although 621,693 new training contracts came into force in September 2000, this number was down by 1.5 percent as compared to 1999. Furthermore, nearly 24,000 school-leavers were not able to find a company to train them in one of the 348 recognised training occupations[1]. While vacant traineeships numbered more than 25,000 (September 2000) – indicating that there are structural imbalances on the German training market – the situation in the Eastern Federal States still appears to be ambivalent, despite the fact that new training contracts rose from 95,000 to roughly 139,000 between 1992 and 2000.

The fragile economic framework in the new Federal States has made it necessary to channel public subsidies into the Dual System[2]. Against the background of more than 400,000 unemployed young adults under 25 years of age in the whole of Germany, the Federal Government in 1998 decided that the training system required public support and accordingly triggered the JUMP initiative (*Jugend mit Perspektive* – or Youth with Perspectives). This programme is supposed to bring young people into training beyond the regular market demand (Bundesministerium für Arbeit und Sozialordnung & Bundesministerium für Bildung und Forschung, 1999). Remarkably, JUMP is not aimed at employment and therefore focuses on training and re-training in its various forms. This implies that the government wants to induce more companies to provide apprenticeships. Recent statistics reveal that, to date, JUMP seems to have worked reasonably well. Although employers doubt the employment effects of the scheme, the Federal Labour Office claims that youth unemployment has been reduced by some 50,000 since its introduction in late 1998[3]. There is a hidden negative training effect

which may be linked to JUMP since the total number of 23,000 training places subsidised or created by the Government is likely to include potential private training places (Zedler, 2000, p. 13).

It is apparent from this that Germany's VET system remains exposed to structural and regional frictions, as well as being dependent upon external developments. Among these pressures, unemployment – as Germany's major social and economic problem[4] – continues to produce difficulties for the training system. A number of aspects underline the very sensitive links between the training system and the labour market. Between 1992 and 1997, the overall supply of training placements decreased (Euler, 1998, p. 67) although it seems to have been recovering in the last couple of years with 654,000 new apprenticeships offered by firms in 1999 and 647,000 in 2000 (Zedler, 2000, p. 13). Nevertheless, at "threshold one" (Zabeck, 1979), all groups – especially companies – will have to strengthen their efforts to offer opportunities for school-leavers as the demand for training places has gone up all through the 1990s and is likely to reach its peak in 2006 with some 700,000 school leavers applying for apprenticeship placements (Zedler, 2000, p. 16). Looking back at the last decade, it does not appear to be realistic that employers' participation in the Dual System fell from 34.3 percent to 23.3 percent between 1985 and 1999[5]. More strikingly, problems at "threshold two", from training into employment, have increased in recent years. Although the training system and the employment sector are bound by a strong professional or vocational link (Maurice, 1993; Konietzka and Lempert, 1998; Deissinger, 1998; 1999; 2001a), career opportunities in the 1990s, even if grounded in skilled training, were exposed to labour market restraints (Timmermann, 1994, p.81). In 1997, 27 percent of apprentices became unemployed following the completion of their training courses (Bundesministerium für Bildung und Forschung, 1999, p. 146).

Although smaller companies, in general, seem to contribute very strongly to the supply of apprenticeships[6] and some handicraft firms desperately seek trainees (e.g. the butchers and bakers), new apprenticeship contracts in the craft sector in 1999 actually declined by 1 percent against 1998 and in

2000 by 5.3 percent against the preceding year (Zedler, 2000, p. 15; Bundesministerium für Bildung und Forschung, 2001, p. 4). Compared to industry and commerce, however, where apprenticeships shrunk by 11.5 percent between 1991 and 1998, the apprenticeship stock in the craft sector increased by 18.5 percent and, with 596,000 trainees (in 2000), it is still significantly higher than in 1990/1991[7]. It appears that while the German system is certainly craft-based and traditional training principles are well rooted, the service sector with masses of innovative small firms now entering the market has so far been neglected by the Dual System. In these branches a training infrastructure is likely to develop in a far more heterogeneous manner with a training philosophy that seems more compatible with the more "flexible" Anglo-Saxon approach to skills formation.

Handicraft origins of vocational training in Germany

Germany's apprenticeship system has its roots in the corporatist framework established by legal sanction in the late nineteenth century (Deissinger, 1994), which not only remained virtually unchanged in its basic features up to the establishment of the Vocational Training Act (*Berufsbildungsgesetz*) in 1969, but was incorporated into the modern training system. Much earlier in the development, compulsory attendance at part-time vocational schools emerged as a second pillar underlying formalised vocational training. Although the dualism of learning sites and legal responsibilities is held to be the striking feature of the German system of vocational training (Greinert, 1994), it is characterised by working principles which reflect the organisation of the training process as a whole and reach far beyond the dual training arrangement. The Dual System is an apprenticeship system and as such is determined by the notion of "vocationalism" or "vocational principle" (Beck *et al.*, 1980; Deissinger, 1998). This means that training is workplace-led and, although work experience is paramount throughout the training period, it implies that the system actually works in accordance with skill requirements defined "around the workplace" (Harney, 1985). Such an objective requires a reliable

organisational framework and also major participation of firms beyond imparting the skills needed for a specific job. However, the importance of enterprise responsibility has not led to over-specialised training as the priority has always been towards “broad-based knowledge and the acquisition of basic techniques” (Géhin and Méhaut, 1995, p. 65). For this purpose, the administrative and organisational contribution of the chambers seems crucial and virtually indispensable (Zabeck, 1975). Both at the federal and state level, standards and conditions of skilled apprenticeship underlie a complicated network of regulations and technical procedures. Although the apprenticeship itself is the responsibility of employers and trade unions, quality control (Raggatt, 1988) is linked to a public interest in preventing the qualification process from being unrestrictedly exposed to market forces.

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Thus the 1969 Vocational Training Act (Deissinger, 1996) follows the notion of a “training culture” (Brown and Evans, 1994) where training is not simply rated as a contractual duty but as an educational process under public control. Furthermore, the School Acts add mandatory school attendance for virtually everybody who trains in the Dual System.

The history of vocational training legislation reflects the fact that, both in theory and in practice, the notion of the workshop and the idea that an apprentice should learn his trade under an experienced master (*Meister*) form the roots of the German “training culture”. Hence, training in the craft sector is still based on two legal foundations, the Handicraft Act and the Vocational Training Act. Both acts mirror a long-standing tradition to link the vocational orientation of training with a reliable legal framework. In 1845, a Prussian Trade Act (Stratmann and Schlüter, 1982, pp. 122 ff.), though not repealing freedom of work as a

whole, re-imposed restrictions on free craftsmanship by confining the privilege to take apprentices to masters who belonged to a guild in as many as 43 trades. The Act made a precise distinction between small workshops and industrial premises by linking the right to take and train apprentices in handicraft occupations to examined journeymen (Stratmann and Pätzold, 1984, pp. 117-9). During the time of the German Empire, the small business movement (*Mittelstandsbewegung*) formed an influential pressure group, both socially and politically. In 1895, against the background of the Industrial Revolution, 58 percent of manufacturing and retailing firms were still one-man businesses (Blackbourn, 1977, p. 420). The movement was so well represented in Parliament that a series of crucial, anti-liberal legal amendments to the trade law could be passed in due course (Winkler, 1976, pp. 1-3). It was above all the Imperial Government that held that it made sense to grant economic privileges in return for the *Mittelstand*’s political value to the state[8]. At the heart of these legislative activities, the 1897 Trade Act (*Handwerkerschutzgesetz*) re-introduced the requirement of formal vocational skills to train apprentices. Although it did not yet set up the master certificate as a training prerequisite (Schlüter and Stratmann, 1985, p. 210) it revived some important stipulations included in the ancient apprenticeship model. Thus chambers and guilds were assigned to organise examinations for journeymen or masters. Indentures as well as a three-year training period at the end of which the apprentice took his examination became a general and virtually mandatory practice in the craft sector (Stratmann and Pätzold, 1984, p. 123).

In 1908, the right to train apprentices was confined by law to examined handicraft masters (Winkler, 1976, p. 2). The year 1935 eventually brought the re-introduction of the master qualification as a prerequisite to establish a craft business (Knörr, 1996, pp. 169 ff.). In 1953, a new comprehensive Handicraft Act (*Handwerksordnung*) encapsulated the preceding legislation by making provisions affecting vocational training in general and the taking on and instruction of apprentices in particular (Knörr, 1996, p. 194). It defined a list of 111 trades as craft occupations (Benner, 1987,

p. 281). This law has been in existence ever since as a parallel code to the Vocational Training Act passed in 1969. Some 40 sections of the Vocational Training Act are not relevant for those occupations defined as crafts by the Handicraft Act. The regulations in the latter mainly refer to the right to train apprentices and the training ordinances, although there are no crucial deviations from the principles underlying the general framework typical of apprenticeship training in Germany. The outstanding stipulation may be seen in the “big qualification proof” which is only indirectly linked to apprenticeships as it affects the right to establish a craft business (section 7 of the Handicraft Act; re-confirmed in 1965 and 1993; for details see Knörr, 1996).

After the First World War industrial employers began to run vocational schemes that may be seen as the precursors of present training ordinances (Benner, 1987; Deissinger, 1994; 2001b). The Chambers of Industry and Commerce emerged as examination bodies for skilled workers, which until then had been the exclusive function of the craft guilds. In due course industrial employments and apprenticeships had to be systematized and classified. With the passing of the Vocational Training Act in 1969, the divergent developments in the craft and the industrial sector came to an end. Thus, the traditional features of vocational orientation and self-government were rooted in the craft sector whereas industry contributed mainly to the didactical development and systematisation of training schemes within the German Dual System (Harney, 1997).

Training in small firms: the craft sector

The social and economic importance of a specific “training culture” within the German system may be valued by pointing to the positive correlation that exists between the proportion of skilled employees in a given small business and its willingness to offer apprenticeships (Kau *et al.*, 1998, p. 56). The system is almost universal as it recruits between two-thirds and three-quarters of youth aged 16 to 19 (Büchtemann *et al.*, 1993, p. 510; Greinert, 1994, p. 116). Unlike in the UK or France, where they form marginal sectors within the respective vocational training systems, apprenticeships

in Germany exist in nearly all branches of the economy, including the professions and the public sector[9]. In 2000, just over 621,000 young people took up an apprenticeship (Bundesministerium für Bildung und Forschung, 2001, p. 4-7). As a whole, in 1999, over 1.68 million young people – 44 percent female – were learning their trades through the Dual System. Training in the Dual System offers young people the opportunity to obtain qualifications which open the path to employment within an occupationally structured labour market (Beck *et al.*, 1980; Maurice *et al.*, 1979).

Approximately 20 percent of German companies are actually craft enterprises. Among these 74 percent employ between one and nine employees, inclusive of the business owner who had to pass a master qualification in order to be permitted to establish a small business. At the same time, with a share of more than 35 percent, the crafts are one of the major suppliers of apprenticeships in Germany[10]. In 1999, in the industrial and commercial field (with chambers of industry and commerce as examination bodies) 833,016 young people were under training. Comparatively, the craft sector (with chambers of craft as examination bodies) as the second largest training provider, offered qualifications to 616,872 young people, mostly originated from the lower secondary schools[11].

Tables I–VII present a more differentiated statistical picture.

Table I Distribution of apprentices (new contracts) according to area of employment (2000) (all Germany)

Area of employment	(%)
Industry and trade	53.8
Craft sector	32.1
Professions	8.4
Public sector	2.5
Agriculture	2.4
Home economics	0.8

Table II Distribution of apprentices (stock) according to area of employment (1999) (former West Germany)

Area of employment	(%)
Industry and trade	49.0
Craft sector	35.6
Professions	9.8
Public sector	2.8
Agriculture	2.1
Home economics	0.7

Table III Share of female apprentices according to area of employment (1999) (former West Germany)

Area of employment	(%)
All branches	41.0
Industry and trade	42.4
Craft sector	22.4
Professions	95.6
Public sector	61.8
Agriculture	26.6
Home economics	95.6

Table IV Favourite occupations of male new entrants (1999) (all Germany)

Occupation	(%)
Car mechanic	6.5
Painter and varnisher	4.8
Joiner	4.2
Electrical fitter	4.0
Retail clerk	3.6

Table V Favourite occupations of female new entrants (1999) (all Germany)

Occupation	(%)
Office clerk	8.4
Retail clerk	7.5
Hairdresser	6.3
Medical assistant	6.0
Industrial clerk	4.9

Table VI Educational background of new entrants (1999) (all Germany)

Education	(%)
Lower secondary school	31.9
Intermediate secondary school	36.6
Grammar school	16.0
Vocational schools	12.8
No school qualification	2.5

Table VII Most favoured occupation of new entrants according to educational background (1999) (all Germany)

Occupation	(%) ^a
<i>Lower</i>	
Shop assistant in grocery	65.8
<i>Intermediate</i>	
Medical assistant	60.6
<i>Grammar</i>	
Banking clerk	68.4

Note: ^aPercentage figures refer to share of apprentices with this educational background amongst all apprentices in the occupation

Segmentation features strongly in a training system that is generally taken to be “universal” or “comprehensive”.

Concentration in commercial occupations according to educational background seems to be strongest in the case of grammar school leavers. Although the general “participation quota” (which depicts the number of school-leavers who actually enter dual training after leaving general schools) has declined over the past ten years (from 74 percent down to 57 percent) a survey published by the Federal Institute of Vocational Training (Althoff, 1999) revealed that participation among lower secondary school leavers (*Hauptschulen*) is still very strong (72 percent enter dual training). The recent Federal Training Report puts their share in the craft sector to 48.8 percent among all apprentices in 1999.

The strong contribution of small businesses to the supply of training opportunities within the Dual System is underlined by the fact that the crafts form the second largest segment of the German apprenticeship system.

Currently, 125 occupations are defined as “craft occupations” which can be subdivided into seven occupational groups. The latter can either be a sector of the economy (such as construction) or a bundle of occupations related to each other through a common technical application or material (such as the non-industrial electrical or metal trades forming one group)[12]. Among them, the ten “most favoured occupations” – three in the case of female trainees and seven in the case of males – are in craft occupations. It is remarkable that 28 percent of all male apprentices are trained in these seven occupations. Besides this concentration, the crafts also include the occupation which is most frequently nominated by young people in general, – i.e. car mechanic – with a proportion of 48.1 percent (1999) entering as lower secondary school leavers. Occupations that have even more than 50 percent of new entrants coming from the lower secondary schools, such as hairdresser (55.3 percent), or grocery (65.8 percent), are also craft occupations.

Against this background, the craft sector has developed a reputation for being the more usual vocational route for practically gifted young adults. This is partly due to the fact that there are only a few chances for lower secondary school leavers to enter an apprenticeship in the information technology

(IT) sector (Müller *et al.*, 1997) as most companies prefer grammar school-leavers or at least an intermediate secondary school-leaver's certificate (Bundesministerium für Bildung und Forschung, 1999, p. 62, 64). Specific training opportunities in the Dual System are associated with a certain educational standard (Rösner, 1998, p. 47) which varies regionally, as the proportion of lower secondary school students differs substantially between federal states, depending on their respective policy of opening up the higher education sector. Hence, students from the lower secondary schools not only face difficulties in the training market because it has tightened up but also due to the fact that they originate from schools with the worst reputation[13].

It is evident from training statistics that small businesses (with up to 49 employees) are strongly involved in training (see Table VIII). Although the share of enterprises committed to apprenticeship is lower than in the case of larger businesses (with more than 500 employees, 17.1 percent as against 94.5 percent) actual "training quota" (which is the share of apprentices among all employees) is actually higher, as is their relative contribution in financial and organisational terms. The following table shows the significance of the apprentices' distribution according to size of firm and by "training quota" (Bundesministerium für Bildung und Forschung, 1999, pp. 130-8). It can be seen that the "training quota" of small firms employing 1 to 49 individuals is higher than that of medium and large businesses as well as the overall average.

Most craft businesses train more young people than they can or will employ in due course. Correspondingly, the decrease in the training supply during the 1990s has been weaker in the craft sector: whereas between 1991 and 1995 the number of new entrants in banking fell by nearly 30 percent, it actually rose in some craft occupations. Euler (1998,

pp. 69-71) argues that in larger enterprises the process of cutting down training opportunities seems to be ongoing, while in smaller companies this ceased in 1995. Thus, in 1997, the craft-based construction sector was the strongest contributor in terms of the "training quota": both in the Eastern and Western federal states this stood at a remarkable 10.2 percent and 9.3 percent respectively. The only branch reporting a comparable training intensity in the same year was the hotel and catering sector in the new federal states, with a rate of 10 percent (Bundesministerium für Bildung und Forschung, 1999, p. 131; Kau *et al.*, 1998, p. 57). It is sometimes argued that, amongst other factors, the net cost of training in the craft sector which is lower than in industry and commerce, could be responsible for such higher rates of training (Bardeleben *et al.*, 1995, p. 49).

Training schemes in the craft sector

The fact that the master certificate still represents the most valuable and significant single manual qualification in German industry is closely associated with the tradition described earlier in this paper[14]. The status of the master also includes a pedagogical function associated with the notion of a skilled craftsman who passes on his skills, experience and knowledge to the younger generation. It may well be claimed that this idea is largely absent in the UK where industrial patterns and traditions of skill formation have emerged from a different course of development (Dickinson and Erben, 1985; Deissinger, 1994). Against the background of trade legislation and the availability of a handicraft trade law besides the Vocational Training Act, it may be argued that training in small businesses in Germany is mainly the responsibility of a skilled master. This notion is strengthened by the common

Table VIII Training statistics

Number of employees	Contribution to all apprenticeships (%)	Share of training companies (%)	Training quota (%)
1 to 9	18.6	17.1	8.1
10 to 49	33.1	47.0	6.6
50 to 499	27.8	68.5	4.6
500 plus	20.4	94.5	4.3
All companies	100	24.0	5.6

conviction in Germany that a master must head a small craft business. Statements from the German Craft Association, trade unions and the Federal Government indicate that there is no realistic chance of “dumping” this requirement although it is unique as a national pattern of trade regulations in the face of European integration. As early as 1961, the Federal Constitutional Court decided that the “big qualification requirement” – which is the master certificate’s relevance to the establishment of a craft business – was in fact compatible with both the freedom of trade and the individual’s choice of occupations, guaranteed by the German constitution as a “basic right”. It is evidence of the social and political importance of the issue that the highest German court confirmed this decision as recently as 1998[15].

Despite adhering to a reliable legal framework, considered to be a central prerequisite for securing training conditions and quality as well as professional standards, awareness of the need to modernise German VET in terms of training content and new technologies resulted in some reforming efforts over the last 15 years (see Table IX). The modernisation attempted to link the traditional notion of “vocationalism” or “occupational orientation” (Deissinger, 1998) to the changing nature of work and technology in trade and industry. Thus, the basic principles underlying the revision of training schemes may be summarised as follows:

- The objective of vocational training should correspond with the mobility and flexibility demands required by skilled employees.

- Training contents need to be specified in a clearly defined course of training that offers the opportunity for young people to develop skills on a broader basis.
- Training should enable future employees to develop competences which allow them to plan, execute and check their work.
- Training needs to be the first stage in the context of “life-long learning” by opening up various ways of further training as well as giving employees the opportunity to adapt to changing work environments and techniques.
- Training should be in line with the growing importance of communication skills and also geared to social contexts that stress the organisational benefits of team work and customer orientation (Steeger, 1999, p. 1; Sander, 1998).

Since the passing of the Vocational Training Act in 1969, nearly all training ordinances have undergone some kind of revision or re-definition and new schemes have been created (Deissinger, 2001a). These occupations now cover some 97 percent of all apprentices in the Dual System. In 1997, 49 out of the 348 skilled occupations were either newly created or received some kind of fundamental re-definition of training objectives and contents (Bundesministerium für Bildung und Forschung, 1999, p. 86).

Major innovations included the substantial re-definition and re-organisation of training schemes in the metal and electrical trades and in two popular commercial occupations – i.e. office clerk and communications clerk (Borch *et al.*, 1991; Stiller, 1992; Reinisch, 1993).

The latest and probably the most promising modernisation project initiated the IT occupations, which now take the Dual System well beyond its craft-based past (Müller *et al.*, 1997). These four occupations link modern IT and data processing with technical and commercial applications[16].

From an educational point of view, training for these occupations also implies using new ways of teaching techniques and training arrangements (Pätzold, 1990; Benner, 1994). This modernisation may be seen as an attempt to give the craft sector a more up-dated outlook in the face of globalisation and internationalisation of the economy (Klein, 1989).

Table IX Modernisation of training occupations, 1996-2001

	New occupations	Modernised occupations	Total
1996	3	18	21
1997	14	35	49
1998	11	18	29
1999	4	26	30
2000	4	9	13
2001	3	8	11
1996-2001	39	114	153
1980-1996	14	166	180

A second major innovation may be seen in the re-definition of training schemes underlying apprenticeship in the office clerk's occupation which is one of the few commercial training profiles in the craft sector and also a typical example of a small business qualification (Reinisch, 1993, Buschfeld *et al.*, 1999, p. 35).

Both schemes are supposed to represent progress in training quality and in the adaptation of training to new working contexts by offering qualifications in computing and communication technology. There is still an emphasis on a basic or common training unit within the three or three and a half years training period but either scheme offers an individual approach. Hence, it is apparent that, in the case of the office clerk, core or key qualifications (*Schlüsselqualifikationen*) are rated higher than in the case of the electrical fitter. They are supposed to stretch over the whole training period and by adding those qualifications common to related occupations (in this case the communications clerk) these are defined as *Sockelqualifikationen* or "fundamental qualifications".

Figures 1 and 2 outline the two different approaches in the formation of a training structure.

Concluding remarks

Quite obviously, the small business dominated craft sector is still a training segment within the Dual System of training in Germany, where the importance of practical experience is more strongly emphasised than the systematic approach underlying all the modern training schemes that were implemented during the 1980s and 1990s. This can be illustrated by reference to the classical "mono occupations" which dominate training statistics, such as the car mechanic or the hairdresser sectors. This is largely due to the fact that craft apprenticeships in Germany provide continuity with the past by building upon established training models (Raggatt, 1988, p. 176). Nevertheless re-organisation in crucial occupational fields has taken place in the craft sector and implications of this policy upon small business training can be found in relevant ordinances and vocational school curricula alike. Moreover, it has to be acknowledged that the quantitative contribution to training placements from crafts is undoubtedly fundamental to the German economy as a whole. Nevertheless, the craft sector faces structural problems and their dependence upon the demand side of the training market is obvious, in particular in terms of preferences for school-leavers and educational standards delivered by the school system. As to the future of the Dual System of training, the crucial question might be whether the rapidly expanding services sector will be willing or able to follow a comparable "philosophy" of training. Possibly, the future attractiveness of the "German Dual System" of initial vocational training (Greinert, 1994) will also be depend upon other nations' experiences with more "open" systems of skills formation and their functional links, both in quantitative and in qualitative terms, with national and international labour markets.

Notes

- 1 See Federal Training Report 2001 (www.bmbf.de).
- 2 The 1999 figures point out that the number of apprenticeships actually rose by 3.6 percent within one year which seems to be due to public subsidies (Zedler, 2000, p. 14).
- 3 See *Sudkurier*, 1999.

Figure 1 Office clerk – profile of training structure

Figure 2 Electrical occupations – profile of training structure

- 4 Unemployment rates (April 2001): general rate – 9.5 percent; youngsters under 25 years – 9.1 percent; foreigners – 16.8 percent (www.arbeitsamt.de).
- 5 Data drawn from the homepage of the Federal Institute of Vocational Training (www.bibb.de) – See also Bundesministerium für Bildung und Forschung (1999, p. 137).
- 6 Although the rate of companies that actually train is lower in the case of small enterprises (one to nine employees) than in the case of the 500 plus firms, in 1999 the former ones represented 56 percent of all training companies in Germany (Bundesministerium für Bildung und Forschung (2001, pp. 106-13).
- 7 See www.bmbf.de (digital publications) and www.zdh.de.
- 8 "In 1881, craftsmen achieved the legal recognition of their guilds, which, by the same law, also received certain privileges in the training of apprentices. In 1884, another law provided, in certain circumstances, the restriction to guild members of the right to have apprentices (Winkler, 1976, p. 2).
- 9 In the UK, the Modern Apprenticeship Scheme is expected to provide more structured training opportunities, although MA remains attached to the NVQ system. As the latter obviously differs markedly from traditional notions of structured, examination-based training, deviations from the German approach are likely to remain even if the MA scheme should become successful (for critical views, see Vickerstaff, 1998; Fuller and Unwin, 1998; Ryan, 2001).
- 10 For statistical details see the Web site of the Central Association of the German Craft Trades (Zentralverband des Deutschen Handwerks): www.zdh.de.
- 11 For relevant statistics, see Bundesministerium für Bildung und Forschung (1999; 2001), and www.bmbf.de.
- 12 Masons, butchers, bakers, hairdressers and radio and television technicians are examples of typical handicraft occupations.
- 13 In some regions of Germany this has led to a dramatic decrease in the number of lower secondary schools and falling numbers of students, such as in Berlin, Bremen, Hamburg, Hessen or the Saarland (Rosner, 1998, p. 49).
- 14 In 1997, there were 52,462 master examinations that were passed. Among these 38,445 certificates were issued in the craft sector and 11,283 were issued as industrial master certificates (Bundesministerium für Bildung und Forschung, 1999, p. 113).
- 15 See "zdh inform" (27 July 1999) (www.zdh.de/akinfo/archiv/zdh).
- 16 In the four new IT occupations, the number of trainees rose by an impressive 88 percent within one year, from 1998 to 1999 (www.bmbf.de).

References

- Althoff, H. (1999), "Der Übergang in die betriebliche Berufsausbildung, 1977-1997", *Berufsbildung in Wissenschaft und Praxis*, Vol. 28 No. 1, pp. 7-11.
- Baethge, M. and Baethge-Kinsky, V. (1998), "Jenseits von Beruf und Beruflichkeit? – neue Formen von Arbeitsorganisation und Beschäftigung und ihre Bedeutung für eine zentrale Kategorie gesellschaftlicher Integration", *Mitteilungen aus der Arbeitsmarkt und Berufsforschung*, Vol. 31, pp. 461-72.
- Bardeleben, R.v. Beicht, U. and Feher, K. (1995), *Betriebliche Kosten und Nutzen der Ausbildung, Repräsentative Ergebnisse aus Industrie, Handel und Handwerk*, Bielefeld, W. Bertelsmann.
- Beck, U., Brater, M. and Daheim, H. (1980), *Soziologie der Arbeit und der Berufe, Grundlagen, Problemfelder, Forschungsergebnisse*, Reinbek bei Hamburg, Rowohlt.
- Benner, H. (1987), "Arbeiten zur Ordnung der Berufsausbildung vom DATS bis zum BiBB", in Greinert, W.-D. et al. (Eds), *Berufsausbildung und Industrie, Zur Herausbildung industrietypischer Lehrlingsausbildung*, BiBB, Berlin, pp. 269-93.
- Benner, H. (1994), "Zur Neuordnung der Ausbildungsberufe im Berufsfeld Wirtschaft und Verwaltung", in Kell, A. Schanz, H. (Eds), *Computer und Berufsbildung, Beiträge zur Didaktik neuer Informations und Kommunikationstechniken in der kaufmännischen Berufsbildung*, Holland & Josenhans, Stuttgart, pp. 58-75.
- Blackbourn, D. (1977), "The Mittelstand in German society and politics, 1871-1914", *Social History*, Vol. 4, pp. 409-33.
- Borch, H. et al. (1991), "Die neu geordneten industriellen Metall- und Elektroberufe unter dem Aspekt neuer Technologien", in Bonz, B. Lipsmeier, A. (Eds), *Computer und Berufsbildung. Beiträge zur Didaktik neuer Technologien in der gewerblich-technischen Berufsbildung*, Holland & Josenhans, Stuttgart, pp. 139-54.
- Brown, A. and Evans, K. (1994), "Changing the training culture: lessons from Anglo-German comparisons of vocational education and training", *British Journal of Education and Work*, Vol. 7 No. 2, pp. 5-15.
- Buchtemann, C., Schupp, J. and Soloff, D.J. (1993), *Übergänge von der Schule in den Beruf – Deutschland und USA im Vergleich, Mitteilungen aus der Arbeitsmarkt und Berufsforschung*, Vol. 26, pp. 507-20.
- Bundesministerium für Arbeit und Sozialordnung Bundesministerium für Bildung und Forschung (1999), "Eckpunkte für ein Sofortprogramm zum Abbau der Jugendarbeitslosigkeit – Ausbildung, Qualifizierung und Beschäftigung Jugendlicher", *Beilage zur Zeitschrift Berufsbildung in Wissenschaft und Praxis*, 1/1999, BiBB, Berlin.
- Bundesministerium für Bildung und Forschung (1999), *Berufsbildungsbericht 1999*, BMBF, Bonn.
- Bundesministerium für Bildung und Forschung (2001), *Berufsbildungsbericht 2001*, BMBF, Bonn.
- Buschfeld, D. et al. (1999), *Ausbildung von Bürokaufleuten im Rahmen einer Lernortkooperation*, FBH/EuS, Köln.

- Deissinger, T. (1994), "The evolution of the modern vocational training systems in England and Germany: a comparative view", *A Journal of Comparative Education*, Vol. 24 No. 1, pp. 17-36.
- Deissinger, T. (1996), "Germany's Vocational Training Act: its function as an instrument of quality control within a tradition-based vocational training system", *Oxford Review of Education*, Vol. 22 No. 3, pp. 317-36.
- Deissinger, T. (1998), *Beruflichkeit als "organisierendes Prinzip" der deutschen Berufsausbildung*, Markt Schwaben (Eusl).
- Deissinger, T. (1999), "Beruflichkeit als zusammenhang. ein vergleich mit England", in Harney, K. Tenorth, H.-E. (Eds), *Beruf und Berufsbildung. Situation, Reformperspektiven, Gestaltungsmöglichkeiten* (40. Beiheft zur Zeitschrift für Padagogik), Beltz, Weinheim, pp. 189-207.
- Deissinger, T. (2001a), "Modularisierung und beruflichkeit – überlegungen zur differenzierung eines vermeintlichen gegensatzes", in Reinisch, H., Bader, R. and Straka, G.A. (Eds), *Modernisierung der Berufsbildung in Europa. Neue Befunde der berufs- und wirtschaftspadagogischen Forschung*, Leske und Budrich, Opladen, pp. 195-204.
- Deissinger, T. (2001b), "Entwicklung didaktisch-curricularer vorgaben für die berufsbildung in Deutschland", in Bonz, B. (Ed.), *Didaktik der beruflichen Bildung*, Schneider, Baltmannsweiler, pp. 71-87.
- Dickinson, H. and Erben, M. (1985), "An aspect of industrial training in the Federal Republic of Germany: sociological considerations on the role of the meister", *Journal of Further and Higher Education*, Vol. 9 No. 2, pp. 69-76.
- Euler, D. (1998), *Modernisierung des dualen Systems – Problembereiche, Reformvorschläge, Konsens- und Dissenslinien (Materialien zur Bildungsplanung und zur Forschungsförderung)*, BLK, Bonn.
- Fuller, A. and Unwin, L. (1998), "Reconceptualising apprenticeship: exploring the relationship between work and learning", *Journal of Vocational Education and Training*, Vol. 50, pp. 153-71.
- Géhin, J.P. and Méhaut, P. (1995), "The German dual system: a model for Europe?", *Industrielle Beziehungen*, Vol. 2 No. 1, pp. 64-81.
- Geissler, K.A. (1991), "Das duale system der industriellen berufsausbildung hat keine zukunft", *Leviathan*, Vol. 19, pp. 68-77.
- Greinert, W.-D. (1994), *The "German System" of Vocational Training. History, Organization, Prospects*, Nomos, Baden-Baden.
- Harney, K. (1985), "Der beruf als umwelt des betriebs. Vergleichende, historische und systematische aspekte einer differenz", in Verbands der Lehrer an beruflichen Schulen in Nordrhein-Westfalen (Eds), *Die Relevanz neuer Technologien für die Berufsausbildung*, Krefeld, pp. 118-30.
- Harney, K. (1997), "Geschichte der berufsbildung", in Harney, K. Kruger, H.-H. (Eds), *Einführung in die Geschichte der Erziehungswissenschaft und Erziehungswirklichkeit*, Leske und Budrich, Opladen, pp. 209-45.
- Kau, W. et al. (1998), *Berufsausbildung hat Zukunft – Ergebnisse einer Befragung von Mittel und Großbetrieben (Berichte zur beruflichen Bildung, H. 223)*, W. Bertelsmann, Bielefeld.
- Klein, H.-J. (1989), "Die neuordnung der industriellen metall- sowie der handwerklichen elektroberufe unter besonderer berücksichtigung der neuen technologien", *Erziehungswissenschaft und Beruf*, Vol. 37, pp. 98-104.
- Knorr, M. (1996), *Die Berufszulassung zum handwerk seit dem ende des alten reiches*, Dissertation, Nürnberg.
- Konietzka, D. and Lempert, W. (1998), "Mythos und realität der krise der beruflichen bildung. Der stellenwert der berufsausbildung in den lebensverläufen verschiedener geburtskohorten", *Zeitschrift für Berufs- und Wirtschaftspadagogik*, Vol. 94, pp. 321-39.
- Maurice, M. (1993), "The link between the firm and the educational system in vocational training: the cases of France, Germany, and Japan", *Vocational Training. International Perspectives*, Department of Industrial Relations, Laval, Quebec, pp. 43-69.
- Maurice, M., Sellier, F. and Silvestre, J.-J. (1979), *Die Entwicklung der Hierarchie im Industrieunternehmen: Untersuchung eines gesellschaftlichen Effektes*, Soziale Welt, Vol. 30, pp. 295-327.
- Müller, K., Haussler, J. and Sonnek, W. (1997), *Die neuen Ausbildungsberufe der Informations- und Telekommunikationstechnik (IT-Berufe)*, Deutscher Instituts-Verlag, Köln.
- Patzold, G. (1990), "Neue ausbildungsberufe, berufliche handlungskompetenz, didaktisches handeln und lernortkooperation", in Patzold, G. (Ed.), *Lernortkooperation: Impulse für die Zusammenarbeit in der beruflichen Bildung*, Sauer, Heidelberg, pp. 159-80.
- Raggatt, P. (1988), "Quality control in the dual system of West Germany", *Oxford Review of Education*, Vol. 14, pp. 163-86.
- Reinisch, H. (1993), "Was ist neu an der neuordnung der buroberufe? – einschätzungen aus wirtschaftspadagogischer sicht", *Zeitschrift für Berufs- und Wirtschaftspadagogik*, Vol. 89, pp. 134-48.
- Rosner, E. (1998), "Hauptschule. Oder: von der schule für "Mehr als die Hälfte aller Kinder" zum "Sorgenkind im Schulwesen", *Padagogik*, Vol. 50 No. 2, pp. 46-51.
- Ryan, P. (2001), "Apprenticeship in Britain: tradition and innovation", in Deissinger, T. (Ed.), *Berufsbildung zwischen nationaler Tradition und globaler Entwicklung – Beiträge zur Vergleichenden Berufsbildungsforschung*, Nomos, Baden-Baden (in print).
- Sander, M. (1998), "Lernen im kundenauftrag – zur bestimmung von aufgaben zwischen betrieb und schule", in Patt, D., Gerwin, W., Hoppe, M. (Eds), *Kooperieren und Qualifizieren im Handwerk (Berichte zur beruflichen Bildung, H. 222)*, W. Bertelsmann, Bielefeld, pp. 75-94.
- Schluter, A. and Stratmann, K. (Eds) (1985), *Quellen und Dokumente zur betrieblichen Berufsbildung, 1869-1918*, Bohlau, Köln.
- Steeger, G. (1999), *Zukünftiger Weiterbildungsbedarf im Handwerk*, FBH/Eusl, Köln.
- Stiller, I. (1992), "Zur entwicklung der kaufmannischen und verwaltenden ausbildungsberufe", in Bundesinstitut für Berufsbildung (Ed.), *Innovationen*

- in der beruflichen Bildung. Hermann Schmitt zum 60. Geburtstag, BiBB, Berlin, pp. 327-45.
- Stratmann, K. and Patzold, G. (1984), "Institutionalisierung der berufsbildung", in Baethge, M. Nevermann, K. (Eds), *Enzyklopadie Erziehungswissenschaft, Bd. 5: Organisation, Recht und Okonomie des Bildungswesens*, Klett-Cotta, Stuttgart, pp. 114-34.
- Stratmann, K. and Schluter, A. (Eds) (1982), *Quellen und Dokumente zur Berufsbildung, 1794-1869*, Bohlau, Koln.
- Sudkuner (1999), 20 October.
- Timmermann, D. (1994), "Die ruckentwicklung der arbeitsmarktchancen und-risiken von fachkräften: ruckblick und ausblick", in Liesering, S., Schober, K. and Tessaring, M. (Eds), *Die Zukunft der dualen Berufsausbildung. Eine Fachtagung der Bundesanstalt für Arbeit*, Bundesanstalt für Arbeit, Nürnberg, pp. 81-109.
- Vickerstaff, S.H. (1998), "The delivery of modern apprenticeships: are training and enterprise councils the right mechanism?", *Journal of Vocational Education and Training*, Vol. 50, pp. 209-24.
- Winkler, H.A. (1976), "From social protectionism to national socialism: the German small-business movement in comparative perspective", *Journal of Modern History*, Vol. 48, pp. 1-18.
- Zabeck, J. (1975), *Die Bedeutung des Selbstverwaltungsprinzips für die Effizienz der betrieblichen Ausbildung. Untersuchung im Auftrage des Ministers für Wirtschaft, Mittelstand und Verkehr des Landes Nordrhein-Westfalen*, Mannheim.
- Zabeck, J. (1979), "Bildungs- und beschäftigungswesen", in Bundesanstalt für Arbeit (Ed.), *Handbuch zur Berufswahlvorbereitung*, Bundesanstalt für Arbeit, Nürnberg, pp. 225-32.
- Zedler, R. (2000), "Berufsausbildung in Deutschland – situation und perspektive", *Wirtschaft und Berufserziehung*, Vol. 52 No. 6, pp. 13-7.

Further reading

- Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie (1998), *Berufsbildungsbericht 1998*, BMBWFT, Bonn.
- Schelten, A. (1991), *Einführung in die Berufspädagogik*, Steiner, Stuttgart.