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8 Training at Work: A Comparison of U.S. and British Youths

David G. Blanchflower and Lisa M. Lynch

8.1 Introduction

Recent initiatives, such as *Apprenticeship 2000* and the Department of Labor report *Work-Based Training* (1989), have urged a reexamination of apprenticeship training in the United States in order to bridge the skill needs of non-college-bound youths. Much of this renewed focus has been inspired by the successful experience with apprenticeships in Germany. While there is much to learn from the German experience, many of the supporting structures of the apprenticeship programs in Germany will be difficult to replicate in the United States (see Soskice, chap. 1 in this volume, for a review of these structures). These structures include the long-term relationships between banks and firms, the greater link between schools and postschool training, and the influence of local chambers of commerce on the number of apprenticeships offered. Therefore, an examination of an apprenticeship program in a country which has an institutional structure closer to that in the United States would be informative.

Such a comparison can be made with apprenticeship schemes in Great Britain in the 1970s. In 1964 Industrial Training Boards (ITBs) were created in Britain to promote the skill development of the work force. In particular, these ITBs could impose levies on employers to raise training funds to support an extensive apprenticeship program, and additional funds were provided by the

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government. The ITBs also developed standards and structures for these apprenticeships. Most programs involved training on the job together with a day-release program, a block-release program, or both. In addition, over 90 percent of these release programs were undertaken at local colleges. This link between on-the-job training and the schools extended in other directions as well. In particular, many apprentices would take nationally recognized exams, during or at the completion of their training, to obtain qualifications beyond the formal apprenticeship.

There were problems associated with the apprenticeship schemes in Britain, especially when compared to the German experience. Studies by Prais and Wagner (1983) and Steedman and Wagner (1987, 1989) documented in detail the differences in content and duration of training across apprenticeships in Germany and Britain. For example, training was more firm specific in Britain than in Germany, and in Britain apprenticeships were not being created in new growth industries such as computers. In addition, with the exception of hairdressing, women had much more difficulty in getting apprenticeships than did men. Nevertheless, we will argue that the program was relatively successful in training school-leavers in Britain, especially for men.

In the 1980s the ITBs were dismantled by the Thatcher government, and the government ceased to subsidize apprenticeships. Apprenticeships in Britain have been rapidly replaced by a government-led Youth Training Scheme,[1] which is administered at the local level by Training and Enterprise Councils (TECs)(see U.K. Department of Employment 1988). The structure of these TECs is based in part on the U.S. experience with Private Industry Councils, PICs. In particular, they are voluntary organizations and are local-based rather than industry-based. The TECs are not able to levy fees on local employers as the ITBs were and therefore depend on voluntary contributions by employers and government funds for training. This has resulted in problems with the TECs being underfunded.

All young people aged 16–18 who are not in school and are not employed must participate in YT in order to receive any benefit while not working. One consequence of YT has been the virtual abolition of youth "unemployment" in Britain for those aged 16–18. Work by Lynch (1985) on British school-leaver unemployment in the early 1980s indicated that there seemed to be a long-run cost (as measured by negative duration dependence in reemployment probabilities) of early spells of unemployment on subsequent labor market experience. Therefore, YT appears to be a substantial improvement over having 16-year-old school-leavers unemployed for their first years in the labor market. However, YT seems to have been introduced with limited empirical analysis of the impact on youths in Britain of the traditional apprenticeship and employer-provided training programs that YT replaced.

1. The YTS was subsequently renamed Youth Training (YT) in an attempt to emphasize its permanency.

Over the last decade the number of employer-supported apprenticeships in Britain has declined substantially. Estimates of the total number of apprentices, derived using self-assessment from a sample of individuals in the Labour Force Survey, suggests a decline from 367,000 apprentices in 1979 to 318,000 in 1986: in manufacturing the numbers were 154,000 in 1979 and 106,000 in 1986.[2] Given the concentration of apprenticeships in manufacturing we would have expected some decline in their number, independent of the actions by the British government in the 1980s. Manufacturing employment collapsed from 7,113,000 in 1979 (31.5 percent of all employees), to 5,138,000 in 1986 (24.6 percent of all employees), and to 4,872,000 in March 1991 (22.3 percent of employees)(U.K. Department of Employment 1991, table 1.2). The decline in the number of apprentices was accelerated by an explicit policy on the part of the Thatcher government to replace apprenticeships with YT. Trade unions had used the apprenticeship system as a means of restricting entry to certain occupations (e.g., lithographic printers) where closed shops operated. Thus, replacing the apprenticeship system was seen as one way to reduce the power and influence of trade unions in the British economy.

This paper compares and contrasts the structures of postschool training for young non-university graduates in Britain and in the United States. We are able to utilize two unique and broadly comparable longitudinal data series on young people, the U.S. National Longitudinal Survey Youth Cohort (NLSY) and the British National Child Development Survey (NCDS). In addition, we make use of two large individual data files—the 1981 and 1989 Labour Force Surveys—to determine how the labor market in the United Kingdom changed during the 1980s. We use these data to examine the early labor market experiences of young people as they make the transition from school to work.

There are two main reasons we have used cross-country comparisons to examine the issue of youth training. First, given that there is a debate in the United States about the possible expansion of apprenticeships, we hope to inform that debate by comparing and contrasting the U.S. system with a very different apprenticeship system that operated in the United Kingdom in the 1970s. In particular, apprenticeships in the United Kingdom tended to be of longer duration and were usually accompanied by some kind of nationally recognized qualification. Second, the apprenticeship system in the United Kingdom is evolving and in its place are emerging a series of government-funded training schemes. Unfortunately, these schemes do not appear to be as closely linked to nationally recognized qualifications as the traditional apprenticeships were. In addition, in evaluating the success of these programs it is important

2. There is some discrepancy between the estimates of the number of apprenticeships obtained when using individual rather than firm-level assessments for the years after 1979. For example, in 1979 employers in manufacturing also reported that there were 155,000 apprentices, however, in 1986 they reported only 61,800. This has arisen because participants in YTS report that they are undertaking an apprenticeship. The companies at which such individuals are placed do not classify them in the same way.

to have empirical evidence on the impact of the traditional apprenticeship schemes they have replaced.

In the remainder of the paper we focus on four issues: the extent of postschool training in Great Britain and the United States and the wage gains associated with it; the link between formal training and further qualifications in Britain and the return to formal qualifications in wages, differentials in the training experience by gender in the two countries, and the possible implications for skill development in Britain of dismantling significant elements of the traditional apprenticeship system.

In section 8.2 we provide details of the two longitudinal data files used in our empirical analysis and report on previous empirical work in the area. In section 8.3 we report on the extent of training coverage in the two countries. Section 8.4 provides a series of estimates of the wage gains associated with training derived from earnings equations and earnings growth equations for both Britain and the United States. In section 8.5 we provide information for the United Kingdom on how training changed in the 1980s, using data from the 1981 and 1989 Labour Force Surveys. Section 8.6 reports our conclusions.

8.2 The Empirical Framework

There have been relatively few empirical studies in the United States which have examined the extent of private-sector training in general or, more specifically, the skill formation process of young workers once they leave school. This is especially true for young workers who are not college graduates. This limited analysis has been due primarily to the lack of detailed information on postschool training and the lack of matching detailed employment histories of workers. Recent exceptions to this include work by Brown (1989), Gritz (1988), Lynch (1991, 1992b), Lillard and Tan (1986), Mincer (1983, 1988), and Pergamit and Shack-Marquez (1986). Only the papers by Gritz and Lynch use recent data from the NLSY on young people in the 1980s. The primary findings of these studies with regard to young people in the United States suggest that private-sector training increases the total amount of time in employment for females but not for males. Moreover, college graduates—especially those in technical, managerial, and professional occupations—are much more likely to receive company-provided training. Formal training for non-college graduates takes the form primarily of off-the-job training from "for profit" proprietary institutions. Company-provided training does not appear to be easily portable from employer to employer for non-college graduates. Finally, there are significant differences in the extent of and return to training by race and gender.

There have also been few studies in Britain of the extent of postschool training. Again, this is primarily a function of the lack of appropriate data sources to examine this issue. Exceptions include Baker (1991), Dolton, Makepeace,

and Treble (chap. 9 in this volume), Greenhalgh and Stewart (1987), Rigg (1989), Booth (1990, 1991), Green (1991), Payne (1991), and Greenhalgh and Mavrotas (1991a, 1991b). Most of these studies refer to either one-time employer surveys of training or to summary findings, from the Labour Force Survey or General Household Survey in the 1980s, of the patterns of training. With the exception of the papers by Baker and Dolton et al., there have been no studies, using longitudinal data, of the extent and rates of return to various forms of postschool training in Britain. The paper by Baker uses an empirical framework proposed by Lynch (1992) and data from the NCDS. Unfortunately, Baker only examines the returns to training for males in Britain and, as we will discuss later, ignores an important dimension of training in Britain—the link with formal qualifications. Dolton et al. have presented preliminary findings of the returns to YT schemes for youths in Britain in the 1980s. They are only able, however, to examine the labor market experience of youths in the first two to three years after leaving school, so few in their sample have actually completed their training programs.

In order to examine the differences across Britain and the United States in the skill development of young workers, we utilize two micro longitudinal data sets—the NLSY for the United States and the NCDS for Great Britain. The NLSY is an annual survey of 12,686 U.S. males and females who were aged 14–21 at the end of 1978. These respondents have been interviewed every year since then on all aspects of their labor market experiences. The response rate has been high throughout the survey, with over 90 percent of the original sample still responding in 1988. The data on types of training received (other than governmental or schooling) are some of the most comprehensive available in the United States on private-sector training. Respondents are asked about the types of training they had received over the survey year (up to three spells) and the dates of training periods by source. Potential sources of training include business colleges, nursing programs, apprenticeships, vocational and technical institutes, barber or beauty schools, correspondence courses, and company-provided training. These training spells can be matched with detailed employment histories and schooling histories.

The training data are divided into three variables: company training (ON-JT), apprenticeships (APT), and training obtained from for-profit proprietary institutions outside the firm (OFF-JT). The variable OFF-JT includes courses obtained from business colleges, barber or beauty schools, nursing programs, vocational and technical institutes, and correspondence courses. Our measure of off-the-job training may include both individual-financed and firm-financed training. However, only about one-quarter of those receiving off-the-job training had the training costs paid by their employer. All of these types of training programs are independent of training received in a formal regular schooling program. Unfortunately, until the 1988 survey, the training questions refer to only those spells of training that lasted at least four weeks (they do not have to be full-time programs). This suggests that the NLSY measure of train-

ing is more likely to capture formal training spells than informal on-the-job training.

For the wage analysis presented in this paper, a subsample of the 12,686 NLSY respondents has been selected. We have excluded from the analysis all of the 1,280 respondents in the military subsample. For comparison with the British data we have created a sample from the NLSY that pools all those youths who were age 18 in 1979, 18 in 1980, or 18 in 1981. We then follow these youths until they reach age 25. Since we are primarily interested in the training process of non-college-bound youths, we exclude from our sample anyone who has completed a four-year college or university degree. We also exclude anyone who does not have a wage observation at some time during the year he is 25 years of age or anyone who is self-employed. These sample restrictions yield a final sample of 2,275 for the NLSY.

For our analysis of British youths we use the NCDS. This longitudinal survey takes as its subjects all those living in Great Britain who were born between March 3–9, 1958. The survey has been sponsored by five government departments—Health and Social Security (DHSS), Education and Science (DES), Employment (DE), Environment (DOE), and the Manpower Services Commission (MSC) (which has now been abolished). Major surveys of the subjects were carried out in 1965 (NCDS1), 1969 (NCDS2), 1974 (NCDS3), and 1981 (NCDS4). In addition to those born during the first week of March 1958, all immigrants who arrived in Britain between 1958 and 1974 and who had been born during that week were added to the sample. Finally, information was also solicited from the respondents' parents, teachers, and doctors. The size of the original cohort was 18,559.

Contact has been maintained with a relatively high number of the original cohort. High response rates to the first three sweeps of the survey were achieved primarily because of the cooperation of the public school system. However, it proved more difficult to obtain responses when the cohort reached age 23, when many had left their original family homes and started families of their own. The 1981 survey, which took place between August 1981 and March 1982 when the respondents were age 23, contained a total of 12,537 interviewees or approximately 76 percent of the original target sample. Elias and Blanchflower (1988) provide evidence of response bias: individuals with the lowest levels of attainment on the early ability tests were most likely not to respond to subsequent sweeps of the survey. The extent to which our estimates are affected by this sample attrition is the subject of current research. The sample used in the wage analysis excludes all those who were self-employed, all graduates of universities or polytechnics, and anyone not employed at age 23 in 1981.[3] These restrictions, and the exclusion of youths with information

3. A more recent survey taken in 1990, when the respondents were age 32, was not publicly available at the time of writing (August 1993).

missing on some of the ability tests, yield a final sample of 5,950, or just over two-thirds of those in employment in 1981.[4]

There were a variety of training sources available for British youths during the 1970s, including primarily apprenticeships and company-sponsored training. The training programs were typically split between colleges and employer training centers and were usually full-time. In contrast, most apprenticeships provided a mix of training at the work site plus day-release programs run at local colleges. During this period in Britain, the use of non-employer-sponsored off-the-job training programs, of the U.S. type discussed above, was quite limited.

8.3 The Extent of Training in the United States and Britain

Before comparing the extent of training in these two countries and the wage gains associated with these types of training, it is important to establish the similarities or dissimilarities between the two samples of youths. Tables 8.1 and 8.2 present a summary of the labor market status of comparable groups of youths in the NCDS and in the NLSY. The British NCDS numbers in table 8.1 show the percentage of the sample employed, unemployed, and out of the labor force (OLF) each year at ages 16–19 and then again at age 23. The remaining individuals are in full-time education, e.g., 37 percent at age 16. For those employed, we also show the percentage engaged in training or apprenticeships. In 1974, when the NCDS cohort was 16 years old, approximately 59 percent of British youths were employed, 2 percent were unemployed, and 2 percent were out of the labor force. At that time more than 40 percent of male employees were apprenticed compared with only 8 percent of employed females. A further 6 percent of male employees and 4 percent of female employees were receiving some type of company training from their employers. By age 23, virtually all individuals had left their apprenticeships.

Table 8.2 presents figures comparable to those in table 8.1, using data from the U.S. NLSY. In this table, we follow a 1981 NLSY subsample of 18-year-olds until they are 25 years old in 1988. Given the differences in school-leaving patterns across the countries, we believe that the appropriate comparison group to 16-year-old school-leavers in Britain is 18-year-olds in the United States. The overall employment rate at age 25 in the NLSY in 1988 is very similar to that in the NCDS in 1981—approximately three-quarters of individuals in the cohort. One major difference between the two countries is the much higher proportion of males who were out of the labor force in the United States and the higher proportion of females who were out of the labor force in Britain. However, even though these two samples examine quite different periods of time, it does appear that, using crude measures of labor market status, there

4. We include 10 individuals who received a degree in conjunction with their apprenticeship.

Table 8.1 **Labor Market Status: Great Britain (NCDS), 1974–81 (% of cohort)**

	Age				
Status	16	17	18	19	23
			All Workers		
Employed	59.0	65.8	74.2	74.4	73.4
No training	67.5	69.5	72.7	78.2	94.0
On-the-job training	6.8	7.1	8.0	7.1	6.1
Apprenticeship	25.8	23.4	19.3	14.7	0.8
Government schemes	–[a]	–[a]	0.1	0.1	0.1
Unemployment	2.4	3.7	4.4	4.1	9.3
Out of labor force	1.6	3.4	5.4	6.9	13.8
N	12,458	12,470	12,440	12,468	12,422
			Males		
Employed	62.7	70.2	78.1	79.9	82.8
No training	50.2	53.4	59.4	67.6	93.4
On-the-job training	6.2	6.7	7.2	6.4	6.4
Apprenticeship	43.5	39.9	33.4	26.0	1.1
Government schemes	–[a]	–[a]	–[a]	0.1	0.1
Unemployment	2.8	3.7	4.6	4.3	12.2
Out of labor force	0.7	0.8	1.4	1.1	1.8
N	6,244	6,241	6,217	6,245	6,212
			Females		
Employed	54.6	61.6	70.7	69.1	65.8
No training	88.3	87.5	87.0	90.3	95.3
On-the-job training	3.7	8.0	9.5	8.4	5.5
Apprenticeship	8.1	4.5	3.5	1.3	0.5
Government schemes	–[a]	–[a]	–[a]	0.1	–[a]
Unemployment	2.8	3.7	4.2	3.9	6.6
Out of labor force	2.4	5.8	9.4	12.7	26.0
N	6,214	6,229	6,223	6,223	6,210

Source: NCDS tapes.

Note: Employment status determined in the February prior to the group's birthdays. In the case of the final column, when the respondents were age 23, this was evaluated in May 1981, close to the end of the interview period.

[a]Less than 0.05 percent.

are many similarities across them. The most obvious differences between the two countries is in the extent of coverage of apprenticeships, which are relatively rare in the United States but which were widespread in Great Britain, primarily among young men.

Table 8.3 shows the percentage in both the British NCDS sample and the U.S. NLSY sample who had ever received training, by gender and type of training.[5] Here we see evidence of the sharp differences in the extent and na-

5. In the NCDS respondents were asked, "Have you ever been on any training courses which involved at least 14 days or 100 hours attendance at a college, training centre or skill centre?"

Table 8.2 **Labor Market Status: United States (NLSY), 1981–88 (% of cohort)**

Status	Age				
	18	19	20	21	25[a]
			All Workers (N = *1,559*)		
Employed	54.6	56.6	58.7	63.7	77.8
On-the-job training	1.7	1.4	2.0	2.1	3.8 (10.2)
Off-the-job training	8.8	11.3	7.1	4.8	5.5 (5.9)
Apprenticeship	0.2	0.7	0.4	0.1	0.5 (0.9)
Unemployed	15.3	14.3	13.3	9.7	4.6
Out of labor force	8.8	14.3	15.0	15.0	15.6
			Males (N = *785*)		
Employed	56.5	58.0	60.0	64.2	84.1
On-the-job training	2.4	1.3	0.9	3.2	5.9 (12.9)
Off-the-job training	10.7	10.4	6.0	3.1	3.6 (4.3)
Apprenticeship	0.4	1.2	0.7	0.2	1.0 (1.5)
Unemployed	15.0	15.1	12.8	9.2	2.8
Out of labor force	7.4	12.1	12.6	14.2	11.9
			Females (N = *774*)		
Employed	52.7	55.1	57.3	63.3	71.5
On-the-job training	1.0	1.6	3.1	1.0	1.4 (7.1)
Off-the-job training	7.9	12.3	8.3	6.5	7.3 (7.7)
Apprenticeship	0.0	0.2	0.0	0.0	0.0 (0.3)
Unemployed	14.8	13.5	13.8	10.3	6.5
Out of labor force	10.1	16.5	17.5	15.8	19.3

[a]Numbers in parentheses include training spells of less than four weeks.

ture of training across the two countries. For example, 52 percent of individuals in Great Britain had received some training by age 23, compared with 35 percent for the United States when respondents were age 25. When the sample is divided by gender, the differences across the two countries are even more striking. Approximately 65 percent of British males had received some form of training by age 23, compared to 33 percent in the United States at age 25. However, young females in the United States are more likely to have received additional training after school than are females in Britain. An examination of durations of training spells again provides some interesting contrasts between the two countries. In table 8.4 we see that apprenticeships in Britain took, on average, 43 months for males to complete and 34 months for females. A few apprenticeships lasted as long as five years. Training courses obtained while

Further details on up to three of these training courses were then also collected. In the NLSY, training information was obtained from the following question: "In addition to your schooling, military and government-sponsored training programs, did you receive any other types of training for more than one month?" Respondents were also asked, "Which category best describes where you received this training?" Both of these questions were asked for up to three training questions per year.

Table 8.3 **Training Coverage by Age 23 (Great Britain) and Age 25 (United States) (% of cohort)**

Type of Training	All	Males	Females
		Great Britain (NCDS)[a]	
Ever had any training	52	65	35
Ever started an apprenticeship	24	39	5
Ever started other training	33	34	30
N	9,209	5,179	4,030
		United States (NLSY)[b]	
Ever had any training	35	33	36
Ever started an apprenticeship	3	4	1
Ever started on-the-job training	8	8	7
Ever started off-the-job training	28	25	31
N	2,300	1,221	1,079

[a]Sample includes only individuals in employment in 1981, when age 23.

[b]Sample composed of individuals in employment when age 25.

employed, on the other hand, were typically much shorter in duration, with well over half of these courses completed in under six months. While the NLSY numbers on youths in the United States are not strictly comparable to the British data (the NLSY data include both completed and uncompleted spells), it does appear that, on average, the duration of apprenticeship training is much shorter in the United States. However, the duration of off-the-job training in the United States seems similar to or even longer than the duration of other training courses in Britain.

The dimension of training in Britain that differs the most from that in the United States is the link between training and further qualifications. When youths complete apprenticeships or firm-provided training in Britain, they can take examinations that give them formal qualifications. This is rarely true for on-the-job training or off-the-job training in the United States. Approximately nine out of ten individuals in the NCDS sample who completed apprenticeships also obtained some kind of qualification during or at the end of their programs. Table 8.5 shows that two major types of qualifications account for nearly 60 percent of all those obtained by apprentices—City and Guild Craft and City and Guild Advanced. These are qualifications that are typically taken by craft workers. The remaining qualifications are dispersed across a wide range of different types. A higher proportion of British females did not receive a qualification after their apprenticeships than was the case for men. Qualifications obtained from training courses are also reported, in the bottom half of panel A. Individuals often progressed in a sequence from one training course to another (e.g., from an ordinary National Diploma to a Higher National Di-

Table 8.4 Duration of Training

A. Great Britain (NCDS): Distribution of Training Durations (% of base)

Duration	Apprenticeships[a] Completed	Apprenticeships[a] Uncompleted
	Males	
≤ 1 year	3	57
> 1 year but ≤ 2 years	5	23
> 2 years but ≤ 3 years	19	15
> 3 years but ≤ 4 years	52	5
> 4 years	21	–
Mean duration (months)	43.19	14.91
N	1,340	411
	Females	
≤ 1 year	7	72
> 1 year but ≤ 2 years	16	18
> 2 years but ≤ 3 years	53	10
> 3 years but ≤ 4 years	16	–
> 4 years	8	–
Mean duration (months)	33.7	10.93
N	100	58

	Training Courses[b] First Course	Second Course	Third Course
≤ 1 month	24	34	46
> 1 month but ≤ 6 months	28	27	30
> 6 months but ≤ 12 months	18	17	15
> 12 months	31	22	14
N	2,852	1,060	420

B. United States (NLSY) Average Duration of Training[c] (months)

Type of Training	All	Males	Females
Apprenticeship	16	19	10
Company-provided training	7	8	6
Off-the-job training	10	11	10

[a]Base = individuals who ever started an apprenticeship.

[b]Base = individuals who received at least one training course. Apprenticeships are not counted here as training courses.

[c]Completed and uncompleted spells of non–college graduates.

Table 8.5 **Distribution of Qualifications or Training (% of base)**

Qualification	All	Males	Females
	A. Great Britain (NCDS)		
		Apprenticeships[a]	
Other technical qualifications	5.9	5.1	14.0
City and Guild Operative	2.4	1.8	8.4
City and Guild Craft	27.4	28.1	19.6
City and Guild Advanced	31.5	33.9	5.6
City and Guild FTC	6.2	6.7	0.7
Ordinary National Diploma	2.8	2.8	2.8
Professional level 1	2.1	1.4	9.1
Other qualifications	9.0	9.6	5.5
None	12.7	10.6	34.5
N	1,658	1,515	143
		Training from Other Sources (first training course)[b]	
Other technical qualifications		3.5	1.0
Royal Society of Arts stage 1/2/3		0.3	9.6
City and Guild Craft		4.3	1.9
City and Guild Advanced		2.2	0.5
Ordinary National Diploma		6.2	3.7
Higher National Diploma		2.1	0.4
Business/Technical Education Council Certificate/Diploma		1.2	1.6
Professional level 1		2.9	2.6
Nursing		0.8	18.9
Other qualifications		22.5	16.3
None		54.0	43.5
N		1,506	1,131

	B. United States (NLSY)							
	Males				Females			
Schooling	No Training	OJT	OFFJT	APT	No Training	OJT	OFFJT	APT
Less than high school	41	21	20	20	24	16	14	33
High school	40	55	55	40	49	56	58	33
Post–high school	19	24	25	40	27	28	28	34
N	815	95	310	47	691	75	332	6

Note: OJT = on-the-job training, OFFJT = off-the-job training, APT = apprenticeship.

[a]Base = individuals with an apprenticeship.

[b]Base = individuals who received at least one training course.

ploma) and then on to some further professional qualification. Approximately 50 percent of those who participated in a training course other than an apprenticeship received no further qualification, while the other 50 percent received a wide range of qualifications. Females were generally more likely to have obtained a qualification than men. Typing/secretarial qualifications (e.g., Royal

Society of Arts stages 1, 2, and 3) and nursing qualifications are especially important for females.

Table 8.5 also indicates that there is a relationship between formal schooling and training in the United States. In particular, those who go on to additional schooling after high school are more likely to participate in some training (especially off-the-job training). In addition, those who complete high school are much more likely to receive company-provided training than those who drop out. It could be argued that, while a lower percentage in the United States have postschool training, a much higher percentage go on to post-high-school education than in Britain. Therefore, if you include in training the 20 percent of our U.S. sample that has post-high-school education, the training differential in table 8.3 between the United States and Britain would go away. However, approximately 15 percent of our British sample of non-university graduates stay on in school after age 16, so they should be included in training as well. Nevertheless, in all of the following empirical work we will report estimates on dummy variables for completing high school and for completing some post-high-school education in the equations for the United States.

It is possible to compare the distribution of youth employment across industries in the two countries and, more specifically, to see which sectors have higher concentrations of training. We find that apprenticeships in Britain in 1981 appear to be concentrated in the manufacturing sector. However, 43 percent of all male apprentices are not in the manufacturing or construction sectors, and over 80 percent of all female apprentices in Britain are not in these two sectors. Therefore, apprenticeships in Britain in the 1970s did not occur just in the manufacturing sector. This suggests that decline in apprenticeships in the 1980s was not simply a function of sectoral decline. In the United States, it is interesting to note that over 50 percent of females who received company-provided on-the-job training were in wholesale and retail trade and finance, insurance, and real estate. In contrast, 53 percent of males who received company-provided on-the-job training were in construction, manufacturing, and transportation, communication, and utilities.

8.4 Comparative Wage Gains to Training

We have seen that there are distinct differences in the extent of postschool training for young workers in Britain and the United States. In this section, we discuss whether the wage gains associated with the various types of training differ across the two countries. In order to provide econometric evidence on this issue, we estimated log hourly earnings for the two countries. Our aim here has been to estimate common specifications across both countries, subject to data limitations and differences in both institutional structures and industry and occupational classification systems. Information is available in both the NCDS and the NLSY on gender, marital status, disabled status, the presence of children, experience, part-time work, firm/establishment size, months of

Table 8.6 **Great Britain (NCDS) Regression Results: Hourly Earnings Equations for Non–College Graduates**

Variable	All Workers	Male	Female
Male	.1651	—	—
	(17.26)		
Union member	.0691	.0622	.0632
	(7.85)	(4.91)	(5.24)
Log unemployment rate	−.0601	−.0415	−.0659
	(2.55)	(1.24)	(2.04)
Months in current job*1,000	.6288	.2405	.6460
	(3.17)	(0.88)	(2.26)
Training Variables			
Trained with current firm	.0244	.0178	.0255
	(2.97)	(1.51)	(2.26)
Apprenticeship, no qualifications	.0234	.0178	.0175
	(3.79)	(2.26)	(1.70)
Apprenticeship + City and Guild Craft	.0418	.0436	−.1093
	(2.12)	(1.95)	(1.57)
Apprenticeship + City and Guild Advanced	.0717	.0718	.0274
	(3.75)	(3.30)	(0.27)
Doing an apprenticeship now	−.1279	−.0928	−.1917
	(1.94)	(1.19)	(1.44)
Constant	5.3651	5.2554	5.2581
	(75.06)	(53.98)	(52.29)
$\bar{R}^2$	.3510	.2978	.3717
F	27.08	12.45	14.58
DF	5,950	3,197	2,635

Note: T statistics in parentheses. All equations inlude the following additional controls—dummies for marital status, number of children, disability status, part-time work, shiftwork, temporary job, sheltered job, two jobs, employed in a branch, establishment size, highest qualification, ever been on a picket line, problems with numbers, problems with literacy, ability tests, months since first job, number of jobs since leaving school, ever unemployed, ever out of the labor force, experience in the labor market, 63 industry dummies, 11 region dummies, and 4 month-of-interview dummies.

tenure in the current job, race, union status, local unemployment conditions, training and qualifications, ability test scores, and number of jobs since leaving school, as well as on industry and region. In addition, a number of country-specific controls were included—e.g., month of interview, in the case of Britain, and the year the individual reached age 18, for the United States.

Subject to these limitations, tables 8.6 and 8.7 present results from standard log earnings specifications for Great Britain and the United States, respectively. In table 8.6 we find that, in Britain in 1981, ever having received training with the individual's current employer (outside an apprenticeship)[6] raised hourly earnings, on average, by 2 percent, ceteris paribus. This figure is

6. This variable is coded as one if the respondent had received training of any kind (no matter what the duration or type of training) while working for her current employer, zero otherwise.

roughly similar across males and females. For those who completed an apprenticeship, earnings were found to be approximately 5 percent higher in an equation which also included a set of highest qualification dummies.[7] However, the wage gain to apprenticeships is even higher than this when we include the gain associated with additional qualifications received alongside apprenticeship. After some experimentation, we set all of the highest qualification variables to zero for those who obtained an apprenticeship and included three additional variables to indicate the qualification obtained alongside the apprenticeship. On the basis of a series of *t*-tests, we combined variables for those individuals with only an apprenticeship and those with all other qualifications apart from either a City and Guild Craft Certificate or a City and Guild Advanced Certificate. For both men and women, simply obtaining an apprenticeship raised hourly earnings by approximately 2 percent. For men, however, a City and Guild Craft Certificate conveyed a return of a further 2 percent, while a City and Guild Advanced Certificate conveyed a further 5 percent return. We could find no evidence for any significant positive certification effects for women. If the individual was taking an apprenticeship at the date of interview in 1981, pay was approximately 10 percent lower, ceteris paribus, in the case of males, and nearly 20 percent lower, in the case of females. However, it should be noted that these effects are poorly defined (*t*-statistics = 1.19 and 1.44, respectively).

In table 8.7 we see that in the United States, by age 25, spells of training provided by previous employers had no impact on current wages, while having had some company training with the current employer (whether completed or uncompleted) increased wages by 8 percent (although the significance of this is marginal). Having received some form of off-the-job training in the past seemed to raise wages by around 4 percent, with no difference across males and females. Having been an apprentice raised earnings by around 20 percent for males but had no effect for females in the United States. If post-high-school education is an important source of training for young workers, we would expect to see significant effects in the wage equation. However, post-high-school education seems to have no effect on the wages of males and a large effect for females.

There are a number of remarkable similarities in the coefficients on many of the variables we have estimated in the two countries. For some variables such as marital status, whether a branch employee, and firm size, the coefficients were almost identical. However, there are some differences. In both countries there is evidence of a downward sloping wage curve,[8] although the unemployment elasticity of pay is greater in absolute terms in the United States

7. This estimate is obtained (results not reported) by including a dummy variable which is set to one if the individual had completed an apprenticeship, zero otherwise.

8. For further discussion of the relationship between local unemployment and pay, see Blanchflower (1991), Blanchflower, Oswald, and Garrett (1990), and Blanchflower and Oswald (1990, 1991, 1994).

Table 8.7 **United States (NLSY) Regression Results: Hourly Earnings Equations (real wage at age 25) for Non–College Graduates**

Variable	All Workers	Male	Female
Male	.16	–	–
	(6.32)		
Black	−.01	−.003	−.02
	(0.33)	(0.08)	(0.44)
Union coverage	.14	.17	.10
	(6.04)	(5.19)	(2.86)
Log unemployment rate	−.20	−.21	−.21
	(7.18)	(4.96)	(5.47)
Tenure in current job (weeks)	.001	.001	.001
	(2.37)	(1 68)	(1.59)
Previous company training	−.03	−.02	−.03
	(0.65)	(0.36)	(0.56)
Previous off-the-job training	.04	.04	.04
	(2.07)	(1.27)	(1.45)
Ever had apprenticeship	.19	.22	−.14
	(3.16)	(3.27)	(0.80)
Company training with current employer[a]	.08	.08	.09
	(1.48)	(1.00)	(1.10)
Off-the-job training during current employment[a]	−.02	−.03	−.03
	(0.53)	(0.47)	(0.55)
Still apprentice	.06	−.10	.66
	(0.23)	(0.32)	(1.50)
High-school graduate	.03	.004	.08
	(1.31)	(0.12)	(2.28)
Post–high school	.07	.01	.14
	(2.51)	(0.34)	(3.20)
Constant	1.24	1.51	1.39
	(12.44)	(9.99)	(9.66)
$\bar{R}^2$	.33	.29	.34
F	16.67	7.71	8.83
N	2,275	1,204	1,070

Note: Absolute value t-statistics in parentheses. All equations include the following additional controls—Hispanic, marital dummies, disability, number of children, part-time work, branch employee, firm size, ASVAB scores, experience, experience squared, number of jobs, region, SMSA, dummies for year turned age 18, and 34 industry dummies.

[a]Includes both completed and uncompleted spells.

than it is in the United Kingdom (−.06 vs. −.2, respectively). The union effect is stronger in the United States than in Britain (14 percent vs. 7 percent) even though the percentage unionized is much lower in the United States. Apart from these last two coefficients, the equations are remarkably similar. This suggests to us that the underlying labor markets are not that dissimilar, so that examining the differences in training across the two countries can be informative.

Before we reach any final conclusions on training in Britain and the United

States, it is important to note that a common problem in all studies of the returns to training is the issue of bias in the training estimates due to self-selection. Employers are more likely to place in training programs those individuals who have some unobservable characteristics such as "trainability." In addition, individuals who are more motivated may be more likely to pursue off-the-job training or apprenticeship programs. In both cases the estimated coefficients on the various training measures will be biased upward. A variety of ways to try to address this issue are described in Heckman (1979) and Heckman and Robb (1986). We follow a simple strategy in which we assume an individual's wage at time t can be expressed as

$$\log(w_{it}) = Z'_{it} b + f_i + e_{it},$$

where Z' is a vector of variables affecting wages that vary for each individual over time, and the f_i are all the characteristics that are individual specific but time invariant. By differencing individuals' wages over time, all time-invariant effects (both observed and unobserved) drop out, and the training coefficients may be estimated without bias.

In tables 8.8, 8.9, and 8.10 we present estimates from a fixed effect model, which assumes that self-selection varies only across individuals and not over time for a particular individual. In the NCDS, it is difficult to obtain a continuous wage history of individuals and a corresponding history of factors such as marital status, local unemployment rates, qualifications, and training. Therefore, we have used information on the weekly wages associated with the first job after leaving school: we then differenced that from wages in the 1981 interview, when the individuals were age 23. Hours of work were not reported for the first wage, so we were forced to use the difference in real weekly wages between the first and the current job as the dependent variable in our wage change equation.[9] Because the first job could have occurred at any time over the seven-year period 1974–1981,[10] we have also included seven year dummies to indicate the year in which the first job occurred.

As can be seen from table 8.8, apprenticeships have a positive and significant effect on real wage growth for men but no effect at all for women. For men, an apprenticeship alone increases wage growth between the first and the current job by nearly 15 percent. If that apprenticeship was accompanied by a City and Guild qualification, an Ordinary National Certificate/Diploma (ONC/D), or a Higher National Certificate/Diploma (HNC/D),[11] the coefficient is considerably higher. In the case of an apprenticeship with a City and Guild

9. Unfortunately, a suitable regional price index is also unavailable, and so we are forced to deflate (logs of) both the first and current weekly wage by the aggregate retail price index for the relevant month.

10. However, the vast majority of individuals had their first job when they were age 16. The age at which individuals started their first job are as follows: age 15—0.3 percent, age 16—64.0 percent, age 17—12.9 percent, age 18—13.5 percent, age 19—4.4 percent, age 20—1.9 percent, age 21—1.9 percent, age 22—0.9 percent, and age 23—0.3 percent.

11. Certificates were given for part-time study and diplomas for full-time study.

Table 8.8 **Great Britain (NCDS) Regression Results: Wage Difference Equations for Non–College Graduates**

Variable	All Workers	Male	Female
Tenure in current job (months)	.0016	.0007	.0023
	(5.10)	(1.63)	(5.02)
Training only	−.0534	−.0341	−.1370
	(2.43)	(1.15)	(4.31)
Training + City and Guild Operative	.0288	−.0048	.1263
	(0.26)	(0.04)	(0.28)
Training + City and Guild Craft	.0539	−.0236	−.0329
	(1.01)	(0.39)	(0.29)
Training + City and Guild Advanced	.2355	.2293	.0948
	(3.62)	(3.17)	(0.88)
Training + ONC/D	.0440	−.0038	.0484
	(0.92)	(0.07)	(0.67)
Training + HNC/D	.0841	.0375	.1394
	(1.48)	(0.58)	(1.17)
Training + other qualifications	.1291	.1074	.1370
	(7.97)	(4.75)	(6.21)
Apprenticeship only[a]	.0931	.1448	−.0634
	(2.15)	(2.98)	(0.66)
Apprenticeship + City and Guild Operative	.2813	.2948	.0693
	(3.01)	(2.74)	(0.38)
Apprenticeship + City and Guild Craft	.1950	.1720	−.0159
	(6.45)	(5.38)	(0.14)
Apprenticeship + City and Guild Advanced	.2309	.1997	.0628
	(8.08)	(6.67)	(0.38)
Apprenticeship + ONC/D	.2443	.2508	−.1128
	(2.94)	(2.83)	(0.48)
Apprenticeship + HNC/D	.2656	.2406	.4317
	(2.77)	(2.40)	(1.30)
Constant	1.4128	1.5787	1.3086
	(50.62)	(40.63)	(33.82)
$\bar{R}^2$	.6018	.5743	.6070
F	96.31	48.15	49.34
DF	6,826	3,735	2,987

Note: The dependent variable for this equation is the log real weekly earnings in 1981 minus the log real weekly earnings of the first job after leaving school. Other variables included in this equation—switches to part-time status, 4 change in plant size variables, 7 years since first job variables, number of jobs since leaving school, ever unemployed and ever out of the labor force since leaving school dummies, and 94 industry and 12 occupation switches. The sample size is now larger than in the wage levels equation (table 8.6) because we do not have to drop observations with missing ability tests.

[a]Includes not only apprenticeships with no other qualifications but also apprenticeships accompanied by all other qualifications except the ones identified above.

Operative qualification the wage gain rises to approximately 30 percent. Rates of return to apprenticeships, especially when accompanied by a qualification, are substantial. For example, for men with an apprenticeship plus a City and Guild Operative qualification the coefficient of .2948 translates into a rate of return of 9.12 percent.[12] If a depreciation rate is imposed at .05, the rate of return falls to 4.8 percent.

Other employer-provided training which is not accompanied by a qualification appears to significantly *lower* female earnings by around 14 percent. There is also some evidence that the wage gains to training are greater if accompanied by qualifications. City and Guild Advanced qualifications for men and "other qualifications" for women (mostly in nursing) have wage enhancing effects.

Since the time period covered between the first and current jobs in table 8.8 varies between one and seven years, we have also repeated this analysis (not presented) on a group of respondents (64 percent of the sample), all of whom left school at the minimum school-leaving age of 16 in 1974 and whose first job was in that year.[13] The results are qualitatively similar to those in column 1 with the exception that training accompanied by a City and Guild Craft qualification provides a substantial gain in earnings for this group. Also, apprenticeships accompanied by either an ONC/D or an HNC/D provide an even higher gain in earnings than was found in column 1.

One potential criticism of the results reported in table 8.8 is that the returns to apprenticeships and/or training simply reflect a process of selection into union jobs. In table 8.9 we reestimate equation 1 (col. 1) in table 8.8 for union and nonunion workers, separately. We only have information on union status of the respondents at age 23; however, if apprenticeships provide entry to union jobs one would expect to observe a high correlation between union status at

12. These rates of return are calculated as follows. The main costs arise because apprentices pay a proportion of the cost of their training in the form of lower wages. To estimate the size of this cost we ran a regression of log weekly earnings in the first job using the full set of controls from table 8.9, plus a variable to indicate whether the individual was doing an apprenticeship. This suggested that earnings were reduced by approximately 18 percent, ceteris paribus, in the case of men and 27 percent in the case of women (results not reported). In our calculations we assume that the average duration of an apprenticeship is four years (see table 8.4). We assume that there are 50 years of lifetime work (from age 16 to age 66). The coefficients from table 8.11 allow us to identify the percentage wage change between the first and current job—because the dependent variable is in natural logarithms we take antilogs and deduct one. We then calculate the internal rate of return, which sets the following stream of costs and benefits to zero:

$$1/(1 + r)^{4}*(W_{AT} - W_{NT}) + (1 - d)/(1 + r)^{5}*(W_{AT} - W_{NT} + \ldots +$$
$$(1 - d)^{45}/(1 + r)^{49}*(W_{AT} - W_{NT}) - (W_{NT} - W_{DT}) - (W_{NT} - W_{DT})/(1 + r) -$$
$$(W_{NT} - W_{DT})/(1 + r)^{2} - (W_{NT} + W_{DT})/(1 + r)^{3} = 0,$$

where W_{DT}=wages during training, W_{NT}=wages without training, W_{AT}=wages after training, d=the depreciation rate, and r=the internal rate of return. In the case of apprenticeships with City and Guild Operative qualifications $W_{DT} = .81W_{NT}$ and $W_{AT}=1.35W_{NT}$.

13. Compulsory schooling ends at age 16 in the United Kingdom. For an interesting discussion of the factors influencing the school-leaving decision, using the NCDS data, see Micklewright (1989).

Table 8.9 **Great Britain: Wage Difference Equations for Non–College Graduates**

Variable	Union	Nonunion
Tenure in current job (months)	.0011	.0017
	(2.59)	(3.93)
Training only	−.0311	−.0640
	(1.11)	(1.87)
Training + City and Guilds Operative	.0291	.0467
	(0.16)	(0.32)
Training + City and Guilds Craft	−.0009	.0864
	(0.01)	(1.17)
Training + City and Guilds Advanced	.2711	.2431
	(2.80)	(2.73)
Training + ONC/D	.0376	.0150
	(0.66)	(0.23)
Training + HNC/D	.0729	.0652
	(0.96)	(0.77)
Training + other qualifications	.0806	.1506
	(3.83)	(6.12)
Apprenticeship only[a]	.0889	.1238
	(1.38)	(2.07)
Apprenticeship + City and Guilds Operative	.2009	.3301
	(1.53)	(2.46)
Apprenticeship + City and Guilds Craft	.1352	.2534
	(3.67)	(4.94)
Apprenticeship + City and Guilds Advanced	.1930	.2583
	(5.31)	(5.73)
Apprenticeship + ONC/D	.1221	.3912
	(1.06)	(3.26)
Apprenticeship + HNC/D	.1916	.2736
	(1.50)	(1.92)
Constant	1.5293	1.3831
	(37.58)	(36.36)
$\bar{R}^2$	.6249	.5525
F	156.20	123.79
DF	3,318	3,545

Note: The dependent variable for this equation is the log real weekly earnings in 1981 minus the log real weekly earnings of the first job after leaving school. Other variables included in this equation—switches to part-time status, 4 change in plant size variables, 7 years since first job variables, number of jobs since leaving school, ever unemployed and ever out of labor force since leaving school dummies, and 94 industry and 12 occupation switches. The sample size is now larger than in the wage levels equation because we do not have to drop observations with missing ability tests.

[a]Includes apprenticeships without any other qualifications plus apprenticeships with all other qualifications except the ones identified above.

Table 8.10 **United States (NLSY) Regression Results: Wage Difference Equations for Non–College Graduates**

Variable	All Workers	Male	Female
Δ Experience	.005	.006	.004
	(4.57)	(3.27)	(2.30)
Δ Tenure on current job	.0002	.0004	.0003
	(0.42)	(0.47)	(0.42)
Δ School	.03	.02	.06
	(1.92)	(0.85)	(2.10)
Δ Company training	.12	.07	.16
	(1.94)	(0.79)	(1.93)
Δ Off-the job training	.05	.13	−.07
	(1.02)	(1.85)	(0.96)
Δ Apprenticeship	.38	.37	.29
	(3.38)	(2.81)	(1.13)
Constant	−.08	−.13	.02
	(1.35)	(0.85)	(0.26)
$\bar{R}^2$	.11	.14	.07
F	4.57	3.67	2.02
N	1,570	831	738

Note: The dependent variable for this equation is the log real wage at age 25 minus the log real wage at age 20. Regressions include the following additional variables—change in disability status, change in marital status, change in number of children, change in part-time status, change in union status, change in local unemployment rate, change in number of jobs, change in region, change in 34 industry dummies, change in SMSA, and age dummies for year turned age 18.

age 16 and at age 23. It is quite clear that the wage gains associated with an apprenticeship exist for both the union and nonunion sectors. Indeed, the earnings gains from having qualifications alongside an apprenticeship appear to be even higher in the nonunion sector than in the union sector. In contrast, there are little or no differences between the sectors in the gains associated with training courses, with or without qualifications. One possible explanation for the difference in the returns relating to apprenticeships could be that nonunion employers use the qualifications to screen for the best applicants.

In table 8.10 we report wage difference equations for the United States. The dependent variable here is the log of real weekly earnings at age 25 minus the log of real weekly earnings at age 20. Apprenticeships appear to convey substantial earnings gains for men: although the coefficient on this variable is also large for women (0,29), the estimate is not well determined. Young women seem to benefit from company training, while young men have increased earnings growth from off-the-job training.

So, the wage gains to employer-provided training seem to differ across the two countries but not by a huge amount. Apprentices in the United States seem to have a higher wage premium than their British counterparts, but when one includes the return associated with qualifications received alongside the apprenticeship in Great Britain, the gains look more similar. In both countries women appear to have lower returns to apprenticeships than men, The primary

difference, therefore, across the two countries in postschool training seems to be in the extent and duration of training rather than in the wage gains associated with training. This does imply that a larger number of young workers and firms in Britain than in the United States were benefiting from productivity-enhancing training in the 1970s and early 1980s.

8.5 Changes in the United Kingdom in the 1980s

In order to illustrate the extent to which the U.K. labor market has changed since 1981 we have examined the early labor market experiences of a group of young people over the period 1981–89. To do this we have used two large-scale nationally representative surveys—the 1981 and 1989 U.K. Labour Force Surveys[14]—to construct three artificial age cohorts (16–19, 20–23, and 24–27).[15] Our main purpose in doing this is to compare the labor market experiences of the age 16–19 cohort over the eight-year period 1981–89 with the experiences of our NCDS respondents over the preceding seven-year period, 1974–81. Table 8.11 is thus directly comparable to table 8.2, where we followed NCDS respondents between ages 16 and 23. In table 8.11 we observe the 16–19 cohort first in 1981 and then again in 1989, when they become the 24–27-year-old category. In 1981 and 1989, we are able to report on the proportion of the employed who are doing an apprenticeship. In 1989, we also report the percentage of the employed who were receiving company-provided training: unfortunately such information is not available in 1981. The remaining individuals in each age cohort are out of the labor force (percentages not reported). The overall unemployment rate in 1989 was slightly lower than it was in 1981 (7.6 percent vs. 9.4 percent). The proportion of all 16–19 year-olds who were unemployed in 1989 was approximately half the 1981 level (7.7 percent and 14.9 percent, respectively), however, over 10 percent of all 16–19-year-olds in 1989 were on a government scheme such as YT.[16] Over the period in question there was also a decline in the percentage of young people in full-time education (30.6 percent in 1981 compared with 24.4 percent in 1989). For an evaluation of the impact of YT in the 1980s in the United Kingdom see the paper by Dolton et al. (chap. 9 in this volume).

Table 8.11 shows the extent of the decline in apprenticeships over the 1980s.

14. The Labour Force Surveys (LFS) are carried out in more than 75,000 households in the United Kingdom, i.e., approximately one in every 350 private households. They were conducted every other year from 1973 to 1983, and from 1984 they have been conducted annually. The results reported here give representative estimates relating to the whole population resident in private households in the year of interest.

15. We group individuals together in this ad hoc way to ensure large cell sizes.

16. There are some discrepancies between the labor market status of the NCDS cohort reported in table 8.1 and that reported here. In particular it appears that a higher proportion of the 1981 LFS sample are unemployed: this is principally attributable to (a) sample attrition and (b) the fact that recent immigrants, who tended to have relatively high unemployment rates, are underrepresented in the NCDS cohort.

Table 8.11 **Labor Market Status of Individuals in the United Kingdom, 1981 and 1989 (%)**

	Age			
Status	16–19	20–23	24–27	All Ages
		Males—1981		
Employed	51.6	74.6	83.3	69.7
Apprenticeship	34.3	7.7	2.1	4.3
Unemployed	16.8	14.8	12.5	7.9
Full-time education	29.6	8.9	2.6	3.7
N	7,641	6,851	6,287	85,877
		Males—1989		
Employed	51.3	75.8	83.5	73.6
On-the-job training	16.5	15.8	15.2	11.3
Apprenticeship	21.3	4.6	0.5	1.8
Govt. scheme	12.4	1.7	1.2	1.6
Apprenticeship	32.3	7.8	–	24.1
Unemployed	8.5	10.0	8.4	6.4
Full-time education	24.4	7.2	2.1	3.1
N	4,892	4,679	4,841	62,275
		Females—1981		
Employed	48.3	61.3	52.9	43.3
Apprenticeship	3.6	1.1	0.2	0.6
Unemployed	13.7	9.2	6.6	4.3
Full-time education	31.8	6.6	1.1	3.2
N	7,480	6,652	6,454	93,150
		Females—1989		
Employed	53.6	66.7	63.3	47.6
On-the-job training	22.4	17.6	15.7	13.6
Apprenticeship	3.2	1.1	0.4	0.4
Govt. scheme	8.3	0.8	0.6	0.8
Apprenticeship	15.0	14.3	–	12.6
Unemployed	6.8	7.2	6.8	3.8
Full-time education	24.4	6.6	1.2	2.4
N	4,734	4,763	5,184	67,998

Source: Labor Force Surveys of 1981 and 1989 (authors' calculations).

In 1981, 34.3 percent of employed males aged 16–19 were taking an apprenticeship at the date of interview. By 1989 this had fallen to 21.3 percent of the employed males aged 16–19. For females, the decline was much smaller, but started from a significantly lower base. An additional group of individuals reported that they were doing an "apprenticeship" while on a government scheme (32.3 percent of males and 15 percent of females on such schemes). These individuals are not on employer-sponsored apprenticeships and do not have a contract of employment with the company where they have a YT placement. Consequently, it does not seem to be appropriate to include them in our count

of apprentices. Moreover, the companies that use the trainees do not appear to classify them as apprentices—hence the discrepancy, referred to above, between individual and employer-based estimates of the numbers of apprentices in the United Kingdom in the 1980s. Further, these YT schemes normally last for a maximum of only two years compared with an average duration of a completed apprenticeship in NCDS of around 43 months for men and 34 months for women (table 8.4).

It does appear that the *decline* in apprenticeships has created a gap in the training needs of companies that has been filled by an *increase* in other types of postschool training.[17] This increase is especially noticeable in the case of females. For example, in 1976 when the NCDS cohort was age 18, 9.5 percent of females had received some training with their current employer (see table 8.1). In contrast, in the 1989 LFS, we find that 22.4 percent of 16–19-year-old females had had some form of company training. Since one of the criticisms of the traditional apprenticeship schemes in the 1970s was the exclusion of women, this is an encouraging sign.

Table 8.12 illustrates the coverage of apprenticeships across three cohorts of individuals—16–19 years, 20–23 years, and 24–27 years of age. It provides information on those individuals who had completed or were doing an apprenticeship at the date of interview. In 1989 we also report the proportion of individuals on apprenticeship programs who were YT participants. The decline in apprenticeships is most marked for the cohort of males who were aged 20–23 in 1989. In 1981, 28.5 percent of men in this cohort had either completed or were doing an apprenticeship: by 1989, this number had fallen to 18.8 percent. In contrast, there was a slight increase in the proportion of women who had completed an apprenticeship—presumably pursued while on a government scheme.

Table 8.13 reports on the changes over the 1980s in the extent to which qualifications accompanied apprenticeships. The base is any individual who had completed an apprenticeship. For all workers, and for males and females separately, we report the proportion of individuals in 1981 and 1989 who received no qualifications alongside their apprenticeship (col. 1, 3, and 5). In addition we report the proportion of individuals who did receive a qualification who obtained any type of City and Guild qualification (col. 2, 4, and 6). Even when we condition on the smaller number of completed apprenticeships in 1989, nearly twice as many individuals in 1981 obtained a qualification along with their apprenticeship than was the case in 1989. This was true both for men and women. For example, in 1981, 22.5 percent of 16–19-year-olds did not

17. It should be noted that the training questions in the 1989 LFS and NCDS4 are somewhat different. Respondents to NCDS reported on whether they had *ever* had any training with their current employer, while in the 1989 LFS respondents reported whether *over the preceding four weeks* they had received any education or training connected with their job or with a job that they might be able to do in the future. Clearly, the definition used in the LFS would tend to produce lower estimates of the existence of training.

Table 8.12 **Coverage of Apprenticeships in the United Kingdom (%)**

	1981		1989	
Age	Completed	Still Doing	Completed	Still Doing
		All		
16–19	1.1	9.4	2.5	11.1 (26.9)[a]
20–23	12.9	3.8	9.8	2.3
24–27	14.7	1.3	13.9	0.4
		Male		
16–19	1.4	16.7	2.6	18.3 (27.7)[a]
20–23	22.1	6.4	15.0	3.8
24–27	26.0	2.2	23.8	0.5
		Female		
16–19	0.8	2.0	2.4	3.8 (42.5)[a]
20–23	3.5	1.0	4.8	0.9
24–27	3.7	0.4	4.7	0.3

Source: Labor Force Survey tapes, 1981 and 1989 (authors' calculations).

Note: Base = population of individuals in that category.

[a]Proportion of individuals still doing an apprenticeship who reported that they were on Youth Training.

Table 8.13 **Apprenticeships and Qualifications in the United Kingdom (%)**

	All		Males		Females	
Age	None (1)	City and Guild (2)	None (3)	City and Guild (4)	None (5)	City and Guild (6)
			1981			
16–19	22.5	28.7	21.7	32.2	23.8	22.2
20–23	18.1	44.6	18.0	47.9	19.4	23.3
24–27	25.2	47.0	23.2	50.4	38.3	24.3
			1989			
16–19	47.9	43.8	47.2	40.4	48.8	47.5
20–23	35.0	47.8	34.4	47.5	36.9	48.9
24–27	33.8	45.1	31.6	47.1	44.0	36.1

Source: Labor Force Survey tapes, 1981 and 1989 (authors' calculations).

Note: Cols. 1, 3, and 5 report individuals receiving no qualifications as a percentage of those who had completed apprenticeships. Cols. 2, 4, and 6 report individuals receiving City and Guild qualification as a percentage of those who received any qualification.

obtain any other qualification apart from the apprenticeship itself, compared with 47.9 percent in 1989. Of those individuals who did obtain a qualification, a higher proportion received City and Guild certification in 1989 than was the case in 1981. The change in the mixture of qualifications is most pronounced for females.

8.6 Conclusions

This paper has attempted to show the extent of and returns to the training structures in place for youths in Great Britain in the 1970s relative to the training opportunities available to youths in the United States. We examined youth training in Britain in the 1970s and early 1980s in order to observe how a more formal apprenticeship and employer-led training programs functioned in a country with institutional structures similar to those operating in the United States. We hope this analysis will be useful in current discussions in the United States directed at revitalizing apprenticeship training.

Our principal findings are that non-college graduates in Britain received much more postschool training than did similar youths in the United States. This training was also linked with obtaining higher qualifications. The primary source of training in Britain in the 1970s, especially for males, was apprenticeships. This apprenticeship training may have been more limited than that provided to young apprentices in Germany, but it still offered substantial benefits in terms of the associated higher wages to those who undertook such a program. This return is even higher when one includes the returns associated with formal qualifications obtained during or at the completion of an apprenticeship. We could find no evidence of a positive rate of return to an apprenticeship for young women in Great Britain.

While it appears that there was much more formal postschool training provided to youths in Britain than in the United States, when the sample is divided by gender there are some interesting differences. In particular, women in the United States seem to receive more training than their counterparts in Britain, and their wages seem to increase as much if not more with this training.

There seems to be both good news and bad news associated with the YT programs of the 1980s in Britain. The good news is that female school-leavers seem to be receiving much more training than was the case under the traditional training and apprenticeship system in the 1970s. The bad news is that fewer young people are obtaining qualifications from their training programs. The YTS was recently renamed "Youth Training" so that it would be viewed as part of the permanent training and education structure in Britain (rather than as a temporary unemployment scheme). If YT is to deliver high-quality training of a type that will service adequately the skill needs of firms, then certifying the skills acquired in YT may be useful for both firms and individuals. Nationally recognized qualifications appear to offer significant positive returns to those that possess them, particularly if they accompany an apprenticeship program. This is a lesson for those participating in the current policy discussion on expanding apprenticeships in the United States.

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