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Large Employers and Apprenticeship Training in Britain**

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discussion paper

Abstract

We consider two aspects of the link between apprenticeship and large employers in Britain: the contributions of apprenticeship to employers' supplies of intermediate skills and of employers to the Advanced Apprenticeship programme. Evidence is taken from interviews with managers in twenty-nine organisations. We find that apprenticeship does function outside Advanced Apprenticeship, primarily because of trainee ineligibility. Employers' use of apprenticeship depends on its cost-effectiveness relative to recruitment and upgrade training within HRM practice. Some employers value apprenticeship as a source of long-term employment and career progression. The intensity of training depends on ownership attributes, with family firms operating larger programmes. Employers participate in Advanced Apprenticeship, in terms of contractual role and programme delivery, in diverse ways. The implications of their choices for training quality are not unambiguous.

Zusammenfassung

In dem Papier werden zwei Aspekte zum Zusammenhang von betrieblichen Ausbildungen und Großunternehmen in Großbritannien analysiert: Einmal der Beitrag betrieblicher Erstausbildungen zur Bereitstellung von Facharbeiter-Qualifikationen und zum anderen der Beitrag der Arbeitgeber für das Programm „Advanced Apprenticeship". Die gewonnenen Erkenntnisse stützen sich auf Interviews mit Managern in 29 Organisationen. Es wurde deutlich, dass betriebliche Ausbildungen außerhalb des „Advanced Apprenticeship"-Programms funktionieren, vor allem wegen Nichtzulassung zu dem Advanced Apprenticeship Programm auf Grund fehlender Erfüllung der Zulassungskriterien. Der Umfang, in dem Arbeitgeber die Möglichkeiten betrieblicher Erstausbildungen nutzen, hängt ab von dem Vergleich der Ausbildungskosten zu den Kosten von Neueinstellungen und von betrieblichen Weiterbildungen im Rahmen betrieblicher Personalentwicklungsmaßnahmen. Einige Arbeitgeber schätzen betriebliche Erstausbildungen vor allem insofern, als sie förderlich sind für eine lange Betriebszugehörigkeit und eine positive berufliche Entwicklung. Es gibt einen Zusammenhang von Ausbildungsqualität und Eigentumsstruktur: familiengeführte Unternehmen bieten umfangreichere Ausbildungsprogramme an. Unternehmen nehmen in unterschiedlicher Weise an dem „Advanced Apprenticeship"-Programm teil, bezogen auf ihre vertraglich vereinbarte Rolle und der Art ihres Angebots. Die Auswirkungen und Folgen ihrer Entscheidungen hinsichtlich der Qualität der von ihnen angebotenen Ausbildung sind nicht eindeutig.

Content

1 Introduction[1]

Policy interest in expanding apprenticeship has become widespread in advanced economies. The trend responds to evidence that it increases youth employment and improves economic performance (Prais, 1995; Oulton, 1996; Ryan, 2001).

This article addresses the links between large employers and apprenticeship training in contemporary Britain. Two aspects are of interest: the importance of apprenticeship as a source of intermediate skills for the large employer; and the contribution of the large employer to the Advanced Apprenticeship programme, the current vehicle for government support of work-based training for intermediate skills.

On the former issue, apprenticeship might be expected to appeal only weakly to large employers nowadays. Large employers are particularly prone to operate explicit human resource management (HRM) policies, and such policies in turn emphasise – for core employees at least – the development and retention of employer-specific skills in employer-based internal labour markets (Guest et al., 2003). In such a context, there may be little place for apprenticeship, with its traditional orientation to transferable skills and occupational labour markets, and its requirement for a large front-end investment by the employer in each skilled employee. Upgrade training potentially fills the bill instead (Marsden and Ryan, 1991; Gospel, 1994; Ryan, 1994). Moreover, as career employment for some employees is often accompanied by temporary and out-sourced employment for others (Walsh, 1993), employers might be expected to prefer recruitment to apprenticeship as a source of skills in the relevant employee categories.

At the same time, in large firms apprenticeship has always tended to be geared to HRM requirements, even when it is externally regulated as thoroughly as in Germany (Franz and Soskice, 1995; Thelen, 2004: 273). As Britain lacks the kind of public regulation of apprenticeship that characterises the other European countries that have apprenticeship systems, the British employer may enjoy exceptional scope to tailor apprenticeship to its skill requirements and HRM practices (Gospel and Fuller, 1998; Ryan, 2000).

The official view of the prospects for employer involvement in apprenticeship is certainly an optimistic one. The government seeks greater involvement by large employers, whose predecessors played a prominent role in an earlier era. Its approach centres on public subsidies, channelled through the Advanced Apprenticeship (AA) programme by the Learning and Skills Council (LSC) (DfES, 2004a, 2004b)

The policy emphasis on large employers responds to evidence that their involvement in apprenticeship had become marginal. Lists of principal contractors in publicly funded apprenticeship in the late 1990s were dominated by specialist training organisations. Few ‘household name’ employers featured. When allowance was made for indirect participation, e.g., through group training associations, more employers were found to be involved, but the

number of large ones remained limited (MAAC, 2001; Ryan and Unwin, 2001; Gospel and Foreman, 2006).

The case for increased involvement by large employers in the official Apprenticeship programme reflects their potential contribution to training quality, which various indicators have suggested is deficient. Participants in the Apprenticeship programme have shown high attrition and low completion rates (DfES, 2004c: Table 8). The Adult Learning Inspectorate has classed many – in one year, most – providers of publicly funded work-based training as inadequate (ALI, 2004). To the extent that these deficiencies are less when the training is provided by an employer rather than a specialist provider, increased involvement by large employers potentially improves quality.[2] The prospect is strengthened by the extensive training functions that most large employers operate, and the additional resources that they – unlike specialist training providers, whose efforts are typically constrained by the LSC grant – can potentially invest in an apprentice's skills (MAAC, 2001).

Two organisations have been set up to court the large employer. The first is the LSC's National Employer Service,[3] established in 2001 to increase participation by large employers, using targeted marketing and country-wide contracts. It announced that it intended to recruit ten 'blue chip' national employers during 2003/04 (LSC, 2003: sec 5.4). It was joined in 2003 by the Apprenticeships Task Force, whose board comprised mostly senior managers in large organisations. It was charged with generating 'greater employer engagement in Apprenticeships'. Its principal activity has been networking among large employers: the promotion of apprenticeship training to large organisations that do not provide it by those that do (ATF, 2005: Annex A). The results of these efforts are unclear. Both bodies claim some large catches, but little detail is available on how many and who they are, and how many additional places they contribute (ATF, 2005: §29; Unwin and Fuller, 2004).

The focus of this study is intermediate skills – in traditional industrial parlance, 'craft' and 'technician' skills, and in contemporary terminology, skills at Levels 3-5 in the National Qualifications Framework (QCA, 2004). We distinguish 'Apprenticeship' (upper case), from 'apprenticeship' (lower case). The former denotes the government programme that covers all work-based learning for young people that is supported financially by the Department for Education and Skills (DfES).[4] The latter we define generically, as training that aims at Level 3-5 skills and combines work-based learning, off-the-job training and technical education, whether it is publicly recognised and funded or not. This definition corresponds with both British practice under the Industry Training Boards of the 1970s and contemporary practice in continental Europe, Ireland, and – within Britain – Scotland (Ryan, 2000).[5]

The implication is that, when considering the Apprenticeship programme, we concentrate on the Advanced Apprenticeship (AA) component, and set aside, insofar as possible, the less skilled, Level 2 component, previously termed Foundation Apprenticeship.[6] The latter has expanded in recent years, and has even come to dominate training for the basic trades in construction. By contrast, Advanced Apprenticeship has contracted (Figure 1).

Moreover, even for Level 3+ training programmes, the categories 'Advanced Apprenticeship' and 'apprenticeship' must be distinguished, even if they are expected to overlap considerably. On the one hand, the latter includes any training outside AA that meets

our functional criterion, whether or not it is labelled apprenticeship by the employer providing it. Indeed, the importance of such programmes is one of the issues considered here. On the other hand, not all Advanced Apprenticeship necessarily constitutes apprenticeship on our definition. Such is the case in principle for programmes with little educational content.[7]

This paper considers four issues. The first is the extent to which and the reasons why apprenticeship functions outside the Advanced Apprenticeship programme. Some evidence has suggested that there may be a significant amount of non-AA apprenticeship, but the possibility has received little attention. We find some evidence of it. What there is results less from decisions by employers to abstain from AA than from the ineligibility of particular training programmes and participants for public funding.[8]

The second issue is what induces large employers to provide apprenticeship. The issue is considered in relation to two potential alternative sources of intermediate skills: recruitment and upgrade training – i.e., hiring workers who already possess the relevant skill, or giving additional training to less skilled employees. We find that the appeal of apprenticeship to the employer varies with two factors. The first is its cost and efficiacy, as part of its broader compatibility with the organisation's HRM strategy. The second is the content of AA itself. Participation in the programme depends, in our sample at least, on the employer's evaluation of its training content, and not on other attributes, including public funding, administrative burdens and inspection requirements.

The third issue is the scale of employer participation. The issue is not only whether the employer participates or not – the question on which the government largely concentrates – but also, given participation, how many apprentices are taken on and what influences this choice. We find that the intensity of training varies greatly from employer to employer, in association with ownership attributes and market context in particular.

The final issue is how employers participate. Increased participation by employers in AA has been advocated in the expectation that better training will be provided when it is an employer that takes responsibility for the organisation and provision of an Apprenticeship programme, rather than an external specialist provider (MMAC, 2001; Ryan and Unwin, 2001). We find that large employers differ greatly in the extent to which they organise and provide 'their' apprenticeship programmes. Those who contract out the relevant functions typically retain key responsibilities, notably the selection of apprentices. No simple relationship is apparent between the manner of employer participation and training quality, insofar as the latter can be assessed.

Section two outlines the scope and methods of the research. The four issues outlined above are discussed in succession in sections three to six, followed by the conclusions in section seven.

2 Scope and method

In order to study the issues outlined above we concentrate on four of the 'areas of learning' for which training frameworks have been officially recognised for the Apprenticeship programme: engineering, construction, retailing, and information and communications technology (ICT).[9] Apprenticeship is long-established in the first two sectors, but has only recently been introduced into the latter two.[10] Taken together, the four accounted recently for around half of all activity in the Advanced Apprenticeship programme, with engineering contributing nearly one quarter and ICT contributing only marginally (Appendix: Table A1).[11]

The public funding available to the employer who acts as prime contractor for an entire Advanced Apprenticeship varies considerably by sector and age of trainee, from a minimum of £4,300, for a 19-24 year entrant to an IT User programme, to a maximum of £14,700 for a 16-18 year old entrant to one in Engineering or IT Services (Appendix: Table A2).

Geographically, our evidence refers primarily to England, with secondary contributions from Scotland and Wales. The decentralisation of training policy within the UK has meant the differentiation of training programmes within the country, and those differences encourage us to concentrate on England, as the largest national unit.

In the absence of a dataset covering the training and skills practices of large employers,[12] our research strategy centres on case-studies and face-to-face interviews with senior managers. We targeted large organisations that have significant employment in intermediate skills in occupations associated with each of the four areas of learning. In each area, we approached at least six employers, whom we selected from a mix of prior knowledge, press reports, external inspection reports, and the suggestions of informed third parties. Our goal was a set of case studies that covered a wide range of skills and training practices and suggested potential determinants of those practices. Thus our retailing sample includes employers in the convenience store, department store and supermarket sub-sectors, whose stances towards apprenticeship differ in ways potentially associated with technology and market conditions. Other dimensions on which we sought to match case studies included: ownership (separate divisions of a single company; quoted company vs. other organisation; public vs. private; British vs. foreign owned); region and labour market; and the use of sub-contracting and outsourcing in training provision.

Information was collected using semi-structured interviews with training-related managers, using a detailed interview schedule that was piloted in the first three interviews.[13] The cases are allocated to training frameworks according to the largest category of intermediate skills in the organisation's employment. In each case we sought to define a set of occupations involving intermediate skills for which apprenticeship does or could provide skilled employees, and to collect data on employment, training and recruitment in those occupations.

The managers of thirty organisations were interviewed, resulting, after combining two not highly dissimilar divisions of BT, in twenty-nine case studies. Two are local authorities, four are co-operatives (retail or employee), and the remainder are companies or divisions

within companies.[14] The four organisations that insisted on confidentiality – two Japanese-owned engineering-related companies, an IT company and a local authority – are given pseudonyms. The composition of the case studies differs from intention primarily in information technology, where we were did not secure access to the one large employer that is known to participate in Advanced Apprenticeship.

Key attributes of the case studies are listed in Table 1. Total employment is at least 1,000 in all cases except one. Employment in the relevant intermediate occupations, usually only a small share of the organisational total, amounts to fewer than 100 in five cases. The annual intake of apprentices, among those that provide apprenticeship, is even smaller: typically fewer than fifty, and in some cases less than twenty.

This research involves distinct limitations. There is uncertainty about the representativeness of the case studies, and potential biases associated with the dominance of managerial perspectives. We note also that the evidence does not permit us to assess in any detail the quality of individual training programmes, nor to assess the extent to which employers' demand for skill reflects their need for skill (Keep and Mayhew, 1998; Skills Task Force, 2000).

3 Non-AA apprenticeship

Some evidence has suggested that a significant amount of apprenticeship exists outside government-funded training programmes. In 1994, when Modern Apprenticeship (MA) was only a small pilot programme, more than 200,000 people identified themselves as 'apprentices' in household surveys (Leman and Williams, 1995). Four years later, when the programme had grown substantially, 16-24 year olds who classed themselves as 'apprentices' outnumbered registered participants in MA by a factor of three to two in Labour Force Survey data (Ryan and Unwin 2001, Table 1). In 2005, 21 per cent of personnel/HR managers reported that their organisation provides 'apprenticeship-type training outside of government initiatives' (CIPD, 2005).

We selected potential case studies partly with a view to identifying apprenticeship outside Advanced Apprenticeship. Two reasons for its existence are distinguished. First, the employer may choose not to bring an eligible programme under AA. Second, certain types of programme and participant are not eligible for support by AA, whether or not the employer wants it.

Concerning the former, we found only one training programme that is potentially eligible for funding under AA but that the employer prefers to keep separate: a nation-wide 'traineeship' for field service engineers operated by Siemens Traffic Controls. Lasting three years and containing annual residential courses at the company's training centre, day release to local colleges for technical education, and a broad training curriculum, the programme meets our criterion for apprenticeship. It is not provided under AA, partly because of the absence of a suitable training framework, and partly because of low completion rates on a

prior MA programme for manufacturing test technicians that had been organised by specialist training companies.[15]

Otherwise, although many employers criticise attributes of the Apprenticeships programme, and some do not participate as a result, no non-participant in our sample operates an apprenticeship programme with a non-AA design, whether developed by itself or inherited from prior sectoral practice.

More non-AA apprenticeship arises for the second reason: the unavailability of LSC funding, typically because particular programmes or trainees are not eligible for public support. In terms of content, AA frameworks are not available for some specialist skills, including, among the case studies, those involved in street work in construction, in which McNicholas specialises. This consideration appears to be influential among smaller employers in specialties such as roofing, scaffolding and boat building – though, as some of those training programmes appear to contain little or no technical education, they might not constitute apprenticeship.

In terms of clientele, we found several cases of apprenticeship in which some or all trainees do not come under AA. The principal categories are graduates, adults and technicians. The ineligibility of graduate apprenticeships for LSC funding reflects the principle that no individual should enjoy 'two bites of the cherry', in terms of public funding for post-secondary learning. Thus STEAMCO, a company that builds and installs power plant and equipment, trains its craft apprentices under AA, but its graduate trainees, who receive what is in effect an apprenticeship that takes some of them into technician and assistant professional work, are not covered by AA. Overall, however, graduate apprentices appear rare, accounting for less than one per cent of a total intake of around 770 (Level 3+) apprentices in the 15 cases for which data are available.

In the case of adults, the difficulty is the limited availability of public funding, and not, since the extension in 2004 of eligibility under AA to the over-24s, any issue of principle. Access to LSC funding for Apprentices aged 25 or more has been confined to date to pilot programmes in a few localities. Consequently, although adult apprentices at the four case studies that offer such training – Rolls-Royce (Derby), Marshall Aerospace, Leicester Council DSO and BT Global – take programmes similar or identical to those taken by their youth counterparts, they are not covered by AA. The same applies to the ten per cent or less of the apprentice stock that entered at age 25 or older in three construction companies (Laing O'Rourke, Morrison and Mowlem SW). Overall, adults account for seven per cent of the total intake of apprentices in our sample.

A similar situation applies to technician apprenticeships. They too are formally eligible for public funding, but the Higher Education Funding Council (HEFCE), to which the responsibility has fallen since 2001, does not systematically support them. The development of work-based Foundation Degrees may change that, but what remains of technician apprenticeship currently not only stands outside the Apprenticeship programme but also receives little public support in its own right. The problem is particularly marked in engineering, in which apprenticeships for craft and technician occupations traditionally overlapped during the first year or two of training and the balance of training activity had

shifted steadily over time from craft to technician level. The engineering employers in our sample typically continue to provide both types of apprenticeship, but they receive little or no public funding for the technician components. We cannot report the share of apprentices affected.[16] A substantial minority of apprentices is likely to be involved in engineering, but only a small one across all four sectors.

The final source of non-AA apprenticeship is the LSC budget constraint. None of our interviewees said that they would have liked to recruit more Advanced Apprentices in eligible categories than the LSC was prepared to support. Some did however view that as possible, and some reported its occurrence in other contexts. Similarly, some apprentice programmes outside our sample may have suffered from the LSC's refusal to support particular providers.[17]

In sum, we find that apprenticeship functions outside the AA programme to only a limited extent, and that, to the extent that it does, it is mostly involuntary, associated with the ineligibility of particular participants and skill levels for funding by the LSC. However, this evidence does not settle the issue. Non-AA apprenticeships may be provided by large employers who do not feature in our sample, particularly any who prefer not to have their choice publicised, as well by some small and medium sized ones.

4 Employers' use of apprenticeship

This section considers two aspects of the participation of large employers in apprenticeship: first, the decision to provide apprenticeship, in relation to the alternative sources of intermediate skill; second, the decision to participate in Advanced Apprenticeship, in relation to the employer's perception of the programme's attributes. The paucity of apprenticeship outside AA, as suggested by the previous section, means that the two decisions overlap considerably.

Sources of intermediate skill: issues and analysis

The employer is viewed here as deciding between apprenticeship and two alternatives – recruitment and upgrade training – as sources of intermediate skill.[18] Two approaches may be distinguished: economics and HRM. An economic analysis centres upon efficacy and cost: the choice between the alternatives depends on prospective contribution to skill supplies and cost. The skills produced by apprenticeship can be taken to be transferable, in the sense of facing an occupational labour market that is imperfectly competitive. We assume that training and recruitment are both costly, and that the marginal cost of recruitment relative to that of training rises with recruitment's share of skill supply. The employer then minimises the cost of acquiring skill by combining training and recruitment (Stevens, 1996).

An HRM-oriented analysis focuses instead on the employer's wider employment practices, which are chosen so as to maximise the motivation, loyalty and productivity of employees. As the 'fit' between training, job content and other HR practices becomes tighter, so the benefits of training can be expected to accrue more to the employer who provides it than to its competitors, and the use made of training to increase (MacDuffie, 1995).

In both approaches, the employer might be expected prefer upgrade training to apprenticeship. The content of upgrade training can be made specific to the employer's requirements without facing the external constraints on training content that accompany apprenticeship. Upgrade training should therefore mean lower turnover among skilled employees than does apprenticeship (Wachter and Wright, 1990). Upgrade training can also be delivered sequentially, in discrete doses linked to induction and promotion, in contrast to the large, up-front concentration that is required by apprenticeship. As upgrade training is typically given to established adult employees rather than new young ones, the vulnerability of the resulting skill supplies to labour turnover may be correspondingly less than under apprenticeship.

Finally, training can emphasise the values and priorities of the organisation more when it is given informally to existing employees, without external certification, as should also be easier with upgrade training than with apprenticeship. These attributes should mean a smaller, less risky and more effective investment in intermediate skills in the case of upgrade training than of apprenticeship (Marsden and Ryan, 1991; Ryan 1994).

Thus far the analysis has assumed that upgrade training and apprenticeship are close substitutes as sources of intermediate skill. That is not always the case. Upgrade training is often aimed at lower level skills, such as those of production and office employees, rather than the craft, technician and assistant professional skills towards which apprenticeship has traditionally been geared. Indeed, even when upgrade training produces intermediate level skills, it may be a complement, rather than an alternative, to apprenticeship. Changes in technologies and markets mean that employees who possess an intermediate skill must upgrade it over their working lives if they are to remain employable. Employers who seek to motivate and retain their employees by providing continuing training may find the same training more effective when it builds upon prior vocational education, such as that provided by apprenticeship at its best.

Sources of intermediate skill: evidence and causes

Apprenticeship has produced the skills of roughly one quarter of the employees working with intermediate skills in case study organisations (Table 2). Its contribution is much less than that of upgrade training (more than one half), but larger than that of recruitment (one sixth). Differences across sectors are pronounced. Defining a dominant source as one that contributes at least two-thirds of employment in intermediate skills, a dominant source is present in each sector: apprenticeship, in engineering; upgrade training, in retailing and telecommunications; and recruitment, in construction and IT. The pattern across sectors aligns with other evidence (Steedman, Wagner and Foreman, 2003; Spielhofer and Sims, 2004).

Sectoral differentiation reflects to some extent specialisation by the individual employer in a single source of skill. Six employers, spread across all sectors except retailing, have only one significant source (where significance is defined as contributing at least ten per cent of current employment). The three extreme cases start with Perkins Engines, a producer of industrial diesel engines, nearly 90 per cent of whose skilled employees have served an apprenticeship at the company. The high share reflects a long-standing apprenticeship programme, a low quit rate among skilled employees, and a time path of skilled employment characterised by trend decline and low cyclicality. The heaviest user of upgrade training is Siemens Standard Drives, a producer of electronic speed control units for electric motors, 95 per cent of whose technicians have been obtained through upgrade training. Recruitment dominates at PARTSCO, a Japanese-owned producer of automobile components, located in a declining industrial area, which has been able to recruit externally as many skilled manual employees as it wants. The company's reliance on recruitment for intermediate skills would be total had it not opted to upgrade a single production worker in order to avoid a compulsory redundancy.

Specialisation in a single skill source applies however to only a minority of cases. Most organisations make significant use of at least two sources. The permutations are: recruitment plus apprenticeship (six cases, in all sectors except ICT); recruitment plus upgrading (six cases, primarily in retailing or ICT); apprenticeship and upgrading (three cases, in all sectors except retailing; and all three sources (four cases, primarily in retailing). Apprenticeship and upgrading function as alternative sources of intermediate skills most visibly in the cases of the seven employers who make significant use of both, five of which are in retailing or ICT.

Returning to the share of apprenticeship, in addition to Perkins Engines, only five other organisations – three in engineering (J.C.Bamford, Marshall Aerospace and Rolls-Royce) and one each in construction and retailing (NG Bailey and Bells Stores, respectively) – themselves trained as apprentices at least one half of their employees with intermediate skills. In ten other cases apprenticeship has provided a minority of skilled employees; in the other eight, none at all.

The factors that potentially determine the use of apprenticeship start with the cost of providing a skilled employee. Not surprisingly, apprenticeship plays less of a role when the alternatives cost less. Thus PARTSCO and Logica CMG both rely almost entirely on recruitment because of a plentiful supply of skilled labour in the external market – a factor that influenced both companies' location decisions in the first place.

Similarly, Siemens Standard Drives has replaced apprenticeship with upgrading as the source of technician skills primarily because upgrade training costs less per person trained. Upgrade trainees are adults, and as such are paid more than apprentices, but during their training they do specialised production work and receive only one hour a week of paid study time, whereas their apprentice predecessors rotated through departments and received day release to a local college – practices that reduced their output during training.

The cost advantages of apprenticeship are decisive when the external supply of skilled labour is limited and skill requirements are high – conditions that make recruitment and upgrading, respectively, poor substitutes for it. These conditions apply to both cases in

aerospace engineering – Rolls-Royce (Derby) and Marshall Aerospace. The prominence of apprenticeship in convenience store retailing reflects the high marginal cost of recruitment in a sub-sector characterised by low wages and dispersed employment.

The alternative sources of skill differ also in terms of the quality of the skilled employees that they provide. Although recruitment is sometimes praised, particularly in retailing, for injecting fresh ideas and attitudes into the organisation, several employers experience adverse selection, in relation to skill, attitude and quit propensity, and limit its use accordingly. Upgrade training might be expected to outrank apprenticeship in this respect, as on-the-job screening of adults should both cost less and be more informative than the pre-apprenticeship selection of young people. Such factors have encouraged Siemens Standard Drives to replace, and J.C.Bamford to supplement, apprenticeship with upgrade training.

The cost of providing skills depends also on attrition among skilled employees, where again the alternatives typically differ. Skilled employees obtained through recruitment are widely seen as particularly prone to quit. In industries with unstable labour requirements at specific locations, as notably in construction and IT, that prospect constitutes no great deterrent. Elsewhere, however, it discourages use of recruitment. Upgrade training is expected again to be favoured, insofar as its recipients are established employees, with lower quit propensities than young recruits to apprenticeship. Some employers, including again Siemens Standard Drives, do indeed favour upgrading for that reason.

By contrast, twelve employers, spread across all four sectors, see apprenticeship as a source of lower labour turnover than either alternative. They cite one or both of two mechanisms. The first is more effective selection and socialisation into the organisation's 'culture' when training is conducted in early working life rather than in adulthood. The frequency with which this perspective crops up in the case studies aligns with other evidence of an inverse relationship between training and labour turnover (Green, 2000) – though that evidence refers more to adult training than to apprenticeship.

The second mechanism is the potential of apprenticeship as a vehicle for career advancement and educational progression, through fostering employee motivation, skills and loyalty. Asked whether their apprenticeship programmes offer a 'realistic option' of progressing to higher education, all seven respondents in engineering and telecommunications answer 'yes'. Opinion is evenly divided among the ten who responded in construction and retailing. Those who answer affirmatively typically cite evidence in support. They include Rolls-Royce (Derby), around 40 per cent of whose young apprentices now proceed to a higher qualification (Higher National Certificate, Foundation Degree or first degree) by age 30. Similarly, in telecommunications BT supports one in five of its apprentices for an additional year of full-time study after they complete the programme, and in construction NG Bailey offers selected apprentices a HNC programme in Building Services Engineering.

These attributes underline the extent to which some large companies have integrated apprenticeship into their HR practices (Gospel and Fuller, 1998). The potentially sharp distinction between apprenticeship and upgrade training – in terms of training cost, employee screening and socialisation, career progression, and labour turnover – is in some cases weak, in others reversed. Apprenticeship is indeed typically more expensive, more geared to

external skill standards and less widespread than is upgrade training. The differences between the two have however shrunk, and in some cases, particularly in retailing, may even have been reversed. Thus the retailers who participate in AA see their apprenticeships as showing young people that they are valued by the company and can expect to progress along a defined career path rather than remaining in a low skilled job (Skillsmart, 2004). The appeal of apprenticeship to large employers has grown, as part of the decline in its traditional orientation to occupational markets and labour mobility, and the increase in its attachment to career employment in internal labour markets.

Participation in Advanced Apprenticeship

We consider next the decision to take part in AA, in relation first to the programme's attributes, as perceived and evaluated by the interviewees. Eighteen of the twenty-nine employers participate in AA. Not surprisingly, participation is positively associated with the employer's verdict on the programme's success. Of the twenty-one interviewees who state whether or not they see AA as a success, the fifteen who participate in the programme answer 'yes'; five of the six who do not participate answer 'no'.

The results of asking interviewees how particular attributes of AA influence the decision to participate are less obvious. The aspects reported by the greatest number of employers as encouraging them to participate in AA are: helping young people; acquiring public funding; and an improved public image for the organisation. The only ones that most employers present as reasons not to participate are administrative requirements and frequent changes in programme requirements (Table 3, column 2). The acid test is however actions, not words. Participation itself proves not to be significantly related to any of the attributes that interviewees most commonly rate as favourable or unfavourable (Table 3, column 3). The only attributes with which it is significantly associated are the vocational qualifications stipulated by the relevant AA framework, viz., the NVQ3 for work-based skills and the Technical Certificate for underpinning technical knowledge. Employer opinion on these two attributes, while moderately favourable on balance, is also divided – NVQs are judged less favourably in the 'old' sectors, viz., engineering, construction and telecommunications, than in the 'new' one of retailing, but the opposite applies to the Technical Certificates. Employers who saw either qualification as a reason for participating in AA were statistically more likely to participate than those who saw it as a reason for staying out.

None of the other attributes that feature in controversies over Apprenticeship, notably remedial education (Key Skills) and administrative requirements (which most characterise as 'bureaucracy'), are significantly associated with participation. For some attributes, notably administrative requirements, the absence of association reflects a low dispersion of employer opinion. Even then, the key point is that several of the employers who criticise those attributes participate in the programme.

5 Employer use of apprenticeship: scale

The average number of apprentices in training in the fifteen case studies that offer apprenticeship and provided comparable data is 93.[19] Several of those employers have less than 50 apprentices. Only four have at least 100 (including non-AA participants): BT, Marshall Aerospace, NG Bailey, and Rolls-Royce (Derby).

The paucity of apprentices in large organisations nowadays contrasts strikingly to the hundreds, and in some cases thousands, of apprentices to be found in large firms two to three generations ago. For example, in the late 1930s the Metropolitan-Vickers factory in Manchester and the John Brown & Co. shipyard on the Clyde both contained two thousand-plus apprentices. Even in the late 1950s, five large engineering firms had more than a thousand apprentices apiece (Liepmann, 1960: 59; Ryan, 2004: 13).

Comparisons of apprenticeship activity across employers and time in terms of apprentice numbers are potentially distorted by differences in skilled employment. A simple measure of training intensity is the ratio of apprentices to skilled employees within the relevant occupation. We use this indicator, traditionally known as the apprentice-journeyman ratio, to compare training intensity across the employers who provide apprenticeships.

The intensity index averages 12 per cent across the fifteen employers (Table 4). The weighted average is only four per cent, as one large engineering employer has a low ratio. Intensity varies greatly across employers, ranging from less than three per cent in two large firms in engineering and telecommunications (Rolls Royce, Derby, and BT) to at least 25 per cent in four employers, one each in engineering, construction and retailing (J.C.Bamford, NG Bailey and Ipswich and Norwich Co-op, respectively).

The intensity of apprentice training appears to be associated with ownership attributes. The index averages 3 per cent for the eight employers that are (or are subsidiaries of) listed public companies, and 9 per cent for the seven with other types of ownership, including unlisted companies, co-operatives and local authorities. Within the latter category, family ownership stands out. The association between training intensity and organisational attributes, taking the sample as a whole, is statistically significant for family-ownership.[20] The evidence is consistent with the expected negative effect of stock market pressure on investment in training in general, and on apprenticeship in particular (Hall and Soskice, 2001; Black, Gospel and Pendleton, 2005). The difference does not appear to reflect sector effects. In engineering, intensity averages three and 16 per cent respectively for the two categories, each of which contains two firms.

Other employer attributes can be associated with variations in apprenticeship activity in the case studies. One is the nature of the product market. The two engineering employers that do not provide apprenticeship, PARTSCO and Siemens Standard Drives, both produce intermediate goods for the supply chains of large producers of final products – a situation that involves notoriously intense pressures for cost reduction. By contrast, the four who provide apprenticeships produce either higher value intermediate products (Perkins Engines and Rolls

Royce, Derby) or final products (J.C. Bamford and Marshall Aerospace) and may face correspondingly less pressure to reduce training costs.

Another potentially informative difference occurs within retailing: that between the five operators of small multiple outlets, primarily convenience stores (Bells Stores, the three Co-operatives and Pilot Clothing), and the two operators of department stores (John Lewis and Selfridges). All but one of the former group provides apprenticeship, but neither of the latter does. That difference between the two sub-sectors may reflect differences in customer requirements and skill needs. Convenience store operators find the retailing NVQ3 an attractive vehicle for training as potential store managers teenagers with low educational attainments. The department store operators differ in all respects. They prefer the upgrade training of more educated young adults, geared to in-house qualifications rather than NVQs, as a source of the skills of department managers. The difference in the two sub-sectors' market positions, in terms of customer requirements in the product market and supply in the labour market, may explain the difference in their training practices.

A further potential influence on training policy is employee representation. Apprenticeship acted traditionally as a locus of the regulatory efforts of craft unions. We found little evidence of union influence nowadays. Several of these employers recognise trade unions and report union support for their apprenticeship programmes, but almost all depict unions as having little or no influence on their skills-related practices. Only two provide any evidence of union influence. Rolls Royce (Derby), which offers adult apprenticeships, was pressed successfully by union representatives to make the content of the adult programme identical to that of youth apprenticeships. The apprenticeships operated by Leicester City Council's DSO building operation cater to adults and develop multi-trade skills in part because of trade union encouragement.

A final potential influence on training practices also finds little support in this evidence: national ownership. We sought to identify in particular cases of ownership by large Japanese and German companies, which might be conducive to the use of upgrade training and non-AA apprenticeship respectively. The results mostly diverge from expectation. Both of the Japanese-owned companies use recruitment as their principal source of intermediate skill. Of the two Siemens subsidiaries, one relies on upgrade training, as part of its wider adoption of Japanese production methods. The other does indeed provide the sole instance of an entire apprenticeship programme outside AA (section 3 above), but the links between the company's programme and German apprenticeship, as operated for example by its sister organisation in Germany, are at most indirect and weak. These foreign-owned cases are therefore consistent with the dominance of 'home' over 'host' country influences on the HRM practices of the national components of multinational companies, as a result of the extensive decentralisation of decisions and the pragmatism of practice in such organisations (Ferner, 1997; Ferner and Varul, 2000; Almond et al., 2004).

6 The organisation of apprenticeship

The final aspect of employer involvement is the way in which apprenticeship programmes are organised. The large employer traditionally insisted on retaining responsibility for its own apprenticeships. It provided all of the content except technical education – which, where present, was typically provided by a further education college and assessed by a specialist awarding body such City and Guilds (Liepmann, 1960).

The move to market-based contracting for public training programmes during the past two decades has seen a proliferation of both specialist training providers and sub-contracting relationships. The employer can nowadays avoid taking responsibility for organising an AA programme by acting as prime contractor, i.e., holding the overall contract with the LSC. It can instead act only as a subcontracting provider of on-the-job training and work experience. Alternatively, it can retain overall responsibility but sub-contract much or all of the training and assessment to specialist providers, for-profit or non-profit (MAAC, 2001).

The Modern Apprenticeship Advisory Committee viewed the displacement of the employer by the specialist provider as a leading source of low quality in AA's predecessor programme. The postulated mechanism was the loss of the additional inputs of expertise and finance that an employer can provide, along with the higher administrative costs and control slippage associated with sub-contracting chains. The Committee wanted to see employers take more responsibility for the training of Modern Apprentices, by acting as both holder of the overall contract and provider of most of the training. It suggested that the status of the specialist provider be downgraded to that of 'employer support agent' (MAAC, 2001).

This agenda leads to two questions. First, to what extent do large employers organize and deliver 'their' AA programmes themselves? Second, does it matter whether they do that or not?

The practices of large employers vary considerably in our sample. Of the eighteen that provide apprenticeships, half assume the overall responsibility (i.e., hold the principal contract). The other nine assign that function to another body, including specialist subsidiaries, Training Boards, and independent training providers (Table 5). Sectoral differences are marked. In engineering and telecommunications, five out of six employers act as prime sponsors; in construction, only one out of seven (though Carillion and Laing O'Rourke give the task to a subsidiary). Interestingly, retailing sits closer to the former, with three out of the four employers holding the overall contract themselves.

The allocation of teaching and assessment also varies considerably. The traditional approach, in which technical education is provided by a further education college and the employer covers the remainder of the tasks, characterises four out of the six cases in engineering and telecommunications. In construction, only one organisation takes that path; the remainder use either an ITB or a specialist subsidiary. In retailing, by contrast, four of the five employers who provide AA conduct all training and assessment 'in house'. The fifth formerly did the same itself, but has allocated the task to a specialist provider, as part of withdrawing from AA.

The fit between these patterns and the MAAC's aspirations is therefore limited, but that may not matter for training quality. The issue is difficult to assess, and the evidence on it mixed. The MAAC's view is supported by NG Bailey's preference for the traditional ('employer plus FE') mode, which reflects its view that sub-contracting for anything more than further education would jeopardise the firm's reputation for training and skills. Two decisions by Siemens Traffic Controls also reflect similar perceptions. The first was its withdrawal a few years ago from a Modern Apprenticeship programme for manufacturing test engineers that was organised by specialist commercial providers. The second is the design of its recently adopted, non-AA programme for field service engineers, whose external content is limited to the traditional part-time course at a further education college. The latter decision was informed by the former experience, in which external commercial providers were held responsible for a low completion rate.

Overall, however, the evidence is mixed. All nine of the employers who do not act as prime sponsors insist that they are closely involved in the design and operation of their apprenticeship programmes. Their claim is supported by two attributes of their programmes: apprentice selection and status. All nine select their apprentices themselves (or through a training subsidiary). In particular, although J.C.Bamford leaves all the teaching and assessment of its Advanced Apprentices to two further education colleges, it selects the entrants itself. In 2004 it left half of its AA vacancies unfilled rather than accept applicants whom it judged unsuitable. Moreover, all nine employers give their apprentices employee status from the start of their training. (STEAMCO recently abandoned the practice of waiting until the end of the initial nine months of ITB-provided training before offering it).

The employers who contract out much of the content of their apprenticeship programmes tend to emphasise the benefits of specialization, including economies of scale. Out-sourcing permits scarce managerial time to be devoted to higher value added activities than ensuring compliance with what are widely seen as burdensome contractual requirements, including officially required paperwork, which specialist providers often handle more cheaply and effectively.

As for training resources, some signs of the hypothesised link to employer responsibility emerge, but the pattern again varies by case and sector. The four employers (in engineering, construction and telecommunications) to provide estimates of the costs of training – which typically account for direct inputs only, are based on accounting rather than opportunity costs, and exclude public grants – suggest that they incur a cost of between £40,000 and £65,000 per Advanced Apprentice. Sums that large dwarf the maximum LSC grant of around £15,000 (Appendix: Table A2). In such cases, prime sponsorship by the employer is undoubtedly associated with a large additional investment in skills.

The same appears not to apply in retailing. The retailing employers who act as prime sponsors actually go a step further than the traditional pattern, in that they provide and assess all components 'in house'. At the same time, they do not appear to invest significant amounts in their Apprentices, over and above the public funds they receive. The LSC grant typically covers the costs of off-the-job training and all assessment. The employer is left to cover any costs incurred in on-the-job training, such as would arise were Advanced Apprentices paid more than the value of their output during training. Our retailing interviewees typically stated

that their Apprentices become productive quickly. The costs to the employer of on-the-job training are therefore potentially low, even negligible or negative – as is suggested by other, more systematic, evidence (Hogarth and Hasluck, 2003).

Moreover, even if the willingness of some retailers to provide all the training and assessment in-house suggests high commitment to their programmes, their task is lightened by the low requirements of the sector's Technical Certificates. The 'guided learning hours' stipulated by the Sector Skills Council are only half those in construction and one quarter those in engineering, and it is not clear that even those guidelines are observed throughout the sector (Appendix: Table A2). As training for the certificates is typically 'delivered' by the employer's staff without external educational assistance, their wider educational role is questionable.[21]

No simple mapping from employer responsibility onto the scale of investment in apprentices is therefore possible. The two are positively associated in engineering, where prime sponsorship by the employer is the norm, and also in construction, where it has become rare. But they do not go together in retailing, which combines an extreme form of employer sponsorship, viz., in-house provision of the entire training framework, with little or no investment by the employer in apprentices' skills, over and above the public training grant.

Out-sourcing in training provision need not therefore constitute a weakness (Gospel and Foreman, 1996). The conclusion may however apply only when apprenticeship is organised around contracts, markets and competition, and not when it is based on social partnership and administrative coordination, as in several other countries.

7 Conclusions

This article discusses the relationship between large employers and apprenticeship training in Britain, drawing on interviews with managers in twenty-nine large organisations, public and private, in four training sectors: engineering, construction, retailing, and information and communications technologies. The extent and content of participation in apprenticeship by large employers is of interest both for labour market functioning and for public policy.

We define 'apprenticeship' generically, as a learning programme that aims at certified occupational skills at intermediate level and combines work-based learning with technical education. In relation to current government support for apprenticeship, the study is restricted to the Advanced Apprenticeship programme and its associated Level 3 vocational certificates. We also consider apprenticeships that do not come under AA.

Our four sets of findings start with evidence that apprenticeship does function outside the Advanced Apprenticeship programme, but only to a limited extent, and primarily involuntarily. We found just one case of a large employer who chooses to offer apprenticeship outside AA, and several cases in which at least some apprentices are not eligible for coverage, whether in principle or in practice. The leading categories are graduate, adult and technician

apprentices. The existence of such programmes and participants points up the need to distinguish between 'Apprenticeship' and 'apprenticeship' – i.e., between the government programme and the labour market institution.

Second, viewed as a source of intermediate skills, apprenticeship has advantages and drawbacks, as compared to the alternatives of recruitment and upgrade training. In particular circumstances either can be more cost-effective than apprenticeship. The case studies show considerable variety in the use employers make of the three sources of skill. Not surprisingly, recruitment and upgrading are widely preferred to apprenticeship when they cost less and deliver acceptable quality. Where skills must be built on a substantial platform of technical knowledge and experience, apprenticeship tends to be preferred to upgrade training, but upgrade training plays the larger role overall.

Apprenticeship plays a significant role partly because it offers advantages in HR terms, primarily in terms of the socialization of young people into the organization's culture and the reduction of labour turnover. These benefits, which applied traditionally only to an elite among apprentices, indicate the extent to which apprenticeship has been reorganised. Its links to occupational labour markets have weakened; those to the internal labour markets operated by particular large employers have strengthened. In some cases, these advantages for the employer compensate for a cost that is greater than that of upgrade training. The downside from a policy standpoint is the weakening, particularly in 'new' sectors such as retailing, of the attachment of apprenticeship to external skill standards and educational development.

Particular attributes of AA are associated with the employer's decision to provide apprenticeship. The key issue is the employer's response to AA's training content proper. Employers who value the associated vocational qualifications are more likely to participate in AA than those who do not. Other widely discussed attributes of AA, including remedial education, administrative requirements and access to public funds, are not significantly associated with participation, in this sample at least.

Third, the intensity of participation in apprenticeship varies by framework and context. Our cases were picked with an eye to ownership patterns. The intensity of apprentice training is higher in unlisted companies than in other organisations, and significantly so for family-owned ones. Within retailing, the attributes of technologies, product markets and labour markets influence companies that operate multiple, small outlets, including convenience stories, to participate in apprenticeship, but the operators of department stores to avoid it.

Finally, around half of the large employers who provide apprenticeship do not take responsibility for organising and operating the programme, but rather leave much or all of the task to external providers or subsidiaries. The implications of employer responsibility for training resources and quality are not unambiguous. Some employers see reputational reasons for running their programmes themselves and they tend to invest significantly in their apprentices. Other employers who subcontract much of the content of their programmes appear to be no less interested in their programmes. Yet others, who provide the entire programme themselves, invest no additional resources in their apprentices – as in some cases in retailing and construction.

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Table 1 Attributes of case study organisations

Sec	Name	Location	Employ-ment (Parent/ group)	Intermediate skills		Advanced Apprenticeship		App intake[c]
				Occupations covered	Employ-ment	Partic-ipate	Contract holder	
E	J. C. Bamford Excavators Ltd.	Rocester, Staffs	6,000	Toolroom and maintenance, design and craft	90	yes	External provider (FE Colleges)	8
E	Marshall Aerospace Ltd	Cambridge	3,800	Engineering craft, technician	750	yes	Self	18
E	Perkins Engines Company Ltd	Peterbor-ough	3,500[a]	Engineering craft and technician	425	yes	Self	18
E	Rolls-Royce PLC	Derby	35,000	Engine fitters and testers, production technicians	9,500	yes	Self	66
E	Siemens Standard Drives	Congleton	430,000	Electronics, IT and engineering technicians	40	no	-	0
E	PARTSCO	(Britain)	6,000	Maintenance craft, production engineers	30	no	-	0
EC	STEAMCO	(Scotland)	10,500	Engineering & construction, craft and technician	2,500	yes	External provider (ITB)	50
C	Carillion Construction Training	London	20,000	Construction trades	n.a.	yes	Self (training subsidiary)	1,200
C	Laing O'Rourke Learning World	Dartford	15,000	Construction trades	7,000	yes	Self (joint venture)	30
C	Leicester City Council DSO	Leicester	16,000	Construction, electrical and plumbing trades	500	yes	External providers (JTL, FE College)	14
C	McNicholas plc	London	1,500	Construction trades, especially road work	700	no	-	0
C	Morrison Construction	Sutton Coldfield	7,000	Construction trades	300	yes	External provider (ITB)	15
C	Mowlem Building, South West	Bath	26,000	Construction trades	370	yes	External provider (ITB)	8
C	NG Bailey & Company Ltd	Ilkley	3,500	Electrical, heating and ventilating, plumber	1,050	yes	Self	60
R	Bells Stores	Skelton, Teeside	1,000[a]	Store manager, assistant store manager	200	yes	Self	15
R	Ipswich and Norwich Co-	Ipswich	3,500	Store manager, deputy store	130	yes	Self	22

	operative Soc Ltd			manager				
R	John Lewis Partnership	London	63,000	Section manager, department manager	5,500	no	-	0
R	Lincolnshire Co-operative Society Ltd	Lincoln	2,700	Store manager, supervisor	850	yes[d]	External provider (LAGAT)[e]	0
R	Pilot Outlet Limited	Swansea	n.a.	Store manager, deputy store manager	n.a.	yes	Self	n.a.
R	Selfridges & Co	London	4,000	Team-leader, merchandiser, specialist, manager	500	no	-	0
R	Tates Limited	Willenhall	3,600	Store, area and regional manager; department head	300	no	-	0
R	Tesco Plc	Welwyn, Herts	237,000	Section manager, team leader	n.a.	no	-	0
R	The Co-operative Group	Glasgow	40,000	Junior manager	3,000	yes	External provider (Manchester Enterprises)	28
IT	DATACO	(Britain)	4,000	IT software programmer	350	no	-	0
IT	Data Connection Ltd	Enfield	300	IT equipment and systems operator	20	no	-	0
IT	BIGBORO	(England)	15,000	Computer operator, IT technician	20	no	-	0
IT	Logica CMG	London	21,000	IT operation and support staff	250	no	-	0
CT	BT Retail	Sunderland	36,000	T/C field service engineer, technician	18,000	yes	External provider (Accenture)	400
CT	BT Global Services	Swindon	6,000[b]	T/C field service engineer, technician	5,000	yes	External provider (Accenture)	42
CT	Siemens Traffic Controls	Poole	430,000	Toolroom and maintenance, design and craft	90	no	-	8

Notes: Parentheses indicate information concealed to protect anonymity;

E, engineering; EC, engineering construction; C, construction; R, retailing; IT, information technology; CT, communications technologies; T/C, telecommunications

a Data refer to the case study company (not its owner)

b UK operations only

c Entrants to apprenticeship in the most recent year for which data are available

d Contract formerly held by the employer

e Currently withdrawing from programme

Table 2 Sources of intermediate skill in case study organisations

	Number of cases	Intermediate skills employment	Sources of intermediate skill (%)[a] Apprentice-ship	Upgrade training	Recruit-ment	All
Engineering	6	10,800	78	1	22	100%
Construction[b]	5	4,500	30	3	67	100
Retailing	7	10,700	5	80	15	100
Telecommunications	2	23,300	14	84	2	100
IT	4	500	0	17	84	100
All	24	49,800	27	57	16	100

Note: includes only cases that provided adequate information, including those for which Level 2 and 3 Apprenticeships are not readily distinguished

a Multiple sources excluded. Skilled workers previously apprenticed to the firm who had subsequently worked elsewhere and then being recruited by the firm are classed under 'recruitment' not 'apprenticeship'; 'upgrade training' means that most or all of the skills involved were learned along that route.

b Includes engineering construction (one case).

Table 3 Attributes of Advanced Apprenticeship as evaluated by case study employers: mean scores and association with participation

Attribute	Number of responses	Mean score[a]	Correlation with participation[b]
NVQ (Level 3-5)	27	0.35	0.37*
Technical Certificate	27	0.35	0.36*
Effect on labour turnover	24	0.57	0.31
Administrative requirements	27	-0.69	0.16
Inspection requirements and findings	26	-0.07	0.14
Programme's reputation	26	0.19	0.13
Better quality employees	26	0.56	0.05
Key Skills	26	0.13	0.00
Help young people	27	0.88	0.01
Encouraged by other bodies[c]	27	0.35	-0.01
Encouraged by trade union(s)	27	0.19	-0.01
Public funding (cuts training costs)	27	0.71	-0.13
Effect on your public image	26	0.67	-0.22
Expect frequent change in AA requirements	26	-0.53	-0.01

Notes:

a Mean score on scale: -1: negative influence on participation decision
0: no influence
1: positive influence
In response to the question 'which of the following factors have led you to participate / not participate in Advanced Apprenticeship?'

b Simple correlation between evaluation of particular AA attribute and participation in Advanced Apprentice-ships (in construction, any Apprenticeship); asterisk indicates significant difference from zero (p<.10)

c Learning and Skills Council, Sector Skills Council, employers' association, chamber of commerce

Table 4 Intensity of apprenticeship training of case study employers by sector and participation in Advanced Apprenticeships

	Number of employers	Intensity of apprentice training[a] (%)	
		Unweighted	weighted[b]
Engineering	4	13	4
Construction	5	17	13
Retailing	4	12	2
Telecommunications	2	2	2
All	15	12	4

Notes: excludes two construction firms in which Level 2 and 3 programmes cannot be distinguished; no IT cases provide apprenticeships

a number of apprentices (including non-AA ones) as a percentage of employment in the relevant intermediate skills occupations

b by non-apprentice employment in the relevant occupations

Table 5 Content of apprenticeship provision by case study employers

Frameworks	Number providing apprent-iceship	Employer selects apprentices itself	Prime sponsor (contract holder)				Provision of teaching and assessment[a]			
			Own organis-ation	ITB[c]	Training subsid-iary[d]	Independent provider(s)	Own organisat-ion (only)	FE (traditional role)[e]	Independ-ent non-FE provider	Other
Engineering, telecommunications	6	6	5	0	0	1	0	4	1	1
Construction[b]	7	7	1	3	2	1	0	1	1	5
Retailing	5	4	3	0	1	1	3	0	1	1
All	18	17	9	3	3	3	3	5	3	7

Note: includes the one provider of 'non-AA' apprenticeships

a Training and assessment of NVQ, Technical Certificate and Key Skills

b Includes engineering construction

c Industrial Training Board (CITB or ECITB)

d Includes joint ventures and partially owned independent providers

e Teaching and assessment of Technical Certificate but not NVQ

Table A1 Number of leavers by area of learning, Advanced Apprenticeship, 2002-03 ('000)

		%
Engineering, Technology, Manufacturing	15,100	24.8
Construction	5,700	9.4
Information & Communication Technology	1,800	3.0
Retailing, Customer Service, Transportation	8,500	13.9
All 4 areas	31,100	51.2
All areas	60,800	100.0

Source: DfES, Statistical First Release SFR04, 29.6.04, Table 8
Note: non-completers included

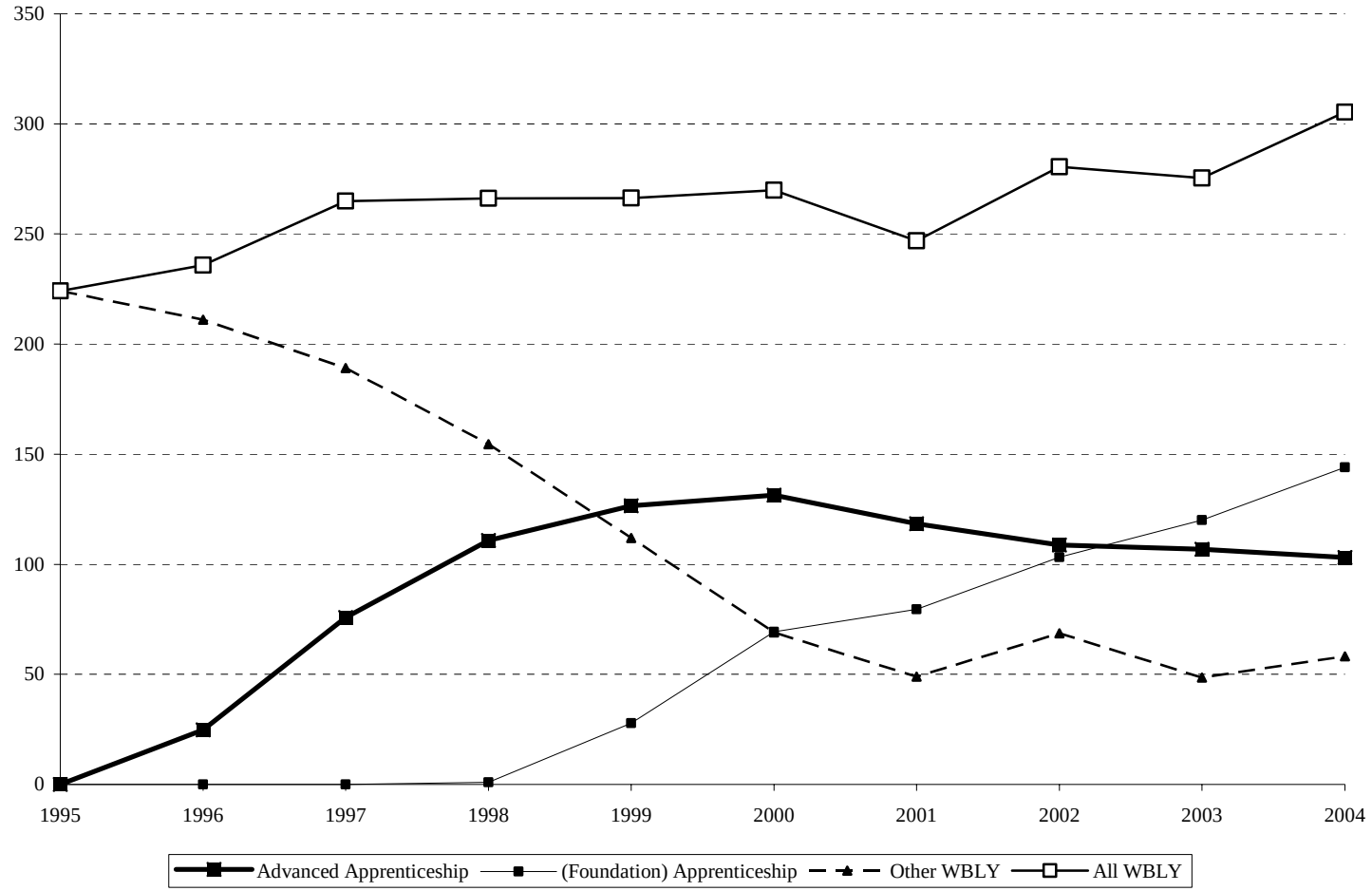
Table A2 Public funding for completion of Advanced Apprenticeships by programme component and framework (authors' estimates)

		NVQ3	**Technical Certificate**		**Total**
Age at entry		**£**	**Guided learning hours**	**£**	**£**
16-18	Engineering; IT Services, Communications Technologies	10,604	240 - 1,250	1,384 - 4,149	12,301 - 14,753
	Construction	9,789	450	2,163	12,265
	ITC: IT user	5,221	90 - 360	541 - 2,163	6,075 - 7,697
	Retailing	4,786	180 - 250	881 - 1,384	5,980 - 6,483
19-24	Engineering; IT Services, Communications Technologies	5,915	240 - 1,250	1,038 - 3,112	7,266 - 9,340
	Construction	4,691	450	1,622	6,626
	ITC: IT user	3,590	90 - 360	406 - 1,622	4,309 - 5,525
	Retailing	3,590	180 - 250	661 - 1,038	4,564 - 4,941

Sources: LSC, Funding: Indicative Rates for Further Education, Work-Based Learning and School Sixth Forms in 2004-05, Annex C; Funding Arrangements for Work-Based Learning for Young People in 2002/03, July 2002, §64-65; LSC, Advanced Apprenticeship in Engineering, Framework Template, Framework Code 106, November 2004, Annex A; E-Skills UK, Apprenticeship and Advanced Apprenticeship for IT Users, Framework 322, p.7; Apprenticeship Framework in Communications Technologies … Sector Code 232, p.5; Apprenticeship Framework for IT Services and Development, Sector Code 292, p7; Skillsmart; and direct communication by CITB.

Notes: Two figures in a cell indicate minimum and maximum amounts; additional payments for personal disability and deprived areas not included; final column includes £313 for Key Skills in all cases. Guided learning hours are those specified for qualifications recognised as AA technical certificates (lowest and highest or range); as payments for technical certificates in 2004-05 are not available, the rates (by learning hours) for 2002-03 are used, increased by the inflation adjustments of 2.5% applied to LSC funding rates in each of the two subsequent years. Key Skills payments are based on published 2004-05 rates, on the assumption that no Apprentice undertakes more than the two required areas of learning.
Estimates exclude additional payments made selectively according to area living costs and personal disadvantage.

Figure 1 Activity in Government-Funded Work-Based Learning for Young People, 1995-2004 (Thousands in learning in March/April)



[1] A more detailed discussion is provided by Ryan, Gospel, Lewis and Foreman (2006).

[2] Inspection-based quality indicators prove superior in only some occupations and sectors when an employer rather than a commercial specialist acts as prime contractor for an Apprenticeship programme (ALI, 2004: 13). Inspection results may however be biased against employer-based provision in practice (Lewis and Ryan, 2005).

[3] The National Employer Service was previously called the National Contracts Service or the National Contracting Service.

[4] The Apprenticeship programme excludes its New Deal counterparts, operated by the Department of Work and Pensions, some of which also contain work-based learning for young people. As adults are now eligible for the Apprenticeship programme, in principle the qualifier 'for young people' no longer applies.

[5] Scotland has not followed England's recent re-labelling of publicly funded work-based learning for young people. Its government has retained the name Modern Apprenticeship for its Level 3+ programme; it terms the Level 2 programme Skillseekers, not Apprenticeships (http://www.scotland.gov.uk/topics/education/-work-based-training).

[6] The Modern Apprenticeship programme of 1994-97 was restricted to intermediate skills (Level 3-4 work-based programmes for youth). It was then renamed Advanced Modern Apprenticeship in order to accommodate the re-labelling of National Traineeships (for Level 2 skills) as Foundation Modern Apprenticeship. The Foundation and Advanced strands of MA were merged in 2004, into what has since been called the Apprenticeship programme, with an internal distinction between Advanced (Level 3+) and other Apprenticeships (Level 2) within a 'family of Apprenticeships' (DfES, 2002: 2; LSC, 2004b: 5).

[7] More generally, the skill content (as measured, e.g., in terms of either resource costs or productivity) of training programmes and qualifications that formally are pitched at a given level may vary from sector to sector, as a result of the limited standardisation attained by the Sector Skills Development Agency for training frameworks and by the Qualifications and Curriculum Authority for vocational qualifications, within Britain's decentralised, employer-led approach to the regulation of work-based training. Our evidence suggests that some differences may be considerable. In particular, several interviewees view a Level 3 qualification as representing a much lower level of skill in retailing than in engineering. The design of this research does not allow us to pursue the issue. Instead, all Level 3, and no Level 2, Apprenticeship is taken to constitute apprenticeship.

[8] The complementary phenomenon, 'non-apprenticeship AA', may well be more important. Some of the Technical Certificates recognised for AA purposes, e.g., in the IT User and Retailing frameworks, require less than 200 'guided learning hours' (Appendix: Table A2). Such frameworks may therefore involve too little vocational education to satisfy our definition of apprenticeship. The issue cannot be studied effectively using the research design in hand.

[9] This means that the relevant Sector Skills Council (SEMTA, the Construction Industry Training Board, Skillsmart, and e-skills UK, for engineering, construction, retailing, and ICT, respectively) has specified one or more training programmes that meet the requirements for public funding by the LSC under AA (viz., learning oriented to the stipulated NVQ3, Technical Certificate and Key Skills qualifications).

[10] For some purposes we divide the ICT framework into information technology and telecommunications components, consistent with the divide between new and old respectively within the category.

[11] The categories in Table A1 that include engineering and retailing are defined more broadly than in other data used here.

[12] An approximation to such a dataset was the Employers' Manpower and Skills Practices Survey of the early 1990s (Dench, 1993).

[13] Most of the interviews were conducted on the organisation's premises by two project members with one or more managers responsible for training or HRM activity. The interviews lasted between 45 and 210 minutes, averaging around 75 minutes.

[14] Central government could not be included as only area of learning relevant to it is information technology, and nowadays most or all of that function is out-sourced.

[15] Proposals for an NVQ3 in installation and maintenance skills for traffic control systems, around which an AA framework could be developed, have foundered for lack of broad support by employers.

[16] Some employers take all of their craft and technician apprentices through the early stages of Level 3 training under AA, and subsequently give some of them Level 4-5 training outside AA. A similar overlap at a lower level characterises some construction programmes, in which some Level 2 apprentices are selected to continue to Level 3 (e.g., one in four at Carillion). In such cases, both stages can be supported financially by AA.

[17] One interviewee in retailing reported that its local LSC had threatened to withdraw its AA contract on the ground that programmes with fewer than fifty participants would no longer be accepted. The threat was not acted upon, but that may not have been so in other instances.

[18] A third potential alternative, the substitution for skilled labour of other inputs (notably capital and unskilled labour), is not considered here.

[19] his figure excludes construction programmes dominated by Level 2 Apprentices, including those of Carillion Construction Training and Laing O'Rourke Learning World.

[20] Family ownership is defined as the presence of a controlling family interest. The simple correlation between a dummy variable for that status and training intensity, across the 27 cases for which information is available, including non-providers of apprenticeship, is 0.32 ($p<.10$). The correlation of training intensity with unlisted company status also has a positive sign, as expected, but not statistical significance.

[21] The situation in construction is more diverse but broadly similar. The two employers who use a subsidiary as prime sponsor expect that body to finance itself, relying on a mix of public grants and revenues from training services sold to other employers. The employer itself injects no extra resources into the training – again, except insofar as the Apprentices' pay exceeds the value of their output during on-the-job training. The construction Training Boards' programmes do however require more from the employer than in retailing – not only in terms of the payroll levy that funds their activities, but also because Apprentices spend more time studying for a Technical Certificate than in retailing, and some of that time is normally paid for by the employer.

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