

A phoenix from the ashes of apprenticeship? Vocational training in Britain

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1. Introduction

There is a paradox about intermediate-level vocational training in British industry. Apprenticeship, the backbone of Britain's industrial skills until the mid-1960s, has declined since then,¹ giving rise to the strong impression that, compared with Britain's main trading partners, her workforce is relatively under-skilled and her employers are reluctant to train. This view has been reinforced by persistent reports from employers of skill shortages, and has been used to explain Britain's disappointing productivity performance (e.g., Prais, 1981). Yet, the first survey to attempt to measure the extent of employer training on a nationally representative basis indicated that employers invested considerable sums in training their workforces, possibly as much as £18 billion per year, or 4.6% of GDP. Even correcting for possible errors in the estimates, Ryan (1991) argued that employers spent no less than 3% of GDP. A figure of comparable magnitude, albeit slightly lower, can be calculated for manufacturing (see Section 5). This article explores the nature of this paradox, using it to unravel the significance of current reforms of vocational training in Britain.

The story of intermediate-level vocational training to be told in this paper concerns primarily the decline of the apprenticeship system from the mid-1960s, which involved the breakdown of its regulatory framework and the subsequent decline in apprentice numbers. A somewhat different picture prevailed in occupations such as nursing and teaching, and in some of the nationalised industries, where training was less exposed to the cost pressures on private firms, and less dependent upon multi-employer training systems. Despite the decline of the apprenticeship system, it is argued that employers nevertheless still devote large resources to training, but in the absence of a suitable language for codifying and classifying the resultant skills they are neither transferable nor easily used as a basis for further training. There is therefore a great under-utilisation of skills. The current attempt to build a new system for codifying skills based on recognised competencies

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¹ In the mid-1960s the annual intake of male school leaver apprentices into manufacturing peaked at about 110,000 out of a quarter of a million young male entrants (DE, 1971, Table 158).

has therefore much to offer, but, it is argued, it will also need to resolve the pressures which contributed to the decline of apprenticeship if it is to succeed.

The British experience is also of wider interest. Many other countries face similar problems of developing enterprise-based training systems that support certified transferable skills. They seek to emulate aspects of the German system, which relies heavily upon the commitment of large numbers of employers who know that the training they offer is of great value to other employers, and that the apprenticeship certificate makes its content transparent. The advantages of self-regulation in such areas as training are considerable, as is argued later, yet free-rider problems can easily erode them unless there is some kind of commitment among the parties involved, and an institutional structure to sustain it. In Germany, there is a strong tradition of collective organisation among employers, and this has supported the structure of incentives that has enabled the German training system to weather the crises that eroded apprenticeship in Britain. The experience of many other industrial countries is closer to that of Britain than of Germany in this domain, so it is of considerable interest to discover whether the state can set up a functional equivalent to the micro-corporatism of German employers in vocational training, and then get the employers to take it over.

2. The vacuum left by apprenticeship

For most of this century, apprenticeship has provided young school leavers with the opportunity of entering employment and receiving recognised skill training simultaneously. Typically, young apprentices would embark on their training at the minimum school-leaving age, raised to 16 in 1972, and receive a 3- or 4-year spell of on-the-job training supervised by experienced skilled workers, combined with theoretical instruction in local technical colleges. In addition to their technical skills, young workers would be socialised into the world of work and into the norms of the trade they were entering, and in many branches trade unions played an important, albeit uneven, part in the general regulation of their work. The cost of apprenticeship was largely shared between employers and apprentices by means of a special trainee rate of pay below that of skilled adults, and mostly below that of unskilled young.¹

Until the early 1980s, apprenticeship played a pivotal role in the formation of blue-collar skills in Britain, and its decline has dominated debates about training in Britain over the last three decades. As late as 1981, Labour Force Survey estimates showed that more employees held an apprenticeship than any other single qualification, exceeded only by those with no qualifications.² Over one in four male employees had served an apprenticeship, and in manufacturing and construction the figure stood at around 40%. In the skill-intensive blue-collar occupations, over half had served an apprenticeship. Some of the others had secondary school diplomas, but the great majority of them had no qualifications. Among women,

¹ After the 1964 Industrial Training Act, a system of levies on employers and of grants to those providing training was set up to help spread the costs of training among employers. However, it was widely opposed by employers, and subsequently reduced.

² The percentages relate to persons in employment aged 16-59. The results are based on the 1981 Labour Force Survey reported in DE, 1983.

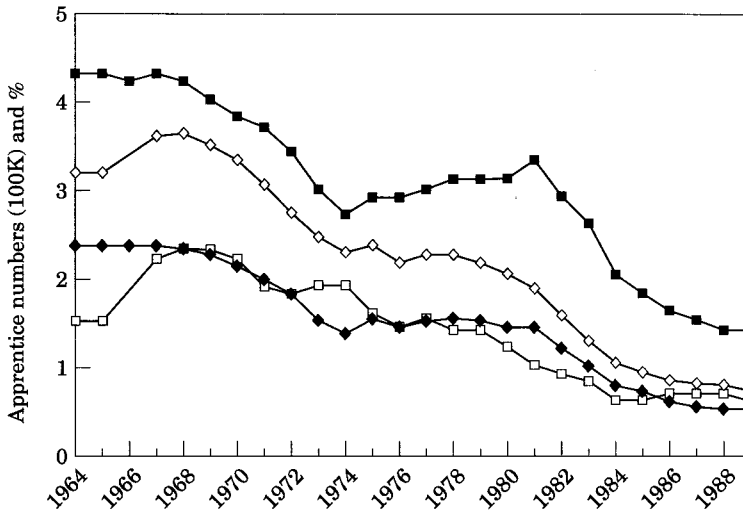


Fig. 1. *The decline of apprenticeship training in manufacturing, 1964–1989. (Males in 100,000 and as % of male employees.)* —■—, apprentice % of male employees; —◇—, apprentices and trainees ($\times 100,000$); —◆—, apprentices ($\times 100,000$); —□—, trainee % of all male employees. Source: Employment Gazette various years, data for March of each year. Note: Change to 1980 SIC in 1984. From 1984/85, many new apprentices came under YTS and so were excluded from the survey. Series discontinued after 1989. Numbers based on employer assessment.

apprenticeship has been negligible outside catering and hairdressing, and secondary school qualifications have dominated, along with those for nursing and teaching. But as with males, those without formal qualifications were the largest single group.

According to the employer-based surveys of the late 1970s and early 1980s, two-thirds of the skilled labour requirements in industry in 1978 were met either by training apprentices or by direct external recruitment of skilled labour needing no additional training. Less than one skilled worker in seven was upgraded with training after having been recruited into semi-skilled or unskilled positions. The commonest pattern was that of direct external recruitment with no additional training (Brown, 1981, Table 6.3), which implies the possession of recognised, transferable skills. The 1984 Workplace Industrial Relations Survey confirmed that external recruitment for skilled manual workers in private sector manufacturing was more than three times more common than internal recruitment (Millward and Stephens, 1986, Tables 8.1, 8.4).

The infrequency of upgrading into skilled positions highlights both the power of those with apprenticeship-based skills to resist 'dilution' of their skills, and the limited use of internal labour markets by industrial employers. It also illustrates the difficulties facing those who, for one reason or another, had not obtained initial vocational qualifications.

The decline in manufacturing apprenticeships has been sharp, by over a third between 1967 and 1977, and by almost a third as a fraction of male manufacturing employment.¹ The evidence in Fig. 1 shows that there was no

¹ Nearly all apprentices in that sector were male and were destined for craft jobs, also the preserve of males.

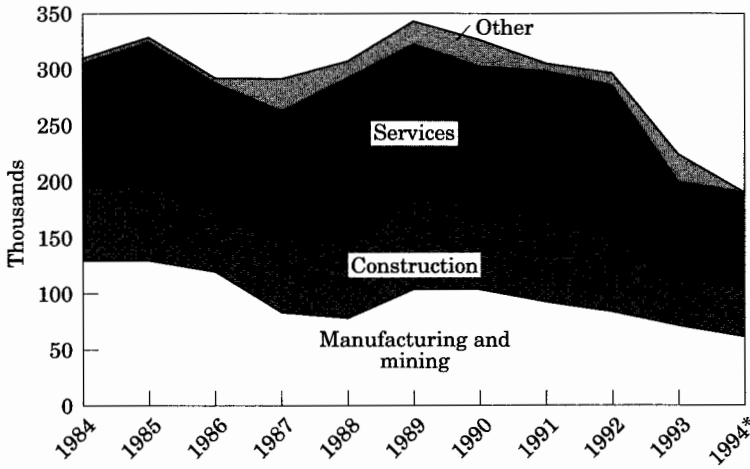


Fig. 2. *Apprentice numbers 1984–1994 (males and females)*. Source: Labour Force Survey, DE, 1994. Note: 1994, new industrial classification.

compensating increase in other types of trainees; the decline was precipitous for all (DE, 1980, p. 947). During the 1980s, the decline in apprenticeship training continued, but at a rate closer to that of manufacturing employment generally. From 1984, these figures become less reliable due to the exclusion of a number of first year apprentices who entered apprenticeship via the Youth Training Scheme (YTS).

Labour Force Survey estimates using self-assessment rather than employer returns (DE, 1988, p. 140, 1994) show a smaller decline in the employment share of apprentices, from 2.6% of all male employees of working age in 1979 to 2.3% in 1986. After 1987, there was a partial recovery, but to a rate less than half of that of the late 1960s (DE, 1992, p. 384).

Figure 2 provides a wider view, including apprenticeships in service sectors which have, albeit less dramatically, moved similarly to manufacturing. Many of the apprentices there are employed in such activities as repair workshops, transport, and local government services. With the increasing sophistication of industrial processes, training in these skills is becoming less easily adaptable to industrial needs, and so does not provide a ready substitute. Unfortunately, the published series do not enable comparison with the years of steep decline in manufacturing apprentices.

Although the decline in apprentice numbers only started in the late 1960s, the apprenticeship system then was already in a state of crisis. Particular concerns of the Industrial Training Boards, set up by the 1964 Industrial Training Act, were to raise the quality of the technical training and to establish a system of levies and grants to spread costs more evenly among employers. The German apprenticeship system went through a similar modernisation in the 1960s, and measures to raise standards were also implemented there. However, Germany's subsequent course stands in marked contrast to Britain's.

3. The impact of the decline of apprenticeships

It might be argued that the decline in apprenticeship, especially in industry, simply reflected the decline in the demand for skilled labour because of the general decline in manufacturing employment. There is some truth in this, although it does not explain the fall in the apprentice share in employment. In particular, the decline in apprenticeship has coincided with persistent skill shortages, and a tendency for British firms to concentrate on less skill-intensive activities.

A failure of the training system to respond to increases in labour demand can be measured by the number of firms reporting shortages of skilled workers. At the cyclical peaks during the 1970s and 1980s, between a fifth and a quarter of the firms covered by the CBI's Industrial Trends Survey reported shortages of skilled labour, whereas those reporting shortages of unskilled labour were around 5%.¹ Only during the collapse of industrial employment between 1981 and 1983 did firms stop reporting that skill shortages were holding back their output. Even though the percentage of firms reporting skill shortages again dropped in the 1991–1993 recession, in a number of key industries it remained high. Overall, skill shortages have persisted despite a tripling of unemployment over the same period, and a large number of the skilled themselves becoming unemployed.²

One might argue that employers will always report skill shortages when they answer questions which make no reference to price. A test therefore would be whether skill shortages affected other labour market indicators, such as wage pressures. Examining Britain's inflationary experience between 1956–1959 and 1980–1987, Nickell (1990) estimated that 'mismatch' was the largest single contributor to the rise in 'equilibrium' (constant inflation rate) unemployment, contributing roughly 2.5 of the 6.3 percentage point rise over the period.

Such skill constraints likely would cause British firms to tend to specialise in less skill-intensive activities as compared with Britain's main trading partners, such as Germany and France. Three pieces of evidence support that this has in fact occurred. First, a comparison of the British, French, and German engineering industries in the mid-1970s showed that, within the same four-digit industry headings, the British firms tended to specialise in the lower unit-value goods, with Britain importing products with higher unit-values and exporting those with lower ones. The median ratios of export to import unit-values were 0.88 for the UK, 1.07 for France, and 1.20 for Germany (Saunders, 1978). Second, comparing British and German manufacturing industries, Prais (1981) found that Germany's productivity advantage was greatest in the most skill-intensive branches. Finally, at the level of individual plants, in two narrowly defined industries, kitchen furniture

¹ In the CBI survey, firms are asked 'Do you expect output in the next 3 months to be constrained by a shortage of skilled labour?' (CBI Quarterly Survey of Manufacturing). A survey carried out by the Employment Department of hard-to-fill vacancies showed similar results, and confirmed that the largest single category of hard-to-fill vacancies over 1990–92 concerned craft and related skills (Selden, 1993).

² One symptom of shortage is that one of the chief reasons firms reported for the need to recruit extra skilled labour was that of labour turnover (Smith, 1990). The same survey reported that most firms seeking craft skilled labour expected to recruit labour that could be used directly, without additional training, and that lack of technical skills and lack of experience were among the main reasons for firms reporting a shortfall.

and women's outwear, Steedman and Wagner (1987, 1989) found that the British plants tended to specialise in more standardised products, used more tayloristic production methods, and had a generally less skilled workforce than their German counterparts.

If firms had chosen to specialise in such products for reasons unrelated to skills, then one would not have expected the persistent reports of skill shortages. Thus, there emerges a picture in which labour supply constraints on British manufacturing firms have caused them to specialise in less skill-intensive products.¹

Finogold and Soskice (1988) argued that such a situation represents a 'low-skill equilibrium' in which firms' choices of product market, production process, skill level, and training system are interdependent. Lack of available skills closes off the option of products which demand a high-skill input, but it also reduces future demand for skills, and therefore the willingness of employers to provide training. In contrast, the high-skill equilibrium links high availability of skills with firms' success in the production of skill-intensive products.

However, two doubts hang over the strong interpretation of the Finogold and Soskice view, namely, that it is indeed an equilibrium. First, the low-skill equilibrium would imply a low demand for skilled labour from employers. But the CBI evidence suggested persistence in the number of firms reporting skill shortages, despite the rise in unemployment. Second, to be discussed shortly (Section 5), it seems that British firms in fact spend a great deal on training.

4. The nature of the market failure

The relative failure of skilled labour markets to meet the needs of industry can be attributed in large part to a progressive erosion of their regulatory framework, and the failure of successive reforms to modernise apprenticeship training at a reasonable cost. To understand the failure, it is useful to explore the nature of the regulatory problems of markets for apprenticeship-trained skills. Becker's (1975) analysis of investment in 'general' or 'transferable' training showed that it depended upon a high degree of cost sharing between employers and trainees. In the case of perfectly general training, and under perfect competition, the trainee would bear the full cost because employers who did not train could always afford to offer higher pay, and so 'poach' those trained by others.

Faced with evidence that employers commonly do pay for even a considerable part of the cost of such general training, some writers have argued that there are a variety of frictions which would reduce turnover, and so enable employers to gain a return on investment in general training. Scoville (1969) suggested that firms could vary the mix of transferable and non-transferable training, designing jobs so as to reduce the risk of turnover. Katz and Ziderman (1990) argued similarly that because only the firms providing training would know the precise mix of general and firm-specific skills their workers obtain, their labour market competitors could not be sure of using such workers as effectively. As a result, their productivity in the new firm and

¹ Evidence to the Finnington Committee of Inquiry also indicated significant shortages at the technician level, such that many firms employed their graduate engineers on technician duties (Finnington, 1980, pp. 57-58, 189).

the corresponding wage offered would be lower. This informational asymmetry would discourage mobility. However, neither of these sources of friction is likely to be of major relevance to apprenticeship-based skills because of the standardisation of competencies acquired and the transparency given by certification.

A third friction, suggested by Stevens (1994), lies in recruitment costs.¹ If these are sufficiently high, then employers might still provide training for transferable skills. Although this has not been systematically tested at the firm level, there is widespread evidence that firms often respond to labour shortages by increasing training (e.g., Hunter, 1978; Smith, 1990),² and her econometric results provide a good fit for variations in engineering apprentice intakes. However, as will be seen below, the net costs incurred by employers in apprentice training are high, equivalent, on average, to between one and two years gross pay of a skilled adult, and it seems implausible that recruitment costs for this kind of labour would match them. The presence of such frictions, plus the simple costs to employees of changing jobs, mean that the pure version of Becker's model is unrealistic; nevertheless, it provides a good guide as to some of the fundamental problems of training for such skills.

Reliance on cost sharing³ implies two problems for employers and workers. Employers investing in transferable skills need some protection against poaching by non-training employers, and skilled workers need some protection against possible substitution by cheap trainees. If the fear of poaching is widespread, employers will be reluctant to fund transferable skills and are likely to respond in one of two ways: they may cut the volume of their transferable training, and they may seek to reduce the transferability of the skills they do provide.⁴ The first is likely to intensify shortages of transferable skills, and so weaken the corresponding occupational markets. The second is likely to reinforce enterprise internal labour markets as firms offer incentives to stay, and redesign jobs to make the skills associated with them less transparent and less transferable to other firms.

On the workers' side, special lower trainee rates of pay have been the commonest means by which apprentices contribute to the cost of their training. In the pure Becker model, completely transferable training would be paid for entirely by this means. However, such low trainee pay rates also pose something of a threat to skilled adult workers, especially if either they have bargained up their own pay rates (and so created an incentive for substitution by the employer), or if they suspect the employer

¹ The Employment Department survey listed five serious effects of hard-to-fill vacancies: reduced service, increased cost, restricted growth, loss of business, and higher recruiting costs. Small organisations in particular were vulnerable to these (Selden, 1993).

² Unfortunately, Hunter's survey did not specify the kind of training involved. However, Brown (1981, ch. 6) shows considerable numbers of skilled workers who had entered their firms as apprentices and stayed on, particularly in sectors with strong internal labour markets (such as steel), and in clothing, textiles, and timber, where upgrading from semi-skilled and unskilled to skilled positions was relatively more common.

³ In the limiting case of perfect competition, this would tend towards trainees bearing the full cost.

⁴ The most important 'drawback' cited by firms for training in the Training in Britain survey was that employees would leave for more pay and prospects. 38% of all firms cited this, ahead of 26% citing that employees would want more pay. In construction, 46% cited former trainees leaving, and distinguishing firms by whether training was above, on, or below average, 43% of those above or on average cited employees leaving against 30% of below average trainers (DE, 1989, Figs. 6.3, 6.4).

may cut training quality in order to make more use of trainees as cheap labour. Either way, low trainee pay becomes problematic to skilled adults and hence to their unions.

To deal with such pressures, unions representing skilled workers can respond in three ways: they can impose quotas on training places, the traditional regulatory mechanism of craft unions during the nineteenth century (Webb and Webb, 1902); they can try and bargain up apprentice pay to remove the cost incentive (Ryan, 1989); or they can seek to monitor training activities more closely.¹ In Britain, unions have generally responded along the second path, whereas in Germany they have generally opted for the third (Marsden and Ryan, 1990). The advantage of the second path, pay, is that it is easier to impose by 'remote control' in work places where unions are only weakly organised. In contrast, monitoring of training quality requires a stronger workplace presence.

Thus, reliance upon cost-sharing leaves occupational markets and their training systems on a knife-edge. The various frictions discussed earlier may impart some short-run stability. However, over the longer run, it is necessary either to have effective cost sharing or participation by all employers in training so that none suffers a competitive disadvantage. Once these become significantly eroded, it is likely that the system will enter long-term decline. This is what happened with the British apprentice system.

At the heart of the problem has been a failure to ensure adequate regulation and a consistency of quality of apprenticeship training and to keep down its cost to employers. Compared with the German system, apprentice pay in Britain drifted up during the 1960s and into the 1970s at the same time that parallel efforts were in progress to raise its quality, and, consequently, its cost. By the early 1980s, two-thirds of British costs were made up of trainee wages and one-third of training costs, whereas in Germany, in an apprenticeship system of roughly equivalent overall cost, the ratio was the reverse (Jones, 1985).

Between 1964 and 1975, the weekly pay of boys under 21 relative to adult males rose by 11 percentage points, from 45% to 56% of adult males' pay (Wells, 1983, p. 5). Indeed, over this period, youth relative pay in Britain showed the fastest rise in western Europe.² Three main factors appear to explain the rise: the raising of the school-leaving age, which removed 15-year olds from the labour market during the late 1960s and early 1970s;³ the raising of young workers' pay rates in collective agreements; and a general scarcity of young labour, which switched into excess supply for young males around 1969 and for young females around 1971 (Wells, 1983, ch. 4).⁴ Raising the school-leaving age caused average pay for those under 21 to rise by removing the lowest paid age group, and by reducing the supply of young workers. Wells (1983) shows that the rise in youth relative minimum pay rates in collective agreements preceded the rise in relative earnings, beginning in the early 1960s. There was also an acceleration from the early 1970s

¹ A full analysis of these three options is discussed in Ryan, 1994.

² The countries were Belgium, France, Germany, Italy, and the Netherlands (Marsden and Ryan, 1991).

³ Although the minimum school-leaving age was not raised until 1973, many school leavers in fact anticipated this change.

⁴ See debate between Wells and Junankar in Junankar, 1987.

in the reduction in the age at which young workers progressed onto adult pay rates. Similar movements can be traced in the weekly pay rates of apprentices in a number of industries.¹

At the same time, the work of the Industry Training Boards set up by the 1964 Industrial Training Act to modernise and raise the quality of apprenticeship training added considerably to its cost. Increasingly, apprentices followed formal off-the-job courses on day-release, limiting their availability for productive work. By the late 1970s, 90% of engineering craftsmen aged under 25 had obtained a recognised further educational qualification, against 80% of those aged over 45 who had no formal qualifications (Venning *et al.*, 1980).² In addition, the progressive reduction in the duration of apprenticeships over the post-war years to 3 years reduced the productive contribution of apprentices. Thus, over the period, the cost of apprenticeship training to employers was pushed up by increases in both apprentice pay and training costs.³

Nursing and teaching provide a marked contrast to the story of industrial apprenticeship since in both occupations trainees have, in the past, made an important contribution to total output. For example, in the UK in the late 1980s, about one in six of the nursing workforce were trainees. Particularly in nursing, there has been an increase in training costs owing to rising technical demands on nursing staff and the related decreasing scope for use of trainees in unskilled activities (Marsden, 1994). Yet the supply of training has largely avoided the

¹ For example, engineering apprentices' weekly pay rates as a percentage of the adult craft rate rose between 1965 and 1980 as follows:

Age	16	17	18	19	20
1965	33.3	50	62.5	75	87.5
1970	42.5	57.5	67.5	80	100
1980	45	60	75	90	100

Source: Department of Employment: Time rates and hours of work, various years.

² The 1964 Act was not entirely successful in raising quality, nor was the 1973 Employment and Training Act. In 1980, the Manpower Services Commission report on the working of the 1973 Act lamented the failure to replace time served in an apprenticeship by the achievement of recognised standards of job competence (MSC, 1980). However, by the 1980s, the importance of the time criterion for the unions which defended it was more connected with regulating the process of training, and, in particular, with ensuring that socialisation into the norms of the craft accompanied the technical training.

³ An alternative explanation of the decline of apprenticeship training in engineering has been advanced by Stevens (1994). Her argument stresses the importance of the recruitment costs for skilled workers as a reason why employers would be prepared to incur net costs of training for transferable skills. The degree of skill shortage is one critical factor affecting recruitment costs (understood to include not just hiring costs, but also the costs of any firm-specific training that would be necessary in addition). To these one might add costs incurred due to lost orders or reduced service. Thus, when shortages arise one would expect employers to increase training subject to the cost of the investment as indicated by the level of real interest rates. The collapse of apprentice training in engineering in the early 1980s was due then to the decline in skill shortages and the rise in real interest rates.

Although the model fits the data for new engineering apprentice intakes well for 1968–88, it leaves a number of questions unanswered. First, it is essentially a short-term, reversible model since inadequate training would imply increased shortages and hence an increased incentive to train, whereas the decline in apprenticeship, even as a percentage of the industrial workforce, has been long term. Second, the evidence on the net costs of apprenticeships suggests much higher costs than seem plausible for recruitment costs, especially for blue-collar workers with a widely recognised qualification. Third, measurement difficulties for the relative pay variable may explain why it proved not to be significant. Fourth, the study did not allow for the change in financial régime from 1973/4, when the 1973 Act scaled down the apprenticeship levy and the reimbursements it funded.

problems faced by industrial apprenticeship because the great majority of nurses are trained and employed by the National Health Service, and most teachers by the state educational sector.

5. Some statistical mysteries of the extent and nature of training

The breakdown of apprenticeship and the difficulties experienced by the industrial training boards which were meant to provide an overall framework for the system gave rise to an overall impression that employers in Britain were reluctant to invest in training. However, the large-scale representative survey of UK employers' training activities in 1986/87 challenged this overall impression (DE, 1989). The survey found that employers spent £809 per employee on off- and on-the-job training, equivalent to about 9% of average earnings, and 4.6% of GDP. About half of this was on on-the-job training, which had never been measured on such a wide scale before. The estimates of on-the-job training were probably overestimated, and the total of £20 billion was almost certainly an overestimate (Ryan, 1991). Nevertheless, allowing for the most severe corrections for the measurement errors, and excluding the costs of learning by doing, employers spent at least £10 billion, or about 3% of GDP.

Several other important points emerged from the study. First, the highest rates of training provision were to be found in some of the services sectors, notably health services, followed a long way behind by education, central government, retail, and financial services, none of which had ever been significant employers of apprentice-trained labour (Table 1). Second, among the occupations receiving training, the managerial and professional groups consistently came out on top in terms of days training per employee and per trainee, and in the proportion of employees receiving training (Tables 2 and 3). Third, about half the total number of days training reported took the form of on-the-job training, defined as periods during which employees received formal instruction on-the-job, and excluding learning by experience (Table 2).¹ Last, and important for the argument about industrial apprenticeships, manufacturing training expenditures as a percentage of manufacturing GDP were of a comparable order of magnitude to the national figure, although slightly lower.²

¹ According to Ryan (1991), this was the least sound part of the survey because of mistakes in the measurement of on-the-job training. To provide a measure of on-the-job training, employers had been asked to provide both the total number of days instruction, during which there was no trainee output, and the total length of the training period. The period of formal instruction was counted as on-the-job training. In contrast, the days of learning by experience were excluded from the calculation of on-the-job training volumes and costs on the ground that there was a productive contribution, and the wage differential often reflected its lower value as compared with that of experienced workers.

Two principal sources of error entered into the estimates. The cost of learning by experience is often not fully compensated in lower trainee pay rates, and so has a net cost to employers which should have been counted. This would increase estimates of costs. The other bias, in the opposite direction, arose from confusion among respondents, leading a number of them to report the instruction time as having lasted for the full training period. Ryan argued that the method used to correct for this seriously inflated the cost of on-the-job instruction.

² Rough estimates by the author, using the survey's published estimates of training expenditures per employee by industry, and data from other sources on employment and GDP by industry, give an estimate of between 3.7% and 4% of manufacturing GDP, as compared with the study's published estimate for the whole economy of 4.6%. Most branches had figures of between 3% and 6%, the one exception being education and health at over 10%.

Table 1. *Employer training by sector, 1986/87*

Sector	Density (days/employee)	Sector	Incidence (% employees receiving)
Health	17.6	Health	78
Education	9.6	Retail	68
Central government	8.5	Education	64
Retail	8.3	Extraction/Energy	64
Finance/Business services	8.0	Central government	59
Electrical engineering	7.3	Finance/ Business services	52
Extraction/Energy	7.0	Chemical/ Mineral manufacturing	48
Catering	6.3	Catering	45
Mechanical engineering	6.3	Local government	45
Metal goods	6.2	Electrical engineering	40
Construction	5.8	Transport & Communication	40
Chemical/Mineral manufacturing	5.1	Metal goods	39
Local government	4.9	Mechanical engineering	36
Wholesale	4.1	Other process manufacturing	34
Other process manufacturing	4.0	Wholesale	34
Transport & Communication	3.9	Textile/Clothing	26
Textile/Clothing	3.8	Construction	24

Source: DE, 1989, Employers' activities, table 4.3.

So employers are spending a great deal on training. How can one reconcile this with the decline of apprenticeships, and the presence of large numbers of unqualified workers, supply bottlenecks, skills shortages, and constraints on firms' product orientations?

6. Interpretation of the Training Agency survey

Three possible explanations of the paradox of high levels of expenditure on training and persistent skill shortages stand out. First, that informal OJT was used to substitute for formal apprenticeships; second, that there is a significant degree of under-utilisation; and third, that spending is concentrated on certain categories in order to remedy organisational problems. Finally, the section concludes with the implications for individual 'high skill' forms.

6.1. Substitution of OJT for apprenticeship training

Faced with problems of poaching employees with transferable skills, a natural response for employers who need skilled labour to realise their production plans is to develop their internal labour markets by fostering informal on-the-job training

Table 2. Total and on-the-job training received by occupation, 1986/87

Training by grade (On+Off JT)	Days/employee	Days/trainee	% employees receiving
Management/Professional	10.1	17.9	56
Other N-M	6.3	13.0	48
SK & SSK manual	6.3	15.7	40
Pers Serv., other manual	4.2	9.0	47
All employees	7.0	14.5	48

Training by grade (On JT)	Days/employee	Days/trainee	% employees receiving
Management/Professional	4.6	12.5	37
Other N-M	3.2	11.0	29
SK & SSK manual	2.6	9.2	28
Personal Serv., other manual	2.9	7.8	37
All employees	3.4	10.3	33

Total numbers trained (thousands): 8622, of which 6206 off-the-job, and 5872 on-the-job; 2416 (28%) by on-the-job training only.

'Training' was defined as 'the process of acquiring the knowledge and skills related to work requirements by formal, structured or guided means'. It excluded basic induction and learning by experience. 'On-the-job training' was defined as occurring where the trainee is 'receiving instruction at the normal place of work (during which little or no useful output is being produced) with the objective of learning or enhancing specific skills' (p.14).

Source: DE, 1989, Employers' activities, table 4.1 and figure 4.6.

Table 3. Cost elements of training for different grades, 1986/87

	Total cost per employee £	of which: % labour cost	No. days training	Total cost per day £
Management/Professional	1306	67.8	10.1	129
Other N-M	745	54.8	6.3	118
SK & SSK	741	50.7	6.3	118
Other manual & personal services	438	69.6	4.2	104
Apprentices/long-term trainees	3652	50.6	45.4	80
Other new recruits	1110	61.6	8.8	126
Established employees	714	67.9	5.4	132

Source: DE, 1989, Employers' activities, tables 5.12 and 5.13.

(Ryan, 1984). In this way they avoid the problems of transferability, although they also incur other costs to be discussed shortly. Thus, a first interpretation of the paradox is that firms have progressively met their skill needs by other means.

Unfortunately, the Training Agency survey was the first of its kind, so no comparisons with earlier data are possible. Although substitution appears highly

plausible, a number of factors limit the extent to which employers could adopt this strategy. One of the most important has been the pattern of job regulation whereby, in unionised workplaces, craft workers could insist that only those with the appropriate qualification could undertake their work. Although there was a wave of 'flexibility agreements' during the 1980s, and unilateral management action to reduce such job demarcations, their full extent has been modest compared with the decline of apprenticeship. Indeed, the commonest form of changes in job demarcations were between crafts rather than across the more jealously guarded frontier between craft and semi-skilled. On the latter boundary, employers have pressed for, and often achieved, acceptance for semi-skilled workers to undertake, for example, some elementary tasks of preventive maintenance, but little more (Atkinson and Meager, 1986; Marsden and Thompson, 1990). In pushing for further reallocation of work from skilled to semi-skilled workers, employers have also been limited by the low level of basic education of the semi-skilled and unskilled.

6.2. *Skill under-utilisation and uncertified OJT*

Under-utilisation could emerge from a number of sources: management may face restrictions on the deployment of skilled labour, such as those just discussed, and so be forced to hire beyond their immediate needs to be able to cope with fluctuations. Lack of certification of skills acquired on-the-job often means that past learning by experience will not be recognised by prospective employers, so that job changing effectively entails scrapping much previous work experience. Lack of skill transparency may also be an obstacle to effective use of skills within the workplace, causing employers to lack necessary information about the skills of their current workforces, making effective deployment difficult and limiting the possibilities of building on the foundations of previous in-service training. Finally, too great reliance on uncertified OJT is good at reproducing the skills needed for current patterns of work organisation and current technology but poor at preparing for rapidly evolving needs (Lam and Marsden, 1994).

Where OJT is conducted informally and without adequate quality control, the most likely result is that the skills developed will be specific to the firm in which they were learned. Indeed, they may even be specific to the particular office or workshop in which the person was engaged. As a result, when workers trained in this way change jobs, their skills are effectively scrapped. Recent work by Lynch (1992) on the US indicates that much uncertified OJT there is not transferable, as previous job experience with other firms is not usually rewarded (see also Büchtemann *et al.*, 1993).

Reliance on informal OJT may also provide a weak base on which to build additional skills by subsequent training by the employer. If the employee's starting point is that of tacit job knowledge, much of which may be impenetrable also to the employer, then it is hard to know at what level to start additional training. As a result, it is often safer to assume no previous knowledge either for the purposes of training courses or of transfers of employees to new work. Thus, the cumulative element of skill through OJT tends to be rather small, at least from the point of view of its value to the firm.

Because informal OJT involves skill acquisition as a by-product of work in one's current post, it is shaped both by current technology and existing work practices. This tendency is accentuated if jobs are of limited scope, and problem-solving activities, which might provide the basis for more analytical skills, are hived off to specialists. In some environments, job rotation and delegation of problem-solving and preventive maintenance tasks may enable workers to transcend narrow job-focused skills by an understanding of related tasks, and thus acquire some more general theoretical skills. This is an important ingredient of skill development in some German and Japanese firms where job rotation is used to enlarge and enrich skills. However, task segmentation appears to be greater in many British firms, and use of job rotation more limited. This is partly because the scope for upgrading workers is limited by the occupational organisation of the workforce, notably by the craft status of many skilled workers (Eyraud *et al.*, 1990), and partly because of adoption of segmented patterns of work organisation even among professionals such as engineers (Lam, 1994, 1996).

It might be objected that large Japanese firms manage very well with a heavy reliance upon internal training and internal labour markets (Sako, 1991). There are, however, a number of critical differences between Japanese and western firms. First, the high level of basic education in Japan provides employers with a stronger theoretical base on which to build enterprise skills. Second, job rotation and the use of diffuse job boundaries enables even semi-skilled regular employees to gain a much fuller understanding of their work tasks than in many western organisations. Third, supervisors play a central and very active role not just in organising work but also in training. Koike and Inoki (1990) argue that these factors permit Japanese firms to foster the intellectual and problem-solving skills of their workers, and to develop a very effective learning system.

6.3. *Training of management and professionals to compensate for weak skills base*

Consistent with the under-utilisation view is the relative concentration of employer-provided training on the management and professional élite (Tables 2 and 3), to compensate for weaknesses at the skilled manual level. One might contrast two alternative patterns of the division of labour: one in which skilled workers are highly trained and management can devolve a great deal of problem-solving activities to them; and one in which workforce skills are weak so that management retains a greater proportion of problem-solving activities within the management hierarchy. Such contrasting patterns of work organisation have been observed between Germany and France by Maurice *et al.* (1986), but also between Japanese and other east Asian plants by Koike and Inoki (1990). Sorge and Warner (1986), comparing British, French, and German manufacturing plants, placed their British plants between those of Germany and France: more delegation than in France, but less than in Germany. The adopting of more tayloristic patterns of work and production organisation noted in the British-German comparisons by Steedman and Wagner (1987, 1989) is again consistent with the concentration of the conceptual and problem-solving tasks on management. Thus, one can interpret the greater spending on training of managers and professionals as indicating a pattern of work organisation which concentrates

problem-solving activities in the white collar hierarchy and away from the shop floor.

6.4. Can individual firms break out of a 'low-skill equilibrium'?

Although a number of British firms are engaged in high-technology industries and have highly skilled workforces, so that not all conform to the 'low-skill equilibrium', the general state of the training system as a whole is likely to disadvantage them. First, when they are known to give high quality training, their workers immediately become attractive to other employers, so they must devote more resources to retaining them. Second, relying heavily on their own internal recruitment paths adds to the lead times needed to respond to changes in product demand. Third, with a fluid structure of firms owing to take-overs and mergers, a 'high-skill' firm taking over a 'low-skill' one has greater problems of integrating its workforces and personnel systems than if a common model were in place. Fourth, the deficiencies in the basic education system increase the amount of basic training such firms need to provide from their own resources before they can concentrate on more sophisticated skills. Fifth, despite recent attempts to adopt more flexible internal organisation structures, a great many firms in Britain, even in the high-technology sectors, have rather segmented patterns of organisational structure and division of labour which prevent them from taking full advantage of their internal labour markets for skill formation (Lam, 1994). Finally, such firms may succeed partly by creaming off the labour market which then further restricts the choice of the remaining firms. Thus, even though individual firms can and do 'buck the trend', the weaknesses of the training system make this more costly and more risky than it need otherwise be.

To conclude the argument so far, the decline of apprenticeship has deprived British employers of a system of transparent, and transferable, blue-collar skills, and forced greater reliance upon uncodified OJT. The weakness of basic educational qualifications of many British workers, however, greatly reduces employers' ability to substitute with internal labour market skills. Instead, reliance on such skills, it has been argued, leads to considerable under-utilisation, and thus, one may suppose that a considerable part of their expenditure on training is wasted. The scope for individual firms to break out of this pattern is present, but limited.

7. Recent innovations: towards a new regulatory framework?

The earlier discussion of under-utilisation placed a heavy stress upon the problems of lack of transparency in workforce skills, itself one of the products of the weak organisation of training and of the various conflicts of interest. The development of national training standards and a system for classifying training qualifications within the 'National Vocational Qualifications' (NVQs) offers, at first sight, a promising solution. However, increasing transparency will increase the ease with which non-training employers can poach those trained by others, undermining any incentive for employers to move towards greater transparency (Katz and Ziderman, 1990). A related development, promising to re-create the peer group regulation of the German chambers, is the Training and Enterprise Councils (TECs) in England

and Wales, and their sister organisations, the Local Enterprise Companies (LECs) in Scotland. The following sections explore the extent to which these institutions could resolve the market failures which have caused the demise of the old apprenticeship system.

7.1. NVQs and qualification-based labour markets

The development of NVQs represents a serious attempt to tackle training standards by increasing the transparency of job skills and by defining qualifications in terms of 'competencies', that is, what kinds of tasks people can do. The origins of the NVQ approach to training can be traced to the 1981 New Training Initiative white paper,¹ which stressed the concept of training to set standards, specifying performance levels to be achieved (Jessup, 1990). The key notion is that of 'competence in employment', with NVQs based on statements of competencies to be achieved in a particular activity and to a given level.

The NVQ system aims to classify all vocational qualifications according to the area of activity and level of competencies, starting from Level 1, which specifies competencies for activities of a routine or predictable nature,² to Level 5, for activities involving the application of a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts. Level 3 corresponds roughly to skilled blue-collar work.³ In addition to classifying, the NVQ system is being used to specify national training targets to be reached by certain years.

The NVQ approach has a number of features which recommend it. In particular, in view of the large percentage of workers with no vocational qualifications at all, it offers a stepping stone towards gaining recognised qualifications, and subsequently to self-improvement. By focusing on competencies, it also offers a means whereby skills learned by experience can be codified and made more transferable. Potentially, it even offers, through credit accumulation, a means by which workers may build on the less firm-specific parts of the experience they gain with different employers rather than scrapping them each time they change jobs. It also offers a means by which skills can be updated as new competencies are required by changing technology and work organisation.

More light can be shed on the potential strengths and limitations of the NVQ approach by exploring their relationship with occupational skills. The competency-based approach to skill formation involves defining skill status by the ability to carry out specified types of work rather than by the process through which skill is acquired and certified (Jessup, 1990). This involves practical know-how, but also some underpinning theoretical knowledge to enable it to be adapted to new and

¹ 'A New Training Initiative: a programme for action', Cmnd. 8455, December 1981. The white paper was preceded by the publication by the Manpower Services Commission's report 'Outlook for training: review of the employment and training act 1973', MSC, July 1980. The latter report concluded that current training arrangements had made little progress towards fundamental reforms, and that, in the traditional crafts, the passage of time rather than 'objectively assessed performance standards' decided whether a trainee is accepted as skilled (para 4.16).

² Level 1: 'competence in the performance of work activities which are in the main routine and predictable or provide a broad foundation, primarily as a basis for progression'.

³ Employment Gazette, July 1992, The national education and training targets: methods for monitoring the targets, pp. 339-346.

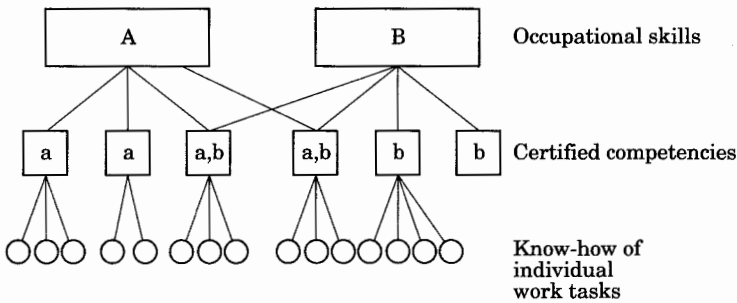


Fig 3. Link between occupational skills, competencies, and task knowledge.

unfamiliar circumstances. The relationship between such competencies, occupational skills, and the know-how exercised in individual jobs is illustrated in Fig. 3.

Occupational skills, such as those certified by apprenticeship qualifications, typically involve a broad range of theoretical and practical knowledge obtained by a mix of school-based and on-the-job training. They have had to be fairly broad so that the workers investing in them may be sure of an adequate supply of future work in a large number of firms, and so that a large enough number of employers will support them. However, their very breadth can make them less accessible to mature workers, and less easily adaptable to new demands.

In contrast, many internal labour market skills, especially those developed mostly by informal on-the-job learning, tend to contain just the practical know-how needed to carry out rather narrowly defined jobs. This is particularly true of blue-collar jobs organised on taylorist principles. The lack of theoretical input makes such knowledge difficult to adapt to a new environment, so that it usually has to be 'written off' when people change jobs.

Between these two poles lie competencies. They are of narrower scope than occupational skills, but they are more aggregated than know-how tied to individual jobs; most important, they are intended to be transferable by virtue of their standardisation and certification.

7.2. Competencies and the need for a stable framework of exchange

The intermediate position of competencies between occupational skills and narrow job-related skills means that some of the incentive problems associated with occupational skills should be less severe. The amount individual trainees and employers are called upon to invest in any one recognised competency is smaller, and building up the equivalent of an occupational skill can be spread over a longer period of time and perhaps done with several different employers.

Equally, if enterprise-specific job-related skills lose their attractiveness because employment in internal labour markets becomes less secure than in the past, then recognised competencies offer a suitable compromise. With a greater expenditure than for informal on-the-job training, employees can acquire a limited skill which is recognised by other employers.

However, a system based on recognised competencies is exposed to the incentive problems which confronted previous types of skill organisation. Just like

occupational skills, there is a problem of cost sharing, albeit potentially less serious than for apprenticeship. The simplest solution might be to use government funding to resolve such problems, but this is unsatisfactory for a number of reasons. First, it would make training decisions vulnerable to the pressures on public spending when they should be based on worker and employer expectations about future labour demand. Second, estimating the net cost of training (in order to calculate appropriate levels of subsidy) is notoriously difficult, and nothing more than a very rough compensation would be feasible. Third, the administrative burden would be heavy. Fourth, and most important, it would remove responsibility for training investment and for making the system work from those most directly concerned. So while public funding might help, it would not be a suitable source for the whole cost.

If we turn to investment by employers, competencies pose problems analogous to those of apprenticeship by virtue of their intended wide recognition and transferability.¹ The employer's investment depends upon workers' decisions to remain with the firm, and on other employers not poaching. Thus, some form of cost sharing between trainees and employers seems necessary. For this to be effective, already trained workers have to be convinced that the trainees are not simply providing cheap labour. Otherwise, it is unlikely that they would cooperate in passing on the practical skills to the trainees.

If these problems remain unresolved, employers are unlikely to invest, or they will do so only in ways that minimise transferability and are as close as possible to their immediate needs. Two recent examples illustrate the problem.

The gap between non-transferable job-related know-how and recognised competencies is illustrated by the difficulty experienced in defining competencies in the British construction industry (Greenacre, 1990).² Job-related know-how was found to be very dependent upon the context in which people worked: physical working conditions, size of construction site, size of firm, and technology used. With such variation, the know-how considered relevant by one employer was found to differ greatly from that considered relevant by another, even within fairly narrowly defined operations.

The second problem is that in transcending narrow job-related know-how which can often be obtained from 'working by Nelly' (informal instruction from an experienced worker), a certain amount of theoretical underpinning knowledge is needed. Without this it is hard to see how recognised competencies can be more than a set of memorised instructions for different operations. In their review of NVQs in the construction industry, Steedman and Hawkins (1994) found that many employers were unsympathetic to definitions of competencies which were broader than their principal needs; for example, many were reluctant to encourage acquisition of mathematical skills.

¹ Katz and Ziderman (1990) argue that employers would finance training for transferable skills if there is a sufficient information asymmetry such that other employers are less well informed about the general component of the training. Poaching would also be reduced because workers could not command such high wages from other firms. However, certification of general skills, and increasing their transparency, is likely to make employers less willing to incur the costs of training.

² An official of the Construction Industry Training Board.

Thus, for transferable skills, employers have little incentive to provide training beyond their immediate needs, and, in particular, have little incentive to provide any training that would make the employees' work experience with them transferable.

There is another reason for doubting the efficacy of a free market solution. Wolf (1994) argues that defining competencies nationally by documentary means is fruitless because of the inherent variability of the environments in which they are applied. Attempts to do so to date have led to calls for ever more precise definition of admissible adjustments to local conditions, and so to an ever increasing complexity of the standards. The problem is that while there is an atmosphere of suspicion about dilution of standards there is a need to ensure that standards are exhaustively defined so they can be effectively monitored. This was not the spirit of apprenticeship training in Britain, nor is it the spirit today in Germany.

The missing element is that of joint regulation by employers and employees. No rule book can provide an exhaustive definition of all the circumstances to be taken into account for full transparency. More effective is the sort of regular contact among those concerned which can generate a widely accepted understanding of what margins of variation are tolerable. To return to the German example, the chambers of industry and commerce create a culture within which employers understand each other regarding training needs and standards. The support of works councils and unions is also important, particularly for reassuring trainees that they are investing in skills that will continue to be valid for some time ahead, and for ensuring that a customary level of quality is adhered to.

The price mechanism can convey the incentives for the different parties, but it is less good at regulating the categories of exchange. The latter are critical to the effective functioning of a market for training. Thus, one way to achieve more robust application of standards may lie with encouraging stronger inter-employer organisation on training through the Training and Enterprise Councils.

7.3. Employer networks and training

It was argued earlier that cost and fear of poaching had dissolved the cement which held the traditional apprenticeship system together. If the labour market for a particular skill is well stocked, then the incentive to poach is weaker because even though one's own former trainees may leave, they can be easily replaced by experienced workers recruited directly from outside. However, should a shortage develop, then the incentive to cut one's own training increases because of the greater risk that one's trainees will leave. This will set in motion a vicious circle of cuts in training and increasingly severe shortages. It will also stimulate employers who do train to provide workers with incentives to stay, which usually includes policies to enhance internal labour markets at the expense of skill transferability.

Since we observe functioning occupational markets and some flourishing apprenticeship systems, it is natural to ask what factors hold such tendencies in check. German employers mostly incur high net costs of training for apprenticeship skills, and there is evidence of a good deal of inter-firm mobility among former apprentices, especially in their early years (Hofbauer and Nagel, 1987). Moreover, for most employers there is no levy and grant system, so apprentice training is undertaken at the expense of individual employers. Two factors appear to hold the

Table 4. Annual apprentice training costs in Germany, 1980

Occupation	Gross cost DM/year	Productive contribution as % of gross cost (survey est.)	Productive contribution + 40% as % of gross cost	Apprentice pay as % of gross cost
All occupations	17,043	40	55	35
Industry and Commerce	19,442	36	50	35
Handicraft	14,513	45	63	35
of which:				
Bakers	14,453	53	75	37
Buyer in food handicraft	13,693	58	81	37
Liberal professions	17,512	36	50	33
Public service	23,689	16	22	31
Agriculture	13,825	74	103	44

Note: A three year apprenticeship in Industry and Commerce would cost about DM58,000, whereas equivalent annual earnings of a male skilled worker in industry were about DM29,000.

Source: Noll *et al.*, 1983.

German system together. The first is that, among many small employers, apprentice training may be undertaken at a profit (Casey, 1986).¹ The second concerns peer-group pressures exercised through employer organisations.

The steady drift of former apprentices away from certain activities, notably among small firms in the handicraft sector, and the regular practice among such firms of training beyond their immediate needs suggests that something more than 'public spirit' is at work, especially as the former apprentices often move to other sectors, and so cease to be available to the firms that trained them. Thus, Casey's suggestion that apprentice training is profitable for many small firms. However, the importance of this practice is easily overstated, as estimates from the BIBB's study of German apprentice training costs shows (Table 4).

In all of the sectors covered, the apprentices' average productive contribution was below the gross cost of training, and even in agriculture, on average, employers incurred a positive net cost. In practice, there will be many firms incurring below average net costs, so there remains a possibility that in some branches employers do train at a profit, although if these estimates are accurate, the numbers will be relatively small in most branches.

The survey estimated trainee productive contributions in terms of the amount of skilled work they were able to undertake while receiving training (as did the Training in Britain survey discussed earlier). However, it is likely that trainees may also undertake some unskilled or semi-skilled tasks, particularly in occupations where apprenticeship is only loosely regulated, or the level of technical expertise required of skilled workers is not so high. Thus, Noll *et al.*'s estimates of net costs are almost certainly overestimates, but by how much? Jones (1986)

¹ Soskice (1993) argues that in some large firms, former apprentices are retained by the promise of future promotion to foreman and technician. Such possibilities do exist (see Drexel, 1993), but they are mostly available to a minority of apprentice-trained workers even in these firms.

calculated the likely over-estimation of net training costs for British apprentices to be between 12% and 40%. Since training is, arguably, less strictly monitored than in Germany, and so more likely to be used for unskilled tasks, one would expect the over-estimation to be smaller in Germany. Nevertheless, even if we apply Jones' upper limit of 40%, German firms on average still incurred significant net costs for training except in agriculture (Table 4). Since allocation to unskilled tasks is probably easier in some of the handicraft sectors and in agriculture, one may presume that there is a substantial minority of below-average-cost firms which train at a profit. However, unless the distribution is greatly skewed, such firms will be the minority, and confined to certain branches. Training levels are high, and, on average, employers incur considerable net training costs, so that opportunities for 'free-riding' are clearly present; hence, something is holding them in check.

Considerable support to apprenticeship training is provided by unions and works councils, the latter especially being able to monitor training efforts within the workplace, and by the local chambers of industry and commerce. Apart from informal peer-group pressures on non-training firms, the chambers publish the pass lists for the apprentice exams. Thus, other local employers can see not only how many apprentices are being trained by their local competitors, but also whether the quality of training is high enough to produce a good pass rate. An additional motive to maintain training levels is that cutting training might be seen as a sign of impending financial difficulties.¹ All this helps to explain how chambers can police training levels on behalf of their members, but it does not explain why local employers should accept them in the first place.

A revealing episode in the recent history of training has been the pressure on the construction industry to reform its apprenticeship system, and to increase its output. Streeck (1985) shows how the various employer organisations not only sought reform, but how they also sought to maintain the principle of private regulation, keeping the state out, and thereby avoiding such measures as compulsory training levies. Since the employers were seeking to increase apprentice output, and considering raising apprentice allowances, it is clear that their motive in keeping the state out was not to reduce costs. Indeed, the levy they set in their 1976 collective agreement was six times higher than the proposed statutory one (Streeck, 1985).

There are several reasons why self-regulation should be more effective for those concerned than regulation by the state. First, the state may have other motives which could subsequently conflict with those of the employers. It might wish to set too high targets with the aim of using apprenticeship to reduce youth unemployment. State finance would also be subject to public spending decisions which may conflict with firms' training investment plans.² Second, and more important, state involvement could dilute the employers' responsibility for making the system work,

¹ I am indebted to Ingrid Drexel for this information.

² Streeck (1985, pp. 52-53) quotes the construction industry employers as wishing to continue to resolve the problems of their industry assuming 'common responsibility to solve problems through collective agreements' and so 'by means of their own financial rules develop their long-standing social policy' (*Bauindustriebrief*, 12/1975, p. 12).

and so dilute the effectiveness of peer-group pressures. This works in two ways. First, in monitoring other firms' training levels, firms are not enforcing an abstract idea of the public good, nor are they spying on behalf of the state. They are keeping an eye out for 'free-riders' who might be seeking to profit at the expense of all employers in the industry.¹ Second, there is a positive motivation for employers to ensure their own system provides the necessary quantities of skilled labour, hence the importance of the frequency with which firms replied to the Edding Commission survey that they saw training as contributing to the good of their industry.

Given the importance of such mechanisms of self-regulation for investment in transferable skills among German employers, an obvious question is whether similar mechanisms can be developed in other countries where the institutional networks among employers are less developed. There are a number of 'first mover' disadvantages in setting up systems of transferable skills (discussed in detail in Marsden, 1986, ch. 8). Notable among these are the problem that non-training employers will take advantage of the transparency of the skills provided by a pioneer group of firms setting up a self-regulatory system. As a result, those that start up a system of training for transferable skills face a severe cost disadvantage relative to their competitors. Thus there is a role for the state as initiator of reform and in providing some protection to those employers making the first moves. The question then is whether the British TECs and LECs can come to fulfil the same inter-employer regulatory functions as the German chambers.

7.4. Employer networks and the Training and Enterprise Councils

The creation in 1989 of employer-led Training and Enterprise Councils (TECs) in England and Wales, and Local Enterprise Companies (LECs) in Scotland, has been the major new initiative in organising employer-based training in the UK. The TECs and LECs have been created to fill the void left by the progressive abolition of the former tripartite statutory Industrial Training Boards during the 1980s. Their main function has been to take over running of the employer-based training programmes, notably Youth Training and Employment Training, from the Training Agency. The case for giving local employers the lead was that they were best placed to know what would be the training requirements of their own business plans, and that they would know best the needs of other local employers. The 88 TECs in England and Wales now have average budgets of about £27 million each, about 70% of which is tied to the Youth Training (YT) and Employment Training (ET) programmes (Bennett, 1994). They have assumed a number of the functions of the German chambers of industry and commerce. Apart from running government programmes, which the German Chambers do not do, they have acquired an important role in monitoring the quality of training under the schemes. They do this partly by awarding training contracts preferentially to firms awarded the government's 'Investors in People' badge for good-quality training, and partly by insisting that training under YT lead to recognised National Vocational Qualifications (NVQs). Given the leading role of employers, one can ask whether, if the government were to realise its professed aim of passing management from the public

¹ In this respect, it was significant that so many respondents to the Edding Commission had replied that they trained because it was good for their industry (Edding, 1974).

to the private sectors, the TECs could achieve the same kind of influence on local employers as the German chambers.

The results from surveys of early progress reported by Bennett (1994) suggests that the goals of the TECs have been undermined by a number of factors. First, the majority of their activities are focused on the government YT and ET programmes for youth and the long-term unemployed, both of which have a generally low reputation among employers. One survey of small firms reported that only 13% had found their local TECs useful in identifying and meeting skill shortages.¹ Second, there remain doubts as to long-term commitment by government to these programmes, as policy changes have been frequent. Moreover, their finances remain heavily dependent upon government, and are vulnerable to public spending cuts. Third, the TECs have yet to build the organisational links with other local employer bodies and individuals, and do not have a clear, and independent, representative structure which could enhance their standing. Fourth, the TECs lack influence over many of the key incentives such as wage differentials, so that the financial return for individual workers to invest in the lower levels of training is extremely low. Finally, although the employers have been keen to maintain a strong focus on building up a reputation for training, the government has wanted to maintain the dual purpose of its YT and ET programmes: to build a strong skills base and to combat unemployment. As yet, employee representatives have only a very limited role in the TECs, and with a similarly weak role in the workplace, the other regulatory pillar of the German system is lacking.

Thus, with firm government control over the main components of TEC budgets, and over whether the emphasis should be upon training for skills or training to ease unemployment, the TECs appear to fall a long way short of the independence of the German chambers. Nevertheless, many TECs have sought to build links with other local employer organisations, notably the Chambers of Commerce, with about two-thirds of TECs, and a quarter of LECs, having established links by 1992. The strength of chambers is generally less in the UK than in Germany, as about 20% of TECs and 45% of LECs reported that there was no effective chamber in their areas (Bennett *et al.*, 1992). However, this may now be changing: in 1994, the government proposed to link the TECs with the chambers, which would potentially provide a considerable boost to both organisations, and in April 1995, the first such merger was given the blessing of the Secretary of State for Employment.²

8. Problems for a new regulatory framework?

Vocational training systems rest on a delicate balance of incentives for the different parties involved. The scale of investment involved, and the need to ensure workers

¹ Financial Times, 26.9.94, Skilled labour shortage 'hampers recruitment'. A survey by the British Chambers of Commerce and Alex Lawrie of 487 small firms (<50) found that only 13% found local TECs useful in identifying and meeting skill needs. These findings were echoed in an Employment Department survey of skill needs in Britain. In 1992, just over 20% of organisations with 25 or more employees had links with TECs or LECs, as did under 10% of those with less than 25 employees (Selden, 1993).

² Financial Times, 3.5.95, Red tape tangle for Teccs.

acquire skills from which they can earn a livelihood, mean that central coordination by the state is impractical. However, reliance upon the free market is likely to lead to under-investment in general or transferable skills, and a concentration on skills that are non-transferable either by design or because of lack of transparency. It has been argued in this paper that such lack of transparency contributes to skill under-utilisation. Thus, the state has a role, not as central provider, but in ensuring the existence of an adequate regulatory framework.

The traditional British apprenticeship long offered a self-sustaining regulatory framework, but it had a number of serious shortcomings which eventually brought about its collapse. Weaknesses in the regulatory framework were a part of the story, but equally important was the failure to develop into new areas, such as white collar work, and a variety of new economic activities. Unlike the German apprenticeship system, the British one remained confined largely to male manual skills for industry and construction, leaving workers in other occupations poorly provided for.

The recent reforms in the UK, combining an attempt to make workplace skills more transparent and to foster the development of employer-led bodies supervising enterprise-based training, raise a number of questions which are relevant for policy in other countries. The NVQ initiative is not confined to the UK, being part of a wider European Union move, but its originality in the UK lies in the emphasis upon job-related competencies. These have a number of drawbacks; notably, they may reflect current patterns of technology and work organisation, and embody current skill levels. However, they have also a number of potential advantages. Starting at a lower level than most vocational qualifications, the NVQ system offers a special step for the one-quarter of workers who have no vocational qualifications¹ and who have therefore depended entirely upon learning by experience. More generally, it offers a way of incorporating on-the-job learning more systematically into recognised qualifications, and so is potentially more adaptable than most forms of formal qualifications. In particular, it offers a way of linking the currently specific and non-transferable internal labour market skills into a national system, thereby increasing transparency and facilitating higher levels of skill utilisation.

However, enhanced transparency also increases the opportunity for mobility, and thereby increases the risk that those trained at the employer's expense will change firms, and increase the scope for poaching. It can therefore be anticipated that in the absence of some kind of strong institutional framework, employers will either balk at the cost of training for skills which have become more transferable, or they will seek to undermine transparency, and to confine training to the minimum currently required by the job. Recent research on NVQs illustrates just these tendencies.

The big question then is whether the TECs and LECs can begin to assume the role played by the German chambers, and whether workplace representatives can gain sufficient influence to monitor training efforts effectively. It was argued above

¹ DE, 1994, Table G 6, based on the Labour Force Survey. The figure for those with no qualifications had fallen from about 40% in 1984. A part of the improvement may have been made up of YT qualifications which many believe are of limited value, but these would account for at most one-third of the improvement if one assumes that all of the growth in the share of 'other qualifications' is of this nature.

that peer-group pressures among employers were more likely to be successful than state supervision, and the big theoretical question is whether the state can nevertheless play a role in setting up such corporatist arrangements. There are two serious difficulties: will the employers come to 'own' the system as it grows stronger? And can the state afford to sacrifice its other objectives for long enough in order to get the system going? Owning the system may come about if employers gradually build up the expectation that the system's success depends primarily upon their efforts. Building up such expectations takes time, and requires consistent policies by the state. The problem for the state is illustrated by the tendency to combine action on both training and unemployment in the TECs/LECs. Resources are scarce, and it is inevitably tempting for politicians to try to get the same institution to serve two goals. However, in the case of training, these goals may be largely incompatible since building up the system's reputation for providing good quality training can be damaged by the 'stigma' effects associated with training as a remedy for unemployment. These difficulties are also present in many other countries, so if the state succeeds in establishing a stable employer-based system in Britain, then the experience would surely prove valuable to other countries where regulatory frameworks for multi-employer training systems have decayed or never existed.

Postscript

In November 1993, the government announced the launch of the Modern Apprenticeship initiative. It provides a new start for apprenticeship, covering a wider range of sectors than its predecessor, tying qualification systematically to recognised standards of attainment of NVQ level three or above rather than time-serving, and providing employee status to trainees. Control of the scheme lies with the employer-dominated sectoral Industry Training Organisations and the TECs. Survey results of its first year of operation suggest the initiative's attractiveness to trainees (*Employment Gazette*, June 1995, pp. 263–267). Currently, average weekly pay is about 30% of average male manual earnings and training levels are considerably above those of Youth Training and of many of the old-style apprenticeships. However, a question mark hangs over its future success owing to the cost to employers, the enhanced transferability of skills, and the weakness of inter-employer training networks.

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