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2 The British System of Youth Training: A Comparison with Germany

Nicholas Oulton and Hilary Steedman

2.1 Introduction

There is a widespread perception that American international competitiveness is declining and that American economic leadership is under threat. Increased attention is being directed toward the contribution that vocational education and training might be able to make to a solution of these problems. In this context, the British system of youth training, which has undergone considerable changes in recent years, may offer some object lessons. It is now generally accepted that Britain lags behind its European partners in the provision of training to young people who are unable or unwilling to continue in full-time academic education after they have reached the minimum legal age for leaving school. In comparisons of high-level manpower (first-degree level or above), Britain compares favorably. But the proportion of the labor force who have attained lower- or intermediate-level vocational qualifications is far lower in Britain than in France and lower still than in Germany (Prais 1981; Steedman 1990; Steedman, Mason, and Wagner 1991). Moreover, case studies of a number of industries in manufacturing and elsewhere, using matched samples of plants, have shown that low skill levels in the United Kingdom are a significant cause of lower labor productivity (Daly, Hitchens, and Wagner 1985; Prais, Jarvis, and Wagner 1989; Steedman and Wagner 1987, 1989).

Any system of youth vocational training must confront and solve three problems: First, who is to pay for training? Second, how is the content of training

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to be determined? And third, how is the skill level of a trained individual to be appraised and certificated? The solution to the financing problem is in principle straightforward. Since (in the absence of externalities) it is the trainee who by and large benefits, in the shape of higher wages, the trainee should pay for the cost of his own training (Becker 1964, chap. 2). But in practice there are difficulties since trainees are young (not legally adults) and may well not be creditworthy. In the first instance, therefore, firms may have to bear the burden, hoping to recoup the costs later. But this gives rise to obvious problems. If trainees wages are too high, firms will lack incentive to offer training. If wages are kept low throughout the training period, the “poaching” problem arises, whereby a firm which offers training does not get to reap the reward of its investment when a nontraining firm lures away its trainees; the incentive for firms to train is again reduced.

With the content of training, there are two issues. The training offered should obviously be up-to-date and relevant to the industry in which the trainee is working. Experience shows that this is usually best achieved by workplace-based training. But since 16-year-olds (16 being the school-leaving age in Britain) cannot possibly know for sure what their aptitudes, abilities, and opportunities are, the training offered should be also designed to encourage flexibility and lay a sound foundation enabling trainees to deal with possible future changes in their occupations and indeed future changes in technology in their current career choice. In other words, vocational training should include an element of general education (primarily, literacy and numeracy). Firms are obviously in the best position to say what is relevant training given the current technology of their industry. But if firms determine training content, they have little incentive to offer training designed to advance the trainee’s ability to move into a different industry or a different occupation. If on the other hand the government determines the content of the training curriculum, it may be able to ensure that general education is not neglected, but it may find it difficult to ensure that the more narrowly vocational element is truly relevant to industry’s current needs, let alone its future ones.

As regards assessment and certification, it is obviously in the interests of trainees that at the end of their training period they should be able to gain a certificate which is widely recognized—which is regarded as a reliable indicator of the skill level to which it attests—and that the attested skill should be economically relevant. It is clearly in society’s interest as well. An atomistic system in which each firm offers training and bestows its own certificates would obviously not meet the above requirements: some external body (though not necessarily a governmental one) is required to lay down and monitor standards.

The three problems are interdependent, so that failure to solve one exacerbates the difficulties caused by the other two. For example, if trainee wages are set too high, firms will find ways to skimp on training, so that the value of a training certificate will be reduced. If the system of certification is unsatisfac-

tory, trainees will be reluctant to come forward, except for wages which firms find excessive, thus worsening the financing problem. If the content of training courses is not relevant to the skills required by the market, then the value of the certificate will be reduced and trainees will again be discouraged.

The British system of youth training has seen great changes in the last decade, as we describe below. Nevertheless, it is our claim that the current system is still far from achieving a satisfactory solution to the threefold problem of finance, content, and certification. Britain still has much to learn from the French system, and still more from the German one, which (we shall argue) comes the closest of the three to a socially optimal solution.

Our argument is laid out as follows. First, we describe the main features of the training systems of Britain and Germany, making in passing some remarks on the rather different French system. Next we set out a simple model of youth training, designed to illuminate the relationship between trainee and adult wage rates implicit in an economically viable system. Armed with these insights, we then try to evaluate the outcomes in Britain and Germany.¹

2.2 Britain and Germany Compared

2.2.1 The British System

Youth training in the United Kingdom has traditionally been provided by the apprenticeship system. Even in its heyday, only a minority of young people (from among those not in full-time education) served apprenticeships. Apprenticeships bestowed a narrow craft type of qualification, though a well-accepted one. In many industries moreover the apprenticeship system consisted of mere timeserving, with no testing of competence required for successful completion. The 1980s proved a watershed. Under the impact of the 1980–81 recession, the intake into apprenticeship declined dramatically: the number serving apprenticeships in manufacturing halved between 1979 and 1984 and fell by a further third between 1984 and 1989 (U.K. Department of Employment 1990, table A1.10). Faced with rapidly rising unemployment, which (by the OECD definition) was to reach 12.4 percent by 1983, and at a time when the number of 16–17-year-olds was increasing sharply, so that mass youth unemployment

1. Many of the issues of policy addressed in this article have also been discussed by Marsden and Ryan (1991) and by Finegold (1991). Marsden and Ryan acknowledge the importance of achieving a trainee wage level which will encourage employers to train while emphasizing the need for trade unions to be accorded a role in the regulation of training quality in Britain as is the case in Germany. Finegold also emphasizes the importance of institutions in promoting a high-volume, high-quality training equilibrium, in particular the role of the German chambers of commerce in providing the cooperative forum where training places can be brokered and “poaching” problems confronted. In this article we adopt a different approach to the same issues. Starting from the premise that institutions are notoriously difficult to “grow” on foreign soil, we concentrate primarily on ways of establishing strong incentives for employers to train and for individuals to enroll and to persist in training programs.

was in prospect, the government introduced the Youth Training Scheme (YTS). A placement with a firm under YTS was initially for one year. Now renamed simply Youth Training (YT), placements are (since 1986) for two years, though there is no penalty for the trainee who leaves early. Under the YT program, the government covers the cost of college fees and pays firms a modest subsidy.² Firms are in turn required to provide work experience and to ensure that trainees “work toward” vocational qualifications. Firms must also pay trainees the “trainee allowance” laid down by the government, though they are not prevented from paying more, and in practice many do. The trainee allowance is about the same amount as a single adult could claim on social security. The government has pledged to provide trainee places under YT for all 16–18-year-olds who want them—this is the carrot. The stick is that the government has now abolished the entitlement of young people to social security benefits, so that YT is also a large-scale experiment in “workfare.”

The assessment and certification of vocational qualifications is regulated by the National Council for Vocational Qualifications (NCVQ), set up in 1986. This body has classified qualifications into four National Vocational Qualification (NVQ) Levels. Payment of the trainee allowance to firms is conditional on the trainee being deemed to be “working towards” a qualification classed as NVQ Level 2. The term “working towards” has not as yet received a precise official definition—it does not require for example that the trainee attend college part-time (though that would be usual). Moreover, determining whether a trainee has achieved NVQ Level 2 does not require an externally set and graded exam, but merely an assessment in the college or workplace by the trainee’s own college lecturer or supervisor without necessarily any written test. The lack of external assessment and the failure to require the passing of a written test are strongly at variance with practice elsewhere in Europe (Prais 1989, 1991). It appears too that NCVQ is squeezing out the general educational element from the vocational syllabus, in favor of a collection of narrowly defined “skills,” such as the ability to answer the telephone.³

By 1990, 23 percent of 16-year-olds in Great Britain were on YT, and 21 percent of 17-year-olds. However, only 2 percent of 18-year-olds were on YT. Overall, 15 percent of young people in the 16–18 age group were on YT; this compares with 36 percent of the age group who were still in full-time education, the remaining 49 percent being employed, unemployed, or inactive (U.K. Department of Employment 1992). Since YT placements are now for two

2. The administration of YT has been devolved by the Employment Department onto the newly created Training and Education Councils (TECs). These in turn pay the money in the first instance to “managing agents” whose role is to recruit trainees and place them with firms, while also arranging suitable college-based training on a part-time (day-release) basis. Levels of payment to firms taking trainees vary both within and between TECs. In one area, the subsidy paid to firms, we were informed, was £8 per trainee per week in 1991.

3. Steedman (1992) found that the NCVQ-approved syllabus for trainees in the construction industry required no mathematics, unlike the corresponding syllabuses in France and Germany.

years, these figures suggest that a large proportion of trainees do not complete the course. In fact, data from the Youth Cohort Study (reported in U.K. Department of Employment 1992) indicates that of those 19-year-olds in employment in 1989 who had previously done YT, only 40 percent had done the full two years.⁴

2.2.2 The French and German Systems

In the process of achieving a considerably higher supply of training places, France and Germany have adopted different strategies which arise from very different labor market institutions and from differing arrangements for the control of education. In France, the supply of training places for 16–19-year-olds is regulated by funds made available by the government to full-time further education colleges and by Ministry of Education determination of the occupational spread and level of courses available. The disadvantages of securing supply in this way are well documented (Jarvis and Prais 1989). Provision responds to labor market requirements sluggishly and with considerable time lags, and course content is divorced from current labor market needs. The benefits to employers are largely in the form of young employees with good technical and vocational grounding in a specific occupational area and with a sound foundation of basic education. French training provision is characterized by a high level of supply and uneven quality (poorly adapted to immediate labor market requirements but with consistently satisfactory levels of general vocational education).

Germany relies on employers voluntarily coming forward to provide training places.⁵ This source of supply has important advantages not easily attainable when places are state-funded in full-time colleges as in France. Employers offering training places do so according to their own projections of manpower requirements with the result that the occupational areas in which training is provided more closely match labor market opportunities. The provision of training in the workplace ensures that specific training in vocational skills corresponds to current workplace standards. It might be expected that, in such an arrangement, *general* vocational education would be marginalized. This is not the case, however, since it is an obligatory part (for both employers and trainees) of any apprenticeship contract that an element of general vocational education be provided to a syllabus drawn up by regional education authorities and be financed by those authorities. The result is a high-quality, high-supply equilibrium in both vocational training and vocational education areas.

Under a typical German apprenticeship, one day a week will be devoted to full-time study at a vocational college in each year of the three-year training period. Some apprenticeships require the whole of the first year to be spent in

4. Of those 19-year-olds in employment in 1989, 30 percent had gone straight from school into a job, and 28 percent had entered after full-time higher (post-16) education.

5. See Soskice (chap. 1 in this volume) for a detailed discussion of the German system.

full-time study. During the remainder of the time, the trainee will be working for the firm but very often in a special training workshop on the firm's premises. It is important to realize that successful completion of an apprenticeship, which is widely seen by young people as the essential route to a decent job, requires the passing of externally set and assessed exams. But the exam syllabus is based not only on what has been learned at college but also on what has been learned in the firm.

The syllabus for vocational training is the result of a detailed consultative process involving business, unions, and the state governments (*Lander*). Because of this, the important distinction in the German system is not between Becker's general and specific training, but between general education with a vocational orientation and the acquisition of workplace skills. Given the age of the trainees, the small size of many of the firms involved, and the training syllabus, it is simply not realistic to regard any significant part of training as firm specific for most trainees, though an important part of it is industry specific.⁶ The interesting question is, How narrowly vocational is the supposedly general educational part of the apprenticeship? The view of teachers in the German vocational colleges (*Berufsschule*), all with previous occupational and/or professional experience, was that, of the mathematical knowledge acquired in college courses, the apprentices would need to use only a small part directly in the workplace while employed as craftsmen. They would, however, need the whole range of mathematical skills if at a later stage they proceeded, as some were expected to do, to take courses and examinations leading to positions as supervisors (*Meisters*) or technicians (*Technikers*).⁷ In other words, these skills are more likely to be of use to the trainee as a means of pursuing career goals than directly in current employment.

In general, the training program which German employers agree to put trainees through, if they take them on as apprentices, not only includes off-the-job education and training but goes far beyond the training directly required for the job in hand. We can, for example, contrast the six-week training commonly given to sewing machinists in Britain, which is considered sufficient to teach them the basic operations required, with the two-year training given to machinists in Germany (Steedman and Wagner 1989).

At first glance, the German apprenticeship scheme, with its requirement that the employer send the trainee to college for at least one day a week or the equivalent, while paying a trainee wage, would appear to involve subsidization by the employer of general training. How can we explain the willingness of

6. A small number of "elite" apprenticeships in high-skill occupations offered by some large firms, e.g., engineering apprenticeships with Siemens, may give an implicit promise of long-term employment and may consequently contain an important element of firm-specific training. But it should be remembered that about a third of all apprenticeships are in the *handwerk* sector (e.g., as hairdressers and motor vehicle mechanics) and that, even of those in *Industrie und Handel*, many are with small and medium-sized companies (e.g., as retail salespersons).

7. This view emerged in recent discussions held with a number of teachers working in *Berufsschule*.

German employers to enter into a training agreement where the on-the-job training they must supply (in accordance with federally agreed training programs) goes far beyond the specific skills required for the job at hand? To start with, we can note that the German state government (*Land*), not the employer, bears all the costs of off-the-job tuition in the vocational college. Second, the trainee wage is substantially below the corresponding adult rate: typically, trainees earn only about a third of the basic pay of the corresponding adult worker (Jones 1985; his data refer to 1979, but there has been little change since then). Third, the trainee makes a productive contribution in the latter stages of the training contract, and the employer can be reasonably certain (because of the importance trainees attach to possession of the craft certificate, *Berufsabschluss*) that the trainee will in fact remain with the firm for the full training period. A fourth factor helping to explain trainees' acceptance of a low trainee wage is that the training period varies with the nature of the job. Clearly, the length of time needed to acquire a minimum level of job-specific skills will vary from occupation to occupation. As a general rule in Germany, the shorter the time required to acquire the particular job-specific skills, the shorter the total training period—for example, an office assistant (*Burogehilfin*) has a two-year training period, whereas an office clerk (*Burokauffrau*) has a three-year training period. This variation in the length of the training period as a function of the required degree of skill helps to keep the trainee dropout rate relatively low.⁸

In summary, the fact that the German system has survived the economic strains of recent years, that it continues to meet with a high level of acceptance from German firms, small and medium-sized, as well as large, and that it succeeds in providing apprenticeships for the vast majority of the target population (less than 5 percent of German young people age 15–18 are in neither training nor full-time education; Bundesminister für Bildung und Wissenschaft 1990b, 24–25) strongly suggests that it is privately profitable. In the next section, we draw out the implications of what we take to be this fact.

2.3 The Economics of Youth Training

2.3.1 A Simple Model

In this section we develop a simple model of youth training, designed to illustrate the problems with which all real-world training systems which rely on the private sector, as does Germany's, have to contend. For the reasons given earlier, we assume that all training is general.

8. In 1988, the proportion of apprenticeships which were not completed was 20.5 percent, up from 13.7 percent in 1983. Most of these "dropouts" are in fact switching from one apprenticeship to another. The rise in the noncompletion rate has been attributed to the tighter labor market for young people in these years, which has enabled them to be choosier (Bundesminister für Bildung und Wissenschaft 1990a, 43).

It is assumed that the firm is required to sign a binding contract with its trainees for a period of n months, where for example, $n = 36$ in the typical German case. During month t trainees would have a marginal product y_t if they devoted all of their working time to production. However, they devote a proportion h_t of working time to off-the-job training, so their actual marginal product is $(1 - h_t)y_t$. In the earlier part of the training period, this marginal product will normally be less than the wage cost to the firm w_t . Obviously, therefore, firms will never offer training unless they expect that at some point the marginal product will exceed the wage cost.

Since the contract is binding for n periods, employers must look at the profitability of the contract as a whole, not month by month. But they need not look beyond the end of the contract, since at the end of the contract employees are free to leave and employers are also free to let the former trainees go and to hire someone else. Roughly speaking, the firm must ask, Does the present value of the benefits over the life of the contract exceed the present value of the costs?

Although the contract is binding, it is nevertheless possible that its terms are not fulfilled. For example, if we continue to look at it from the firm's point of view, the worker may quit or do something which necessitates dismissal (e.g., assault a manager). Hence the firm must allow for the possibility that it will incur expenditure on labor costs in the earlier months, the worker will then leave, and the firm will never get the benefit of higher output.

Let p_t be the probability, as of the beginning of the contract, that the worker is still with the firm in period t . Then the training contract is profitable for the firm (assuming risk neutrality) if

$$(1) \quad \sum_{t=1}^n p_t [(1 - h_t)y_t - w_t] \geq 0,$$

where r is the firm's required rate of return on capital.

Several conclusions arise from considering this formula. Note first that the contract would always be profitable to the firm if the wage were equal to the marginal product in every period, i.e., if $(1 - h_t)y_t = w_t$, for all t . This is of course the point made by Becker (1964, chap. 2). It is easy to see however that this is not the practice followed in the real world: on the last day of apprenticeship, workers are presumably almost as productive as on the following day, but they are paid substantially less than adult workers. The most plausible explanation for this is that if wages were strictly in accordance with marginal productivity, they might be unacceptably low during the earlier stages of the apprenticeship. To keep from starving, workers would have to rely on borrowing or family support which might not be forthcoming. For example, banks in the United Kingdom are at the time of writing (March 1992) charging a real rate of interest of about 25 percent for small, unsecured loans (a few hundred pounds), and this when most of their customers have assets which could be distrained on in case of default. Trainees are not legally adults and usually have no assets except their earning power. The families from which trainees come

may be little better placed to acquire outside finance. In addition, if commercial loans existed there would be a moral hazard problem: firms would have no incentive to screen out unsuitable applicants for training. It is not therefore hard to see why special arrangements for financing the training of young people are necessary. In the absence of commercial loans, firms in effect lend trainees money by paying them more than their marginal product at the start of the contract, a debt which trainees “repay” by accepting a wage lower than their marginal product as their skill level rises.

A second point to note is that the higher the probability of the employee dropping out (the lower p_t), the lower trainee wages must be (in relation to productivity) in order to make the contract profitable for the employer. In earlier times, the problem of default on the part of the trainee was taken so seriously that runaway apprentices were treated as criminals. In modern Germany, the contract is somewhat one-sided in that it is binding on the employer but there are no significant legal consequences for the trainee if he or she quits prematurely (though there may be serious consequences for the trainee’s future job prospects).

One should also note that the fact that these are not lifetime contracts makes a great deal of difference to trainee wages. If lifetime contracts existed, we should see a much smaller gap between the wages of trainees and those of fully trained workers, since the cost of training, which is borne ultimately by workers, could then be spread over a whole working life instead of being incurred entirely in the relatively short training period. With lifetime contracts, the same formula applies but with n interpreted as the length of working life, not of the training period. Certain “elite” apprenticeships may give entry to an internal labor market and may therefore be analyzable as an implicit lifetime contract, but such apprenticeships are a minority, even among those offered by large firms.

2.3.2 Implications for the Trainee-Adult Wage Differential

The profitability condition (1) can be used to generate some implications for the differential between trainee and adult wages. Alternatively, given the differential, we can deduce implications for the sustainable level of human investment. This condition was derived for an individual firm, but competition will ensure that in the long run it holds for all firms in an industry as an equality:

$$(2) \quad \sum_{t=1}^n p_t [(1 - h_t)y_t - w] = 0.$$

To obtain numerical results, it is necessary to impose some structure on equation (2). Specifically, we assume that the trainee wage and the proportion of time devoted to training stay constant throughout the training period ($w_t = w$ and $h_t = h$, for all t), and that the probability of a trainee dropping out is constant and equal to $1 - p$, so that $p_t = p^t$. We also need to say how the

trainee's marginal product grows over time. We assume that this depends on two factors: off-the-job training and on-the-job training. The rate at which productivity rises is assumed to depend in a linear fashion on the proportion of the trainee's time devoted to these two activities:⁹

$$(3) \quad (y_t - y_{t-1})/y_{t-1} = \rho h + \sigma(1 - h), \quad 0 \leq h \leq 1; \rho, \sigma > 0.$$

Note that this formulation (which as far as off-the-job training is concerned is the same as that of Lucas 1988) has the strong implication that the growth rate of marginal productivity is independent of its initial level. However, Rosen (1976) has shown that the optimal h depends on an "ease of learning" parameter, which in turn could be made to depend on the initial educational level of trainees. He has also shown that in the early period of working life the optimal growth rate of human capital is approximately constant. So equation (3) may be quite reasonable as a model of human capital investment for youth trainees.

The parameter ρ can be interpreted as the gross rate of return to investment in off-the-job training. To see this, note that investment in human capital in month $t - 1$ is hy_{t-1} , which yields a return of $(y_t - y_{t-1})$ thereafter. The rate of return, measured on a monthly basis (ignoring the distant possibilities of death or retirement) and gross of depreciation on human capital, is $\Delta y_t/hy_{t-1}$, which by equation (3) equals ρ . The parameter σ can be interpreted as the gross rate of return to on-the-job training.

Now assume that adult workers are paid their marginal product y_n , which by equation (3) equals $y_0[1 + \rho h + \sigma(1 - h)]^n$. Under these assumptions we can substitute from equation (3) into equation (2) and solve for the ratio of trainee to adult wages, w/y_n :

$$(4) \quad w/y_n = \frac{(1 - h) \sum_{t=1}^n p^t (1 + \rho h + \sigma(1 - h))^{t-n} / (1 + r)^t}{\sum_{t=1}^n p^t / (1 + r)^t}.$$

Table 2.1 shows some sample results of calculating the trainee/adult wage ratio for a range of values of the rate of return (ρ) and the proportion of time devoted to training (h). In these calculations, the training period is assumed to be 36 months ($n = 36$), and the dropout rate to be zero ($p = 1$); these values are quite realistic for the German case.¹⁰ In the top panel, the possibility of *on-*

9. A third force, ignored here, which leads to greater productivity, even if a person is inactive, is the process of physical and mental maturation.

10. The dropout rate from the British YT program (from information provided by the Employment Department) averages about 3 percent per month. Setting $p = 0.97$ in equation (4) has surprisingly little effect on the results: for example, with $h = 0.5$ and the rate of return set to 20 percent per annum, the trainee/adult wage ratio falls to 42.0 percent, compared with 43.1 percent with $p = 1$. If the assumption of risk neutrality were dropped, no doubt the dropout effect would be much more significant, since the majority of firms in the United Kingdom, as in Germany, only have a handful of trainees at any one time. The dropout rate plays the same role in equation (4) as the discount factor $1/(1 + r)$. Consequently, the results in table 2.1 are also insensitive to changes in the discount rate.

Table 2.1 Trainee Wages as a Proportion of Adult Rates (%)

Time Devoted to Off-the-Job Training, h (%)	Rate of Return to Off-the-Job Training, ρ (% per annum)		
	10.0	20.0	30.0
	No On-the-Job Training: $\sigma = 0$		
0	100.0	100.0	100.0
10	88.6	87.3	86.0
20	77.6	75.3	73.1
30	66.9	63.9	61.2
40	56.5	53.2	50.2
50	46.4	43.1	40.1
60	36.5	33.5	30.8
70	27.0	24.4	22.2
	On-the-Job Training: $\sigma = \rho$		
0	86.2	74.9	65.6
10	77.5	67.4	59.1
20	68.9	59.9	52.5
30	60.3	52.4	45.9
40	51.7	44.9	39.4
50	43.1	37.4	32.8
60	34.5	30.0	26.2
70	25.8	22.5	19.7

Source: Calculated from equation (4), with $n = 36$, $r = 0.1$, and $p = 1$.

the-job learning (learning by doing) is ignored, i.e., σ is set equal to zero. Results are shown for a range of values of ρ . About rates of return we have no direct information, and the assumed rates of 20 or 30 percent may seem excessive. But the rate of return measures the increase in productivity in the chosen occupation (e.g., the difference between the electrical skills of an 18-year-old electrician after three years of training and those of a starting, untrained 15-year-old) and so may not be unrealistic. In any case, it turns out that the trainee/adult wage ratio is relatively insensitive to the assumed rate of return. The principal influence on the ratio is the proportion of time devoted to training. Put the other way round, if trainee wages are about one-third of adult rates (as is the case in Germany), it implies that the average trainee is spending the majority of his time, perhaps as much as 60 percent in off-the-job training rather than in production. By contrast, even under the traditional British apprenticeship system, trainee wages were about two-thirds of adult rates (Jones 1985), so that if training were to break even, the amount of time devoted to training must have been substantially less: table 2.1 suggests that only some 30 percent of work time would have been devoted to training.¹¹

11. Even this figure may be too high since it does not take into account the fact that by tradition the British (unlike the German) employer paid the apprentice's college fees.

How much would these conclusions be altered by allowing for on-the-job learning? The latter provides another reason for trainee wages to be below adult rates. In the lower panel of table 2.1, on-the-job learning is assumed to have the same rate of return as off-the-job learning ($\sigma = \rho$). Clearly, the rate at which trainee productivity rises is now roughly doubled, but the effect on the trainee/adult wage ratio is comparatively slight: with a 20 percent rate of return to both types of training, a wage ratio of one-third implies that trainees are still spending more than half their time in *off*-the-job training.

The estimate that more than half of trainee time is devoted to off-the-job learning may seem unrealistically high: after all, trainees typically only spend one day a week at college. But off-the-job training also includes time spent on learning activities while on the firm's premises. The high estimate is also supported by other evidence. In a survey of more than 900 German firms, an expert commission found that trainees engaged in productive work for 125.5 days out of a total of 212.1 days on the job (i.e., excluding holidays and sick days) but that only some 62 percent of the 125.5 days was devoted to actual production, the remainder being given over to learning activities (Sachverständigenkommission Kosten und Finanzierung der beruflichen Bildung 1974, tables 17 and 51). Thus according to this survey, German trainees devoted only some 37 percent of their total time on the job to actual production work.

2.4 Conclusions

In the last decade, there have been great changes in the British system of youth training. It has now been accepted that vocational training after leaving school is desirable for *all* young people not continuing into full-time higher education, and not just for a small elite of craftsmen. It has also been accepted that a national system of vocational qualifications is necessary, which will bring some comparability and quality control to the myriad certificates awarded by a variety of private and public educational institutions. In these two important respects, the U.K. system has moved toward the German one.

But in other respects the United Kingdom has recently started to move away from the German model and indeed from general European practice. In the past, overall standards attained in these countries in a variety of occupations, by trainees gaining recognized craft qualifications, have been judged by previous studies to be roughly in line with those aimed for in Britain (Prais 1981; Steedman 1990; Steedman et al. 1991).¹² The more serious divergence from France and Germany has been the larger numbers trained to recognized craft standards and the more rapid rate of growth in these numbers in these countries over the past two decades. But the standards set by NCVQ for the various

12. The traditional British apprenticeship, when coupled with one of the recognized craft qualifications, provided a substantial economic return to its holder, according to the estimates of Blanchflower and Lynch (chap. 8 in this volume), based on data from the National Child Development Survey. In other words, these qualifications were recognized and valued in the marketplace.

“levels” into which it divides up vocational qualifications are low by continental standards, and the methods of assessment which NCVQ is prepared to accept are inherently unreliable and vulnerable to abuse (Prais 1991).

Furthermore, NCVQ has recently begun to downgrade the general and technical content of vocational training. A recent study (Steedman 1992) has pointed to the low level of general vocational education content, relative to that in the rest of Europe, in the new YT qualification targets (NVQ Level 2). This study was based on analysis of training for the construction industry; the phenomenon observed affects all those areas of YT dependent on government finance. That youth training provision should incorporate general transferable skills, in addition to occupation-specific and industry-specific training, has been accepted practice in the postwar period in all European countries. Acceptance has been based on the need for a degree of equity and social justice in the treatment of young people in training, relative to their coevals still in full-time education, on the need for firm foundations for professional identity based on the acquisition of recognized bodies of skill and knowledge, on the need for progression within—and beyond—the profession, trade, or industry, and finally, on the need in future working life for more flexible and autonomous working practices. Britain appears to be moving in a very different direction.

In Britain it is employers who now have the dominant influence on the vocational curriculum for YT, since theirs is the principal voice heard in NCVQ and in the TECs. As far as the other actors are concerned, the government has more or less excluded the trade unions, because of their perceived record of obstructionism, and has itself adopted a hands-off approach to the vocational curriculum—in strong contrast to the detailed control it has assumed over the *academic* curriculum. Aside from the interest that local groups of firms or industries may have in reducing the general educational content of the curriculum in favor of narrowly specific skills, the present arrangements give incentives to individual firms to lower standards.¹³ By contrast, we may note that there is *every* financial incentive, under the German system, for individual employers to support trainees’ work on college courses, since failure in these courses means that a trainee would have to leave an apprenticeship prematurely, with consequent loss to the employer of the investment in the trainee.

Are youth wages in the United Kingdom now sufficiently low relative to adult rates to make possible a high level of training? It is true that the trainee allowance is low (equivalent to the social security level), but the actual amounts paid by firms are often higher. Unfortunately, there are no official

13. In an effort to encourage the acquisition of NVQs by trainees, a bonus equal to about half the total government finance available for a trainee is to be paid to the employer when the trainee obtains NVQ Level 2. However, the employer is also responsible for *providing* training to NVQ Level 2—either through college courses or through training in the workplace. The NVQ assessors, who may be college lecturers or workplace employees, but in either case indirectly or directly financially dependent on employers, may therefore find themselves in a difficult position if they find it necessary to fail trainees and thereby deprive employers of substantial payments.

figures on the actual wages received by those on YT, but about a third of trainees are believed to have “employed status,” and so these at least must be paid substantially more than the trainee allowance. It must be remembered that firms wishing to take on YT trainees have to compete in an active market for youth labor (unlike in France, for example). According to the 1991 New Earnings Survey, hourly earnings of those less than 18 years old as a proportion of the corresponding hourly earnings for those aged 18–20 were 68 percent for males and 74 percent for females.¹⁴ The temptation for a young person to drop out of a traineeship in favor of a “real job” is therefore strong.

In addition, achieving a German level of training activity in the firm may involve heavy set-up costs, in the shape of special facilities for trainees, time devoted to formulating programs of in-firm training, and “training in training” for supervisory personnel. Given that the qualifications to which trainees are working are not highly valued in the marketplace and that the extent of future government financial support for training is uncertain (it is currently falling), it is understandable that U.K. firms should be unwilling to incur these costs.

In conclusion, the German system, we would claim, has found effective answers to the threefold problem of finance, content, and assessment and certification, which we outlined earlier. The standards of German vocational training are high and methods of assessment are reliable. The content of the training is adjudged by firms to be relevant to their needs. Partly for this reason but partly also because of the general educational element, training is attractive to the trainees, far fewer of whom fail to complete their traineeship than in Britain. Because of this virtuous circle, the financing problem can be solved: trainees pay for their own training, via loans from the firms which they work for, though government also contributes by paying for vocational schools. By comparison with the German one, the U.K. system can be characterized as a low-level equilibrium (Finegold and Soskice 1988). The fundamental obstacle preventing the United Kingdom from moving toward a German-type system is that the certificate to which the British trainee is working is of little economic value, first because the skill level it purports to certify is low, second because it is narrowly industry specific (although this may increase its value to employers, it reduces its value to employees), and third because, due to the lack of external control of the assessment system, it is an unreliable indicator of an individual’s actual skills. In consequence, trainees are unwilling to accept much of a reduction in wages in order to acquire such a certificate. Given

14. See U.K. Department of Employment, *New Earnings Survey 1991* (London: Her Majesty’s Stationery Office, 1991). The figures in this source for those less than 18 years old exclude most of those on YT. On the other hand, the figures for those aged 18–20 include those who are entering employment for the first time from further education, who presumably are able to obtain a higher wage on average than those 18–20-year-old who entered full-time employment at age 16. Hence, for those who have the lowest educational qualifications, the differential between youth and adult rates is likely to be even smaller than the figures in the text would suggest.

trainee resistance to lower wages, employers have no incentive to improve the quantity or quality of the training they offer.

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