



European Federation  
of Building  
and Woodworkers



Education and Culture DG

Lifelong Learning Programme

**Leonardo Da Vinci Project  
„Bricklayer“**

# **Bricklaying Country report**

## **England**

Linda Clarke and Michaela Brockmann  
University of Westminster, London  
Christopher Winch  
King's College, London

# **1. Governance**

## *The state*

Key characteristics of the English vocational education and training (VET) system are its voluntarist nature and weak statutory framework. Quangos play a pivotal role in the field of VET being officially defined as ‘... a public body which has a role in the processes of national Government, but is not a government department or part of one, and which accordingly operates to a greater or lesser extent at arm's length from Ministers.’ More simply a quango means a national or regional public body operating independently of Ministers but for which Ministers are ultimately responsible. In the case of VET, responsibility is delegated to the Learning and Skills Councils (LSC) - government quangos with the statutory tasks of administering the budget for education and training in response to employment needs and supporting the Sector Skills Councils (SSC). SSCs operate under a government licence that is reviewed every five years and are responsible for making sure that the skills needs of the sectors are met and for organising the provision of training and education together with the respective industry, further education (FE) colleges and private training organisations (DfES 2001).

Keen to increase participation and skills levels in England, the government operates a top-down approach by imposing targets for qualifications, notably National Vocational Qualifications (NVQs) and apprenticeships. Responsibility for delivering these is devolved to the LSC, which distributes funding to so-called ‘managing agencies’ responsible for delivering and administering qualifications at local level. Managing agencies are typically Further Education Colleges, although the SSC for construction, ConstructionSkills, is a managing agency in its own right. The current level of funding is £8,000 for the apprenticeship framework (for a 2-year level 2 programme) for the age group 16-19. Over the age of 19, funding is halved. This system is currently being replaced by one where responsibility for funding and securing apprenticeship places is devolved to local authorities.

The key quango responsible for qualifications and working closely with government and other agencies is the Qualifications and Curriculum Authority (QCA). QCA’s core responsibilities in relation to VET include: working with stakeholders and strategic partners to develop innovative education initiatives, such as the 14-19 Diploma and the Qualifications and Credit Framework; providing guidance and support, helping to build a VET system that benefits all learners throughout their lives; overseeing the National Assessment Agency which develops and delivers tests and assessments, safeguards exams, and works with awarding bodies (QCA 2009). During 2009-10, QCA will evolve into the Qualifications and Curriculum Development Agency (QCDA), a new agency, announced in 2007 as part of the Government's Confidence in Standards review. This will create, develop and deliver the Government's programmes for the management and reform of qualifications, curriculum and assessment. At the same time, Ofqual (Office of the Qualifications and Examinations Regulator) has taken over the regulatory functions of QCA since April 2008, establishing an ‘independent guardian of standards’ to regulate qualifications, exams and tests in England, including monitoring standards and quality and overseeing awarding organisations’ systems (Ofqual 2009).

The QCA has been in charge of the National Qualifications Framework (NQF) which has provided the model for the European Qualifications Framework (EQF) and broadly mirrors the structure in terms of the 8 levels and the descriptors (although not the interpretation of concepts!). The NQF is now being replaced by the Qualifications and Credit Framework (QCF) which will be implemented in November 2009. The QCA has just completed the process of referencing the QCF to the EQF as was required as part of EQF implementation.

While the referencing was carried out by an expert (according to QCA internal methodology) and the consultation involved the social partners, SSCs and others, it is highly questionable that the alignment of the levels will invite the trust of relevant stakeholders in other European countries. As the final report merely requires the signing off by British ministers rather than the Commission, the whole process appears a futile exercise. Apparently, the Commission are considering some kind of validation or peer review.

Another emerging role for the state relates to apprenticeship and is being introduced by the Government in the form of a Bill - the Apprenticeships, Skills, Children and Learning Bill 2008-09. Not only will this formally establish Ofqual as the regulator of qualifications, and QCDA as the Government agency for the promotion of quality and coherence in education and training in England, but it also introduces a Blueprint for Apprenticeships, a framework intended to provide a quality standard. This is, however, weak, specifying only that an apprenticeship consist of arrangements for employment, and training or study.

### ***ConstructionSkills***

The construction industry is peculiar in still having a statutory levy/grant system, currently under review, and maintaining for this a Construction Industry Training Board (CITB). These Boards, which originally (from the Industrial Training Act of 1964) covered all industries, now only exist for the Construction Industry and the Engineering Construction Industry (ECITB). The remit of these was to: establish policy with respect to training, including its length, the registration of trainees and their attendance at further education college; set standards of training and syllabuses; provide advice and assistance about training; devise tests to be taken by apprentices and instructors; run training course in training centres; pay grants to reimburse firms and allowances to trainees not taken on by firms; collect levies; and borrow (Perry 1976: 101). The CITB was originally tripartite with equal representation of trade unions and employers. Since the 1980s, however, the number of trade union representatives has been reduced and is now only two and the training function considerably scaled down. The ITB has an income of £150m, £120m from the levy paid by firms above a certain turnover level and £30m from the Learning and Skills Council (LSC) for its role as an SSC. The levy pays the grants given to firms, though there is some concern that these now exceed the levy and the fund may be going into deficit.

This additional funding is because CITB is now subsumed within the SSC ConstructionSkills, which represents a partnership between CITB-Construction Skills, the Construction Industry Council (mainly representing different professional organisations) and CITB Northern Ireland. The SSCs were set up by the government to develop and regulate skills and qualifications for the whole sector:

We represent every part of the construction industry, from architects to bricklayers, in every part of the UK. And we cover every part of the skills agenda - from grants to college places. We understand what the industry wants and needs; we tell that directly to government, and we have the power to get things done (ConstructionSkills 2009).

SSCs were designed to be independent, employer-led organisations, responsible for tackling the skills and productivity needs of employers.. All SSCs have the same four key goals and each SSC is responsible for dealing with the skills needs within their sector UK-wide. The four key goals are:

- Reduce skills gaps and shortages
- Improve productivity
- Increase opportunities for all individuals in the workforce
- Improve learning supply

SSCs give employers direct input into how training funding and policy are organised.

As the SSC for Construction, ConstructionSkills has a major role in developing and regulating qualifications. In collaboration with the Occupational Working Group on Trowel Occupations, it establishes and maintains National Occupational Standards (NOS) – the

building blocks of qualifications – and the qualification structure for the sector, in particular NVQs (CITB 2006a). Both bodies will agree the levels of qualifications, the inclusion of NOSs (units of competence and performance criteria), and guidance on assessment. The Working Group is dominated by employers and the main employers' associations, although there are representatives from the 2 main trade unions – the Union of Construction and Allied Technical Trades (UCATT) and Unite (formerly the Transport and General Workers Union – TGWU – and AMICUS) and from learning providers. Construction Skills are also responsible for developing the Sector Qualification Strategy which lays down the types of qualifications it seeks for the coming year. Awarding bodies and other organisations seeking to put forward qualifications require SSC support before seeking formal approval from Ofqual, the independent regulator. Finally, an important role of ConstructionSkills is also to run national and regional Skill Observatories which forecasts future skills requirement through its demand-based model.

With the introduction of the new QCF there are changes being put in place, which may challenge Construction Skills' dominant role in regulating qualifications. The QCF requires much greater flexibility, for instance that units are described in small bite-size chunks which carry credits and can be accredited. Rather than specifying a set number of units, it seeks a much broader range of options to suit learners' and employers' needs, and for qualifications to be awarded on the basis of the required number of credits. At the same time (and in line with the proposed Apprenticeship Bill) there is much greater scope given for other organisations (notably employers) to put forward their own qualifications together with assessment criteria. Construction Skills is concerned that its power to determine the content and assessment of NVQs is coming under threat, though QCA continues to assure that it will be able to specify the core content of qualifications. Nevertheless, the QCF has put a question mark over the role of the SSC and, notably, the structure and standards of qualifications.

### *The social partners*

The trade union role in training has been steadily eroded not only in terms of membership of the ConstructionSkills but in the Modern Apprenticeship. The key trade unions with respect to bricklaying are UCATT and Unite, though traditionally the TGWU covered bricklayers' labourers. Membership of UCATT is reported to be up to 120,000, though trade union density for the industry as a whole is estimated at 15% of the 1.9 million workforce, as compared with 26% in 1995 (BERR 2008a and b). Unlike in the past when trade unions were involved in the apprentice contract which had to be registered with the National Joint Council for the Building Industry (NJCBI), they no longer have any formal and contractual role with respect to Apprentices. UCATT too has no clear policy with respect to training, though a proposal based on the Scottish apprenticeship model has been put to the Construction Industry Joint Council (CIJC), composed of the relevant employer associations and trade unions (UCATT and Unite). The justification for this is that: 'the apprentice structure is not fit for purpose at present'. UCATT has also raised the issue with the employers of putting in place a structure to oversee apprenticeship, that is some form of regulation, but this was rejected as involving too much bureaucracy. There is also no longer any register of apprentices.

Whilst the construction trade unions covering bricklaying are weak, especially in the private sector, so too increasingly are the employers associations in disarray. There are altogether an estimated 186,000 private contracting companies, over 93% of which have fewer than 13 employees (BERR 2008b). The Construction Confederation (CC) has till now been the key body, covering the British Woodworking Federation, the Civil Engineering Contractors Association, the National Federation of Builders and the Scottish Builders Federation. However, UK Contractors Group (UKCG) was officially launched on the 5<sup>th</sup> January 2009 aimed at supporting the industry on sector specific issues whilst leaving more general

business issues to the newly formed CBI (Confederation of British Industry) Construction Council.

UKCG seeks to be the leading trade body for the UK construction industry focusing on sector specific issues and to represent the interests of its members in dialogue with Government and regulatory bodies. Its members include many of the leading contractors in the country, including Balfour Beatty, Carillion, Costain Group, Galliford Try, Keepmoat, Kier Group, Laing O'Rourke, Mace, Seddon Group Ltd, Shepherd Construction, Sir Robert McAlpine, Skanska UK, Wates Group, Willmott Dixon. Many of these, whilst not directly employing bricklayers, will take these on as subcontractors. In contrast to this organisation of the large contractors, is the Federation of Master Builders, representing an estimated 12,000 of the smaller contractors. However, the fact that the FMB and the National Federation of Builders declined to be interviewed by us and referred us instead to member companies perhaps indicates their lack of competence in relation to bricklaying VET and qualifications.

More key than industry-wide organisations to qualifications and VET for bricklaying are the trade associations, a factor which is symptomatic of the continued trade nature of bricklaying in Britain. Formed by leading companies in the industry, the Association of Brickwork Contractors (ABC), with 20 full members and 20 trade association members, champions the ongoing importance of brick. The aims and objectives of ABC are supported by the Brick Development Association (BDA), the Better Brickwork Alliance and the CITB. The Association strives to promote, encourage and improve technical knowledge and education of persons in – or training to be in – the brickwork contracting industry so as to improve the overall standards of work. Member companies must support the Construction Skills Certification Scheme (CSCS) and be registered with the CITB and fully endorse the Board's apprenticeship initiative.

Many of the large companies, given the upheavals in the CC are now outside the CIJC collective agreement and have no obligation to adhere to the industry scheme. Recognition through the collective agreement of the different skill levels related to qualifications, although never secured through the kind of institutional arrangements common in continental Europe, is increasingly problematic and has become even weaker in the last two decades. Indeed the wage rate levels recognised in the Working Rule Agreement (WRA) for the Construction Industry bear no reference to NVQ Levels. They are broken down into: General Operative, Skill Rates 1-4, and Craft Rate, with, for example, different concreting operations paid at the lowest skilled rate, formwork carpenters at the Craft Rate and those operating tower cranes anything between the different skilled rates depending on the tonnage of the crane (CIJC 2003). What is rewarded is, therefore, the particular activity, rather than the person or the occupation *per se*. These rates also represent a significant change from earlier building agreements which maintained a sharp distinction between Craft Operative rates and Labourers rates, with no intermediate rates apart from the allowances for working under particular conditions in the case of building and 'plus rates' for particular activities in the case of civil engineering (NJCBI 1991). Whilst bricklayers are now generally qualified to NVQ2 level, they should according to the agreement qualify for the Craft Rate. An alternative agreement, of little significance in reality, is BATJIC, the Building and Allied Trades Joint Industrial Council, representing a partnership between the FMB and the former TGWU..

In the new Apprenticeship Bill (DIUS 2008a) , there is no provision for collective interest representation of social partners, marking a further weakening in industrial relations in the industry and in the voice of employees and trainees.

## ***Training providers***

Key training providers are the publicly funded FE colleges and private training providers, including the training arms of major contractors such as Carillion. Whilst data is available on public sector spending, no-one knows how much money is being invested privately in construction training, though ConstructionSkills is currently conducting research to quantify this.

One key change in the governance arrangements is the increased importance of the school-based route for construction training, giving a particularly key role to FE Colleges. The vast majority of first year entrants into construction, nearly two-thirds, are based in FE Colleges and only about one-third are in work-based training, including in Apprenticeships. As a result, FE colleges increasingly play a role similar to ConstructionSkills, not only as managing agents but also in placing trainees with employers and obtaining work experience. Unlike other European countries, however, government policy is slow to recognise the two routes which have emerged, though there have been a steady stream of policy reforms of FE, in particular following the Foster Report (2005) on the future role of FE colleges. On the basis of this report the Department for Education and Skills published a White Paper, *Raising Skills*, setting out proposals for reform of the 14-19 phase, aiming to secure the basics in English and Maths, to introduce new specialised Diplomas to cover the occupational sectors of the economy and to provide more opportunities to re-engage the disengaged or disaffected through tailored programmes, significant work-based learning and a new pilot programme based on the post-16 Entry to Employment programme (DES 2006). The stated intentions were to: ‘equip learners with high-quality skills for productive, sustainable employment and personal fulfilment and ..ensure that employers have the right skills for their business to succeed in a competitive global economy’. Whether these two intentions are entirely compatible was not addressed. The White Paper was introduced at the same time as the influential Leitch Review (2006), aiming to raise skill levels in the economy, and has since been updated (e.g. DCSF 2007).

One problem identified in the Foster Report (DfES 2005) was the strategic confusion about roles, especially between the LSC and DfES, a confusion which in many respects persisted with the creation of the Department for Innovation, Universities and Skills (DIUS) in 2007 when VET tended to fall in the gap between DIUS and the Department for Children, Schools and Families (DCSF). Since then new reforms have been proposed by the DCSF and the DIUS in a White Paper, *Raising Expectations*, involving the dissolution of the LSC by 2010 and instead making local authorities responsible for offering all young people in their area both the new Diplomas and Apprenticeships alongside GCSEs and A levels (DCSF and DIUS 2008). Whilst this transfer is intended to deliver the reforms needed to raise the education and training leaving age to 18, further funding is also directed to a new agency to provide training and skills for adults, ‘transforming the system to be responsive and demand-led’ (DCSF and DIUS 2008). To add to the confusion, the government has recently announced that the DIUS is to be disbanded and a new super-ministry for Business, Innovation and Skills (Bis) created, with the result that there will no longer be any ministry with ‘education’ or ‘universities’ in its title (Guardian 2009).

## ***Summary***

The lack of stability, fluidity, fragmentation and confusion of the institutional structure for VET is symptomatic of what might be regarded as a weak system, given the ease and speed with which changes in policy are introduced. Ongoing work (Moehler *et al.* 2008) has revealed that the myriad of organisations involved in skills development in construction

results in a complexity of networks of supply provision that is difficult for construction companies to navigate. This weakness is compounded by the weak and fragmented nature of the social partners and by the lack of direct Ministerial responsibility for VET. Government policy seeks to create a 'demand-led' system which responds to employers needs at the same time as employers associations fragment and individual employers are reluctant to make training places available. In this situation, in the case of bricklaying, trade associations have come to play a key role in determining the nature and scope of qualifications, and indeed whether these should be awarded in the first place. Trade associations or industry trade groups are perhaps best known in the United States, being organizations founded and funded by businesses that operate in a specific industry and are primarily involved in public relations and lobbying activities and in standardization. In continental countries with a social market economy the role of trade associations is often taken by employers' organizations which also have a role in the social dialogue between trade unions and employers. Trade associations, however, differ in that they are not industry-wide organisations but seek to defend the specific trade interests of their members.

Finally, the FE colleges have become the key providers of VET for bricklaying trainees, whether these are apprentices or students on the ever-more important, though unrecognised, school-based route. There is an evident divide between FE and industry, between education and the labour process, one which is hardly bridged by ConstructionSkills, especially given changes in skill requirements and the development of a school-based route. Each route too into bricklaying - whether purely employer-based, apprentice-based, school-based with work experience, private training provider-based, or simply progressing up from labourer - implies a different constellation of funding. The sources include government (via LSC), the levy (via ConstructionSkills) and employers themselves.

The key contradiction in the system is that, whilst policy initiatives stemming in particular from the Leitch Review are leading inevitably to establishing a system closer to many continental countries, based on broadly-defined occupations recognised by qualifications at different levels, the way in which the scope and content of occupations such as bricklaying is actually determined remains largely trade-based, as does their remuneration. In other words, the contradiction can be regarded as arising from the co-existence of two systems, a traditional trade-based and an occupational one struggling to emerge and develop. We will examine later just how far the contradictions in the institutional structure in fact mirror contradictions in the labour process, with two types of bricklayer – the traditional tradesman and the more broadly-defined bricklaying occupation.

## **2. Vocational Education and Learning**

### ***Trainee numbers***

ConstructionSkills survey of apprentices showed that only 22% of trainees had at least five GCSE Grades A\*-C and the vast majority (84%) had at least five GCSE Grades A\*-G (ConstructionSkills 2003). Those with the higher grade school-leaving qualifications are more likely to leave than those with lower qualifications, given better career opportunities elsewhere. On site, workers' educational level and training is often not known, though NVQ and equivalent qualification levels are listed on the CSCS card, which has become the licence to practise for bricklayers.

In 2006 there were a total of 47,188 first year construction trainees in Britain, 9,959 or 21% of whom were bricklayers, representing 5% of the total number of 905,990 employed in the skilled trades (including bricklaying, the wood trades, painting & decorating, plastering &

drylining, roofing, flooring, glazing, electrical trades, and plumbing & HVAC trades) - 97,030 or 11% of who are bricklayers (CITB 2006b). As a proportion of employed bricklayers, first year bricklaying trainees constitute 9.2%, but trainees in the wood trades are only 5.5% of those employed in this area, plasterers and dry liners only 4.6%, painters and decorators 2.5%, roofers 1.4%, and floorers a shocking 0.9% (ConstructionSkills 2008). In terms of formal VET, a bricklayer in England should acquire an NVQ2 and if a 'craftsperson', as classified in the WRA for the Construction Industry a NVQ3; in Scotland the basic level is Level 3. However only 11% of all construction trainees entering different courses are at Level 3 and Level 2 is most common (60%), though the Leitch Review (2006) aspires to a more general achievement of Level 3; 17% of trainees are at Level 1 and 12% in technical occupations.

Until the recession, these first year entrant figures appeared grossly inadequate to meet the then projected average annual employment requirement. However, numerical estimates tend to mask the quality, nature, appropriateness, inclusiveness and adequacy of VET provision and to lag behind labour process needs. They also fail to take account of drop-out rates from college courses, higher than 40% for those in the main building trades, because many students struggle to cope with demands of basic numeracy and literacy skills, as well as complex theoretical aspects that are essential in delivering construction work (FEFC 2001; CITB 2004).

There is a high degree of informal learning for bricklaying: many simply learn on the job and then acquire an NVQ through what is known as the onsite training and assessment (OSAT) route, implying practical skills but no theory, whereby an experienced worker's card is obtained. OSAT is just assessment, rather than training. Thus, the NVQ is the critical qualification for the sector and for bricklaying. ConstructionSkills is running the 'qualified worker initiative' aimed at awarding NVQs, a precondition for the CSCS card, to the thousands of bricklayers without qualifications. For progression, it is possible to go to Level 3, 'hands on craft', funded by government and with an occupation work supervision element (e.g. 1 day per week). It is also possible to go from Level 3 craft to site supervision and Level 4. One leading college claims a progression rate of 75% in take up of level 3 NVQ qualifications last year from those who have achieved the Apprenticeship Framework at level 2. This is not a typical figure, however.

The NVQs for bricklaying have narrowed down substantially over the past 15 years. In the past, there would have been an overlap with other qualifications, including concreting, drainage and scaffolding, whereas now it is mostly laying bricks. This is in part because of changes in materials and techniques, for example with drainage, drains are mostly plastic whereas in the past it would be clay with mortar. On the other hand, there is a strong sense among employers that it is too narrow and no longer reflects the changing work processes. For example, for plastering, solid and fibre plasterers are currently separate NVQs, whereas it is felt that apprentices should have exposure to both. Many bricklayers also work with stone, though stonework is not included in the bricklaying NVQ, and they may also be required to build arches, though these are also no longer a requirement of the NVQ.

### ***Bricklaying Content:***

The NVQ Level 2 in bricklaying comprises 5 mandatory and 1 optional unit of a set of 7. The 5 mandatory units are:

- Conform to general workplace safety
- Conform to efficient work practices
- Move and handle resources
- Erect masonry structures
- Set out masonry structures

The optional units are:

- Erect masonry cladding
- Lay domestic drainage
- Erect thin joint masonry structures
- Place and finish non-specialist concrete
- Plaster and render surfaces
- Maintain slate and tile roofing
- Repair and maintain masonry structures

Each unit is described in terms of 'performance criteria' with 'scope of performance', and 'knowledge and understanding relating to performance criteria' and 'scope of knowledge and understanding'. For the unit 'Erect masonry structures' the scope of performance comprises: interpreting information such as drawings, specifications; complying with relevant legislation; selecting resources for the work; complying with organisational procedures (including maintaining a clean work environment and waste disposal); carrying out the work (measuring, marking out, laying, positioning and securing; using tools and equipment; erecting masonry in brick and block or local materials for cavity wall, blockwork or solid wall structures, door and window openings and joint finishes. The knowledge and understanding related to performance criteria refers to non-systematic knowledge such as relevant legislation and procedures; knowledge of materials, components and equipment; knowledge of methods, calculating quantities, lengths etc.; and application of knowledge to methods of work (for example, erecting walling, laying blocks, determining brick/block bonds, forming joint finishes, mixing mortar, using hand tools, etc.)

### ***Apprenticeships and Training programmes***

According to figures given to us by ConstructionSkills, in 2006/07, 24,000 apprentices were recruited across England, Scotland and Wales, the bulk of who were concentrated in four occupational areas: Carpentry; Bricklaying; Painting and Decorating; and Plastering. In England, there were 4,831 bricklaying apprentices, the vast majority of whom were at level 2. Many hundreds of construction apprentices are now losing their placements nationally due to the recession. For the whole of Construction, 81% of apprentices were recruited at Level 2, with very few apprentices enrolling directly on a Level 3 programme. About 20% progressed from the Level 2 to the Level 3 programme. The apprenticeship completion rate has been very low, with many apprentices dropping out once they have achieved the NVQ which enables them to obtain the CSCS card. The achievement rate for apprenticeships in 2006/07 was about 50% compared with 75% for NVQs only. It is very difficult to progress further than NVQ3 because Level 4 requires a considerable basis of underpinning knowledge and has an obligatory supervision requirement and because it is less and less common to move from the trade to site management and beyond, as graduates are increasingly recruited into such roles. In this respect bricklaying has significantly reduced permeability in comparison with in the past.

The content of apprenticeships has also been narrowed as it is mainly based on the NVQ and on the Construction Award which largely mirrors the NVQ in terms of the scope of tasks and provides the underpinning knowledge, although this will be broadened with the introduction of the new Diploma. The other components are so-called functional skills, widely regarded as a remedial instrument to address the poor literary and numeracy standards of many school leavers, and Employment Rights and Responsibilities, a compulsory unit aimed at preparing young people for entry into the labour market. Functional skills will replace Key Skills, which had a similar role. There is a view amongst the FE teaching community, however, that Key Skills could work successfully if tightly and fruitfully integrated into the vocational part of the apprenticeship framework and a concern that this would no longer be possible with

Functional Skills. Apprenticeships require an employment and an off-the-job element, the latter being provided through a mixture of day- and block release (in the first year there would typically be block release). Smaller firms tend to prefer day to block release, while both pedagogically and in terms of the efficient use of resources, Colleges favour block release. The pedagogical approach is 'formative', with a focus on getting students through the assessments through detailed coaching and feedback. Learners can take tests or have their workplace observations as many times as is necessary for them to pass.

There has been a persistent problem with finding employers willing to provide training places. This is in large part a function of the structure of the labour market, with contractors contracting out the work to labour-only subcontractors, and the practice of bogus self-employment persists – and is especially common within bricklaying. The situation has been aggravated by the recession and Construction Skills abandoned a plan to take on an additional 7,000 apprentices. Good training schemes are vastly oversubscribed and of the 50,000 applicants for construction apprenticeships in 2007, only 7,200 actually succeeded in being placed with employers in the industry (Blackman 2007). The alternative is the school-based route, going to an FE college and following a bricklaying course for one or two years, perhaps on unemployed status (16 hours per week which can be maximised to 22 hours in a 35 week academic year), and acquiring at the end a Construction Award (ICA) (now being reformed into a 'Diploma'). Many take this route in order to avoid unemployment, to learn a trade and to develop a career in construction. Over 70% of first year trainees at Level 1 are studying for Construction Awards rather than a work-based qualification; nearly 40% of Level 2 and 40% of Level 3 (ConstructionSkills 2006a). If a work placement is then acquired, it is possible to seek an NVQ2 qualification, and even progress to NVQ3. The vast majority following this route are, however, unable to find the necessary work placement; indeed of 16,751 Construction Awards only 3,290 or 20% achieved a work experience placement. Colleges will go to considerable lengths to ensure that full time students obtain sufficient workplace experience to qualify for an NVQ, but it can be difficult to ensure this (ConstructionSkills 2006a).

In 2007, 21,400 learners completed the ICA in England, Wales and Northern Ireland, but only 10,000 of these (less than 50%) completed the qualification as part of an apprenticeship. Of those, Construction Skills recruited 270 onto an apprenticeship by introducing 'Programmed Pathways', a scheme which accesses extra government funding to place trainees with ICA qualifications with employers and which is promoted to employers on the basis of providing an accelerated route to an NVQ because of the prior knowledge trainees possess.

Other VET qualifications related to bricklaying are the 14-19 Diploma in Construction and the Built Environment (at level 2 or 3), and the Young Apprenticeship scheme (level 2). Young people can choose these from the age of 14 as an alternative to purely academic study (GCSEs). The Young Apprenticeship means spending 2 days per week on a level 2 qualification such as BTEC plus 50 days work experience. There are currently 4,000 learners on young apprenticeships. As well as being used in FE Colleges instead of Construction Awards, 14-19 Diplomas in a range of occupational fields are also being introduced into mainstream schooling (the Diploma in Construction and the Built Environment being in the first tranche of five introduced in 2008). They are a mixture of academic and applied learning and the idea is not to prepare them for a particular occupation but learning in a context about a particular sector, so as to make learning more interesting. There is also a specialised learning option (e.g. a BTEC) if the young person is interested in entering the industry. BTEC qualifications at levels 2 and 3 place considerable emphasis on underpinning knowledge of the industrial sector.

### ***Training provision***

FE Colleges can be well-equipped with workshops and classrooms; indeed there has in recent years been a significant investment in college buildings, though this has now been curtailed. The FE College also monitors the activities carried out in the workplace, through the requirement to build up a portfolio for the NVQ. For apprenticeships, the managing agent, which may be, for instance, the FE College or ConstructionSkills, also ensures that the portfolio is completed, though there may be problems related to the narrowness of the activities carried out by a particular firm. In this respect, the narrowness of the bricklaying qualification may be an advantage as it will not compromise the learners' ability to acquire the NVQ.

### ***Summary***

What we observe, therefore, from bricklaying VET is a recognisable division between the school-based and the work-based route associated with apprenticeships, with increasing concentration on the former given the difficulties of finding training places with employers. The school-based route is however plagued by high drop out rates and has to traverse the difficult bridge between college and industry. It does however imply a greater emphasis on education and qualifications and at the same time a divide between, on the one hand, college-based awards and diplomas and, on the other, the NVQ element.

VET itself is restricted to bricklaying, without covering other related occupations or providing an overview of the construction industry as a whole. In this respect it is trade-based. It is focussed on outputs and performance and narrow, with restricted transferability and permeability, especially as many elements - though these may be needed in the workplace - are no longer covered, including erecting arches and stonework, and as progression above NVQ Level 3 is much more difficult than in the past. However, the introduction of Diplomas at levels 2 and 3 to replace the old awards, with their emphasis on sectors, may start to reverse this narrowness and provide bricklayers with a range of broad underpinning knowledge.

## **3. Qualifications**

The key qualification for entry into employment in bricklaying is the NVQ Level 2. The NVQ is not in itself linked to a curriculum or a process of learning but is awarded on the basis of an assessment of existing skills in working conditions. NVQs are comprised of certain combinations of units of competence (compulsory and mandatory). The units describe particular areas of activity in the workplace, which are then broken down further into detailed lists of tasks (the 'elements of competence' here referred to as 'scope of performance') with performance criteria. The units constitute the occupational standards which are derived from a detailed analysis of workplace tasks, which then in turn determine the elements of competence. The elements of competence are the learning outcomes.

The NVQ approach epitomises the outcomes-based approach in which each individual task required of the learner is narrowly defined and individually assessed by way of observation by an assessor of the learner's performance of that task. Performance criteria relate to a scope of performance (also referred to as 'elements of competence') and to knowledge and understanding deemed necessary for the performance of the task. In the assessment-led approach, the mastering of that knowledge and understanding is assumed to be evident in the successful performance of the task.

The apprenticeship is not a qualification in itself but a label for a set of qualifications: the NVQ, the technical certificate (the theoretical component), functional skills, and employment rights and responsibilities. The technical certificate is taught in college on the basis of a curriculum. The curriculum is based on the occupational standards and mirrors the NVQ, although the content will be significantly broader with the introduction of the new Diploma. The assessment for both the NVQ and the technical certificate is ‘criterion-based’ (i.e., the learning outcomes and assessment criteria are clearly defined) in order to increase the transparency of and access to qualifications. However, the focus on assessment at the expense of quality learning has been widely criticised (Torrance et al. 2005).

### ***Role of occupational standards***

ConstructionSkills develops the standards for the NVQ, which are reviewed every 4 or 5 years. This process involves a functional analysis, identifying the key functions within bricklaying and formulating these as national occupational standards (CITB 2006a). The occupational standard units for bricklaying include:

Unit Nos. VR 01 & 02	Conform to general workplace safety and efficient work practices
Unit No. VR 03	Move and handle resources
Unit No VR 36	Prepare and mix concrete and mortars
Unit No. VR 37	Lay bricks and blocks to line
Unit Nos. VR 38, 41, 48	Contribute to setting out basic masonry structures, set out masonry and complex masonry structures
Unit No. VR 39	Joint brick and block structures
Unit Nos. VR 40, 44, 49	Erect masonry structures, thin joint masonry structures, complex masonry structures
Unit No. 42	Erect masonry cladding
Unit No. VR 43	Lay domestic drainage
Unit No. VR 45	Place and finish non-specialist concrete
Unit No. 46	Plaster and render surfaces
Unit No. 47	Maintain slate and tile roofing
Unit No. VR 50	Repair and maintain masonry structures
Unit No. VR 209, 211	Confirm work activities and resources for the work and occupational method
Unit No. VR 210	Develop and maintain good working relationships

Each occupational standard comprises:

- A unit title (the standard)
- A unit description
- Performance criteria
- Scope of performance
- Knowledge and understanding relating to performance criteria
- Scope of knowledge and understanding.

Examples from each of these relating to Unit VR 01, *Conform to Workplace Safety* are:

Unit description	Awareness of relevant current statutory requirements and official guidance
Performance criteria	Identify hazards associated with the workplace and record and report in accordance with organisational procedure
Scope of performance	Hazards, associated with the workplace and occupations at work, are recorded and/or reported

Knowledge and understanding relating to performance criteria	<ul style="list-style-type: none"> <li>• The hazards associated with the occupational area</li> <li>• The methods of reporting hazards in the workplace</li> </ul>
Scope of knowledge and understanding.	<ul style="list-style-type: none"> <li>• Hazards associated with the occupational area</li> <li>• Organisational recording procedures and statutory requirements</li> </ul>

Units will also vary according to the level:

NVQ Level	Mandatory Units	Optional Units
1	VR 01, 03, 36, 37	VR 38, 39
2	VR 01*, 02, 03*, 40, 41	VR 42, 43, 44, 45, 46, 47
3	VR 01*, 209, 210, 211, 40*, 41*, 48, 49	VR 42*, 43*, 44*, 46*, 47*

\* = included in lower level.

Some units (e.g. VR 01 – *Conform to Workplace Safety*) appear at each level, whilst others – usually related to complexity – only appear at higher levels. For instance, *Set out complex masonry structures* first appears at Level 3, whilst *Set out masonry structures* is at both Levels 2 and 3 (CITB 2006b). The aim to ensure that the average person can achieve the NVQ must be based on general units (what every bricklayer should be able to do) and then on top of that there can be additional units, e.g. doing arches, restoration.

NVQs are derived from occupational standards and then valid for 5 years. Currently the management system for NVQs is termed Magenta and (unlike previous systems) allows for rolling development. This means that the NVQ can be changed if it can be proven that there is a problem. As a result it should reflect changes in the role of the ‘jobholder’ (CC). The employer representative interviewed, who chairs an occupational working group reviewing the occupational standards for NVQ level 3 and 4 in construction Site Supervision, well described the basis on which standards are drawn up. For this review, the group looks at what performance the person should be doing and the range of activities. NOS are then produced with a recommended framework which is then taken on by awarding bodies to construct their own NVQs. Our interviewee explained that many employers cannot articulate what it is they do.

### ***Certification***

‘Qualification’ was equated by the CC (employer) representative with certification, ‘a certified competence’, which might be narrow and is not necessarily the end result of a learning process. Currently about 800,000 (out of a construction workforce of c. 2m) have a CSCS card and this is increasingly a requirement to work on sites. It is a certificate that is based on on-site assessment of acquired skills, intended to recognise these at the relevant NVQ level. Cards are divided according to different categories, equated with different qualification levels. It also goes together with a health and safety test. It is not though about training. For the use of plant, separate CPCS (Construction Plant Certification Scheme) certificates – now also linked to NVQs - are needed for each piece of machinery driven (probably 5 different ones in the case of a road operative). To obtain a certificate, initial training is required plus about 300 hours experience on each machine to ensure competency.

### ***Changes to the qualifications***

Existing qualifications are being transferred from the NQF to the QCF. This involves dividing them into smaller units which carry credits, so as to provide for greater flexibility in terms of the pace and timing of learning, specialisation and the transfer of credits across qualifications.

They are also being relabelled, ostensibly to simplify the system, according to the number of credits they carry as Awards, Certificates, and Diplomas. There is more scope for organisations other than awarding bodies and SSCs to put forward their own qualifications. In the absence of a robust statutory framework, the danger is that qualifications such as NVQs will be fragmented further, resulting in even greater narrowness and variability between training providers. Within apprenticeship frameworks, providers can choose how much emphasis to put on practice or theory, as long as the required number of credits is achieved. As all bricklaying qualifications will be renamed 'diplomas' there will be confusion over the different components. The QCS foresees that existing qualifications can be accredited through the Accreditation of Prior Learning (APL) and may count towards the new qualifications.

ConstructionSkills predicts that numbers of bricklayers will be declining rapidly over the coming years as a result of modern methods of construction, such as off-site manufacturing of frame structures. Some employers complain too that apprenticeships frameworks no longer meet their skill requirements, with NVQs being either too narrow or outdated in terms of the areas they cover. ConstructionSkills has set up a skills unit to look at developing new qualifications to meet these needs (for example, building frame structures).

### *Summary*

The bricklaying qualification therefore is essentially skill-based, broken into units which describe particular activities and tasks, known as 'elements of competence' and representing learning outcomes. These units at the same time constitute occupational standards derived from analysis of workplace tasks. The transfer from NQF to QCF will involve further fragmentation into smaller units. All this is very confusing and raises the question of what really distinguishes learning outcomes, performance criteria and occupational standards, given that each refers to particular workplace activities.

The qualification too is split into three elements - the college curriculum-based technical element, drawn from occupational standards; functional skills; and employment rights and responsibilities – with the NVQ itself gained through work experience. However, given that each NVQ level is stand-alone, it does not presuppose the lower level and is not therefore necessarily based on progression. This weakness in progression is inevitable, given that the qualification is built on output and performance in the workplace rather than on the development of the individual. There are nevertheless, as apparent from the units above, some presupposed units implying a curriculum, with level 3 only needing 209-11 plus 40, 48 and 49, and not obliged to take certain safety units.

## **4. Knowledge, Skills, Competence**

The term competence is strongly associated with the NVQ system and commonly refers to the 'competent' performance of a task or skill, i.e. according to the prescribed criteria.

NVQs consist of 'elements of competence' considered necessary for a particular job/task. Elements of competence (the possession of which make somebody competent) constitute the learning outcomes, which are described in terms of practical skills and related knowledge and understanding.

With the introduction of NVQs there has been a significant narrowing down of the notion of 'skills', rendering them less generic and more utilitarian (ConstructionSkills). This restricted notion is endorsed by ConstructionSkills in its claim that 'skills are appropriate to what people need to know'. The approach is epitomised by the way 'Skills Academies' are being

set up for the industry as part of specific employer construction projects, built on short-term needs, and focused on producing specific project skills identified by mapping supply and demand. The skills produced are as a result very narrow, and task- and firm-specific, including for instance learning to drive a fork-lift truck. Skills needed for different functions (e.g. ground works) are identified and compared with the skills available and the Academies will then concentrate on training people to fill the gaps. For example, the employer will train say, 15 ground workers on the job over a certain period of the duration of the project and pay 50% whilst the LSC contributes the other 50%. Colleges will be involved to provide their expertise while the Skills Academies provide the skills to feed into the project. This illustrates the English meaning of learning outcomes, i.e. outcomes defined in relation to performance in terms of immediate employer skills needs.

ConstructionSkills distinguishes between ‘skill’ (workmanship, including pride and integrity) and ‘skills’. Having skills does not mean people will apply them. The government takes qualifications (NVQs) as a measure of skills/ skills levels.

The CECA representative explained that ‘you need skills to be able to do the job’, whilst competence is ‘being able to do it to the standard required, with minimal supervision (to put up a wall in a straight line)’. The journey to competence was described as one to ‘unconscious-competent’ or being able to do the job without having to think about underpinning knowledge and rules, which in turn implies true competence. In this way competence is understood in purely practical terms, as also reaffirmed by other interviewees; ‘skill’ and ‘competence’ were thus generally seen as synonymous. As UCATT explained: “A skilled and competent bricklayer is somebody who has done an NVQ Level 3, has acquired and practised on site in the real work situation all the various bricklaying skills and is therefore a bricklaying craftsman.”

### ***Knowledge application***

Though this is likely to change with the introduction of the new Diplomas, there is relatively little underpinning knowledge required for the existing qualification, the knowledge element being primarily practical and based on on-the-job learning. The principle of apprenticeships is that college-based work (theory & practice) is translated into work experience through work placements. The theoretical element mirrors the NVQs (i.e. the tasks or skills) and constitutes largely applied knowledge. There is also relatively little emphasis on process/method competences, that is on how to carry out the work, and no competence/knowledge of overlapping areas with other occupations in terms of training.

Interviewees generally had a minimalist notion of knowledge related to bricklayers, captured in the notion of ‘skill’: knowledge only as far as is necessary to underpin performance of narrowly defined tasks. As expressed by the CECA: ‘You gain knowledge to be able to do the role that you are employed to do.’ Whilst there are questions for testing knowledge as part of the NVQ and knowledge is assessed with respect to the technical certificate, having knowledge is assumed as underpinning the performance of the task. Though most trainees are desperate to learn, wider knowledge is often deemed unnecessary especially in low quality courses of weaker training providers and where funding and planning are deficient. It may even be assumed that this approach suits young people (‘anti-learning culture’) and that underpinning knowledge is no longer valued or regarded as necessary (within the NVQ system). A NVQ just says ‘you can do this’, the fact that you know or can apply knowledge is not necessarily teased out. Our ConstructionSkills interviewee considered that underpinning knowledge is no longer valued in the way it used to be. In the past, for instance, carpenters had to know about how the wood grows – this is no longer so. NVQs rely on the performance of specific skills/tasks. The move to an outcomes-based approach has therefore involved

ironing out the ‘nice to know but not necessary to know’. What people need to know is captured by the notion of ‘skills’ – to underpin the performance of narrow tasks. Minimal underpinning knowledge is learnt on the job, but not made explicit. Colleges are seen as responsible for teaching theoretical and practical knowledge (as part of apprenticeships), but ConstructionSkills claims that this is an ‘add-on’; what counts is practical experience. The CECA employer representative, however, stressed that the industry as a whole prefers people with wider theoretical knowledge.

The FE College head interviewed described the difficulty in maintaining skill levels. In the 1990s a master crafts course (L4/5) had been developed in the college, consisting of a lot of the content covered in a 1970s apprenticeship. Now with the new qualifications this course has gone, though a carving course has been developed as a Higher Professional Diploma (C&G L 4) just to give the College a forum within which to develop the skills traditionally delivered. Under the 1970s Standard Training Scheme there were, for instance, 3 hour geometry lessons. The view was taken, why? What’s the point? Why have you got Level 2 carpenters developing truncated pyramids? The head of the FE College remarked: ‘A bit daft isn’t it? So obviously the content has been reduced quite substantially.’ However, he showed us pieces done by L4 students and remarked that he would in the past have expected this of someone in his/her 3<sup>rd</sup> year, or the equivalent of L3.

When asked about the knowledge component in relation to bricklaying, the FE College head referred to the knowledge test set by City & Guilds, which students have to pass in order to gain the qualification. He explained though that the term ‘knowledge’ is not used that much anymore; instead they refer to ‘technical understanding’ and ‘skills’ is the main term they would use, including ‘knowledge skills’ as well as ‘technical skills’. He has become convinced in recent years that the delivery of theoretical knowledge in classrooms is a very inefficient way of creating understanding/ learning, the retention and understanding of substantial information given in a 1 ½ hour lesson being very low. The College is seeking to integrate the theoretical and the practical areas of the course more fully, in particular through establishing training site facilities. This has been possible to some extent in the area of bricklaying. One of the things the OFSTED inspector was looking for was ‘relating practical work to theory, and relating theory to practical work’.

The training site was seen to facilitate the translation of theoretical into practical knowledge by matching the theoretical schemes and the practical schemes at work, so that they do not run in isolation from each other. The theory is also integrated as much as possible into the practical sessions, for instance by doing graphical work - set out full size in the workshop - in the practical sessions, rather than trying to set up a drawing board in a theory session. The bricklayers are setting out and working a lot from graphical job sheets, which actually show them the job. They want to create an ethos, whereby they focus on the practical work, pulling out and applying the theory that is needed. Then there is the element of additional knowledge, which is not officially categorised as added value. The College seeks to give added value to the students beyond the actual requirements of the course, by for example introducing them to lime and mortars, so they are a little bit more equipped for when they go on site, and introducing them to other techniques available.

### ***Competences/skills***

Social competences (civic dimension, ability to work in teams, to communicate) are not part of NVQ competencies, or part of any training. Team work is considered important, but best learnt on the job, as part of a team (CECA). The general view expressed, for instance by the BDA, is that social competences should not be part of VET as the trainees are not interested as all they are trying to do is to find a way to earn money. By social competence is understood

‘the business of behaviour, and your attitude towards life and how you conduct yourself’ (BDA). Communication skills, team-working, problem-solving are however seen as vitally important. The BDA has produced a DVD called ‘Get a life with brick’, which goes round to schools which was underpinned by research which showed that all the youngsters wanted to know was how much money they could make.

The FE College referred to tutorials and individual learning plans as important to developing personal attributes. Individual learning plans contain targets for students to do with self-management, meeting their goals, but also managing their behaviour. Students also have weekly planners which are there to plan the work for the week. They also very often work in groups, supporting each other, developing ideas, learning from each other, and working through material themselves, rather than having didactic lectures. Officially personal attributes are however not part of training. They are interpreted as those attributes that make people attractive to an employer: turning up sober, turning up prepared for work, trying ‘to get ahead’ (CECA).

### ***Bricklaying knowledge***

The FE college head considered that there has been little change in what bricklayers are expected to do in the workplace. For example, with arching brickwork you would have an experienced, competent worker doing it. With an apprenticeship wider theoretical knowledge is imparted through the colleges – block- or day-release. Students need the underpinning knowledge for the NVQ, but how this is interpreted in terms of curricula is down to the colleges who develop curricula based on the NVQ-defined outcomes. The employer organisation however claimed that industry as a whole would prefer wider theoretical knowledge (e.g. understanding of different materials, the impact of temperature).

General industrial knowledge is not part of NVQs, though proposals for this have been made to ConstructionSkills), which would need to be accepted by the industry. The CECA representative explained that at a basic level bricklayers are expected to lay bricks, but that ideally they also have an understanding of their position in the work process, the interface with other processes, where the door-fitter and glazier come in, though not necessarily an understanding of how the door will be fitted.

### ***Summary***

The notion of competence development applied in many continental countries - drawing on multiple resources involving the whole person and enabling learners to become autonomous and innovative – appears less prominent in the English situation, particularly with respect to NVQs. Here lifelong learning in practice constitutes the accumulation of skills in relation to particular jobs or tasks, rather than a more holistic career development which includes professional as well as personal growth. An important aspect of the English qualification is the relationship assumed between theoretical and practical knowledge. In the context of low theoretical content, narrow skills and relatively reduced levels of general education, people tend to perform to standards defined by employers and other dimensions of competence, such as social and personal competencies, are neither required nor recognised.

The danger with such a system, based on and bounded by a ‘skills’-based approach, is that it may simply perpetuate a low-skilled labour-intensive economy, as employers continue to build on traditional skills, ‘the skills of yesterday’, thus restricting the capacity for the development of new skills areas (Clarke and Winch 2004: 515). This is of particular significance in the light of the Leitch Review of Skills (2006), which recognised the crucial

importance of upgrading the UK skills base, and of the recent report on the difficulties in progress towards this by the UK Commission for Employment and Skills (2009).

## **5. Utilisation of labour**

### *A varied sector*

The UK construction sector is very diverse, accounting for approximately 10% of Gross Domestic Product and employing nearly 1.9m people though, using SIC (Standard Industrial Classification) categories 45 and 74.2, Construction Skills (2009) estimates employment of 2.5 m. in 2009 (BERR 2008a; Briscoe 2006a, b). After a sharp decline in activity in the early 1990s, construction output steadily increased from £60 billion in the mid-1990s, to reach £83 billion in 2007. Repair and maintenance (R&M), including housing improvements, many of which are carried out by small or one-person firms, account for 43% of this output, whilst housing represents 39%. As a proportion of new work, however, housing is 31%, whilst private industrial and commercial output represents 43% and infrastructure 11%. There are significant regional variations in output, with large concentrations in London and the South-East, though there are pockets of high activity in other regions, including in the South-west and the Midlands.

Some of the different sectors into which construction is divided are significantly more regulated and demanding in terms of formal VET and qualifications than others. Most demanding and covered by highly regulated collective agreements are the mechanical and electrical (M&E) and engineering construction sectors, the latter concerned with large projects such as power stations and oil refineries. The building sector, embracing housebuilding and the traditional 'wet' and 'dry' trades such as roofing, carpentry, bricklaying, plastering, painting and decorating, and glazing, is much less regulated and demanding, except in certain specialist areas such as exhibition work and shopfitting. The civil engineering sector is perhaps the least demanding in a formal sense, the wage being still to all intents and purposes constructed around the status of the labourer, with 'plus rates' accorded for working in particular areas.

The output of the industry is very varied, implying also a varied deployment of bricklaying labour and skills. The industry is more labour-intensive and unproductive than other leading European countries, as evident from detailed comparative studies of housebuilding sites, which showed that 39% more labour was required to produce one square metre in England, compared with Germany and 50% compared with Denmark (Clarke and Herrmann 2004a). An authoritative analysis of research projects across Europe placed UK 55% on its resource-use benchmarking index, compared to 69% for Germany and 72% for Denmark (BWA 2006). The report emphasised the UK's poor record in terms of investment in research and development and training, 'exacerbated by extensive sub-contracting', and the fact that 'low labour rates and efficiency do not go together'. This analysis is supported by a series of reports prepared over the last 50 years which, according to the Comptroller and Auditor General (2001):

“.... have identified a lack of serious and sustained commitment to education, training, safety and research and in particular the low levels of commitment to serious skills development.... leading to consistently low levels of performance in areas such as cost, time, quality, running costs and fitness for the end user.”

Of the industry's 186,000 private contracting companies over 93% have fewer than 13 employees, though accounting for only 37% of direct employment and 20% of the value of private contractors' work done (BERR 2008a). Firms employing over 600 account for 18% of

employment and 26% of work done, and have significantly declined in number, as have the medium-sized firms. The largest companies are relatively small in global terms, the highest placed UK contractor being thirteenth in a league of European contractors based on turnover. A high proportion of contractors' output, too, rather than being carried out directly, is subcontracted, estimated at about 65%, or more than double that in other leading European countries (e.g. Clarke and Herrmann 2004b). Many bricklayers are employed in housebuilding, laying facing bricks and blocks, and employed by labour-only subcontractors of varying size (some may have over a hundred on their books). 85% of the construction industry comprises such SMEs, acting as subcontractors, many not able or willing to train but simply seeking someone with relevant knowledge and skills.

### ***Trade, occupation and specialisation***

One of the problems with the English system is the often fluid nature of the terminology employed and the compounding of the terms task, job, occupation and trade. The term *task*, for instance, refers to specific activities that someone may undertake, such as sawing wood or assembling a frame. *Job*, on the other hand, refers to the particular individual employment contract to work for a particular firm. To say that so and so's *job* is to install kitchens is to specify a range of *tasks* to perform as part of their employment contract for a particular firm. *Occupation*, on the other hand, refers to the category of labour that carries out such work; a block layer for instance may also belong to the *occupation* of bricklaying. A bricklayer, therefore, could be employed in a series of different *jobs*, including laying bricks and blocks, trade foreman, paving, drainlaying, concreting and even stonemasonry – to name but a few. Each of these would involve an array of *tasks*; for instance, laying bricks and blocks might require mixing mortar, erecting walls, corners and arches, and snagging work.

The largest group of manual construction workers is in the wood trades (19.7% of the total operative workforce), above all carpentry and joinery with approximately 270,000 employed, to be found in joinery installation, general construction of buildings and civil engineering works (e.g. shuttering) and the erection of roof coverings and frames, as well as elsewhere, such as in exhibition work. Carpenters are followed by two other traditional trades, bricklayers (7%) and painters and decorators (9.1%), and these together with roofers (2.8%), floorers (2.9%), and plasterers and dryliners (3%) make up 45% of the manual trades. Plant operatives (3%) and other civil engineering operatives (4.1%) together constitute a significant and growing part of the manual workforce (ConstructionSkills 2008).

Three trades are identified for the UK by NARIC (responsible for recognising and mapping overseas qualifications and competences) with respect to Stonemasonry and Bricklaying: bricklayer, general construction operative and stonemason (CITB 2006c). ConstructionSkills has been working with NARIC on assessing skills in other countries (e.g. Poland), looking at the curriculum and matching skills to the English system on a bilateral basis. There are different requirements for bricklayers across Europe e.g. Italy has 2 different systems – north and south; NL has a more integrated system than elsewhere. In England, there are significant differences within the occupation of bricklaying depending on the sector of construction, in particular between housebuilding and commercial work. In the traditional private housebuilding sector – a sector particularly affected by the current crisis - activities undertaken most closely match those in the bricklayer NVQ, being largely confined to laying bricks and blocks. For commercial activity, bricklayers may be required to carry out a much wider range of activities, including working with stone and concrete, erecting arches, and using sophisticated bonds. A key test of bricklayers' skills may be whether they can set out, read drawings and be versatile, such as putting up terracotta or aluminium rain screens, doing tiling and ceramic work. There are some changes evident in bricklaying activity, in particular in terms of the setting which, with thin joint systems, can be much quicker.

Bricklaying in England is often rather narrow, involving specialist skills, and in this respect, despite its shortcomings, the training is rather broader. The degree of specialisation required can however vary according to the level of activity. As explained by the UCATT representative interviewed:

Everything is getting narrowed down; the employer wants to hive things off in a boom environment ... But then when the downturn comes, he wants an all-round person with the full complement of skills, not so specialist. The same with a bricklayer, things were hived off so you could have people who could do the corners, or run the brickwork, or you could have a blocklayer who just set blocks. He tried to hive each aspect of the occupation and dilute it into certain categories for their own needs and benefits. But when it comes to the environment now, they want someone who can do it all, do the corners, the facing...

This is one reason why the union is demanding NVQ3 as a minimum standard and why the representative interviewed was open to bricklayers also covering stonemasonry. In many parts of the country (e.g. Scotland and Yorkshire) bricklayers would anyway be working with stone, which involves less manual handling. On Skills Build the stonemasons and bricklayers will though be totally separate, with the stonemasons, for instance, using use electric chisels to do gargoyles whilst the bricklayers are doing arches etc. This UCATT representative considered:

There's enough in bricklaying as a skill to retain it as a full occupation. There's no substitute for brickwork in terms of weather, the environment

### ***Employment and working conditions***

The most common causes of injury are from: being struck by a moving object; handling, lifting or carrying; slipping, tripping or falling from the same level or from a height (HSE 2008). In an occupational health pilot involving 1,300 health checks on construction workers in the Leicestershire area in 2006, run by the Constructing Better Health (CBH) Campaign, one-third had to be referred to their GP or optician, 30% had noise-induced hearing loss, 3% hand/arm vibration, and a few muscular skeletal problems (Clarke et al 2009). Throughout Europe masons/bricklayers are especially vulnerable with respect to health and safety, including the risks of working at heights and working with cement - which can cause severe dermatitis. Bricklayers experience many accidents, back injuries, slip discs, heart problems and RSI due to lifting heavy blocks; 1 in 10 in Britain are invalidated out of the industry. Bricklaying is physically demanding and means working in difficult weather conditions. Health and safety problems can however be solved with particular equipment and awareness, in other words through training. One big change is also that the hod carrier has finally disappeared in Britain, largely due to health and safety considerations.

All skilled bricklayers come with their own tools (not the labourers), in continued accordance with their role as 'tradesmen', and these provide a good indicator of the activities which bricklayers are expected to fulfil and of skills and experience; some may, for instance, turn up with the wrong equipment. Tools expected usually include a level, trowel, hammer and bolster, tape, a set of lines and pins, and a jointer – though firms themselves may provide the latter. People do use different tools, with some, for instance, preferring metal jointers. The total cost of the tools is about £150. People are judged by the tools they have and how they look after them, clean the level and the trowel. More specialised equipment and materials are provided by the firm, whilst the bricks themselves are usually provided by the main contractor.

The social status of bricklaying is not as high as in the past and carpenters are far more likely than bricklayers to go on to become site managers. Registration though the CSCS card is

seen, particularly by the trade unions, as key to improving status and giving bricklayers ‘an identity’ and a number of trade union representatives are involved in CSCS site inductions. However, the industry is beset by casual and self-employment and exploitative and even illegal practices, including the blacklisting of those active in trade unions (Cremers and Janssen 2006). A disproportionately high proportion are classified as ‘self-employed’, including migrants, though these may be working side by side with directly employed and doing the same work (Briscoe et al 2000; Harvey and Behling 2008). The self-employed number nearly 750,000, or an estimated 48% of operatives in 2007, though even the Labour Force Survey - the most reliable source of data — does not address the nature of self employment adequately (Briscoe 2006a; BERR 2008a). A recent report concludes that, of these, approximately 58% are ‘falsely’ self-employed, in the sense that the engaged worker would be deemed directly employed by normal legal tests and the remaining 42% ‘genuinely’ self-employed (Harvey and Behling 2008). The majority of those classified as self-employed possess a special CIS (Construction Industry Scheme) tax certificate issued by the Inland Revenue, of which 1.9 million have been issued since the scheme began (Blackman 2007). This allows employers to deduct workers’ tax at source whilst still registered as self-employed and does not require employers to pay National Insurance. It is a system especially prevalent in bricklaying, which is often dubbed ‘bogus’ self-employment, is unique to the construction sector, and subject to considerable criticism due in part to the devastating and long-term impact it has had on training in the industry (Harvey 2002 and 2008; Clarke and Wall 1998).

Under the traditional apprenticeship people simply learnt on the job in order to work in the trade for life. This is no longer the case though the majority of those employed in the trade still came into it originally through starting on site, whether recruited through word of mouth or through the family e.g. a son. However, today as so many bricklayers are ‘self-employed’, provided by agencies and working with labour-only subcontractors, this route is difficult as employment is with those who are unlikely to train. In general too the average age of bricklayers is increasing.

### ***Skills shortages and migrants***

Bricklaying is one of the construction trades most affected by skills shortages, particularly in more skilled areas such as heritage work. The CITB survey (2002) and a survey of the social housing sector revealed high levels of recruitment difficulties for the main trades of bricklaying, carpentry and joinery and plastering (Clarke and Herrmann 2007). A large proportion of housebuilding firms was unable to fill at least half of its vacancies for bricklayers (41%), managers and senior officials (40%), carpenters and joiners (40%), supervisors (31%) and professionals (25%). All these are occupations requiring some element of training and experience.

Skills shortages are largely dealt with not by training but by bringing in migrants. A survey (Murdoch 2008) for the National Specialist Contractors’ Council revealed that 3% of respondents’ workforces are made up of Polish workers. All of the available evidence suggests that the number of migrant workers in the construction labour market is significantly higher than official labour market statistics suggest (Fitzgerald 2007; Pollard *et al.* 2008). Lillie and Greer (2007) estimated the share of migrants operating within the sector to be as high as 10%, based on interviews with unionists and employer association representatives, and due in part to the ease of obtaining legal employment as ‘free’ agents in comparison with some other EU states. Stewart (2007) suggests that the sector is the most popular for male migrants from Eastern Europe; the construction union UCATT suggests that as many as 350,000 Poles were working in UK construction in 2007 (Bolger 2008). Labour Force Survey data confirms higher proportions of migrants in lower positions, whether as labourers (8.9%

non-UK born) or in arguably lesser skilled trades such as painting and decorating (8.2% non-UK born), though significant numbers of migrants (3,242) are recorded as carpenters and joiners (6.1% non-UK born). In a recent interview for a Nuffield Foundation project (Nuffield 2009), one of the largest bricklaying subcontractors in Europe, employing approximately 800 weekly paid operatives, attributed the origins of the workforce as follows: 60% UK, 25% East European, 5% rest of Europe; 5% Caribbean; and 5% Africa.

Many migrants have self-employed status, are provided by agencies and may be classified as labourers even if working in areas such as bricklaying. For instance, a bricklayer from Poland just needs to do a CSCS health and safety test and can acquire a CIS self-employed tax certificate from the local tax office. ConstructionSkills even proposed to set up a CSCS centre in Poland. CECA claimed that employers do not necessarily find Polish workers better skilled but 'harder workers'. They are generally recruited through word-of mouth, one recommending another. Bricklayers who apply for a job are unlikely to be asked about their training, only for a CSCS card. At a European level, EFBWW pointed to the tendency in different countries to try and ensure that they get skilled workers, e.g. through a certification scheme. However, CSCS is generally regarded as 'too easy'.

### *Summary*

From this account we can begin to discern two different types of bricklaying. The first is a specialist trade, associated with the traditional housebuilding sector and with a relatively narrow skills set largely confined to laying bricks, for which the current NVQ is in many respects an appropriate qualification, but which is less utilised in the current recession, especially given that output in the housebuilding sector has dramatically fallen. The second is an emerging occupation, with more broadly-based and transferable skills and greater underpinning knowledge, more adept - as with the new Diplomas being put in place - at undertaking a range of activities not necessarily just associated with brick.

## **6. Currency of qualification**

According to official statistics, there are significant differences in earnings according to occupation, with bricklayers earning an average £459 per week in 2007, carpenters and joiners £458, and labourers £390 (BERR 2008a). The earnings differential between skilled and semi/unskilled manual workers has also been widening: labourers earned on average 17% less per week (23% less per hour) than bricklayers and carpenters and joiners. Over a decade ago in 1996, the weekly differential between a labourer's weekly earnings and a bricklayer's and a joiner's weekly earnings was only 7% and 11% respectively. The increasing differential between skilled workers and labourers is significant with respect to migrants, are frequently found as labourers. These earnings are higher than the collectively agreed rates in the WRA, which were, even in June 2006, still only £274 for a 39 hour week and 701p per hour for the lowest skill level of General Operative, though the highest skill 'Craft' Rate was £363 per week and 932p per hour (CIJC 2006).

The CIJC WRA covers craft (skilled) rates and labourers' rates (CIJC 2005). The actual grades and rates for 2005 classified in descending order (from low to high skilled) are:

<b>Classification</b>	<b>Basic pay per hour (pence)</b>
• General operative	577
• Skill rate	
○ 4	621
○ 3	659
○ 2	704

- 1 730
- Craft rate 767

This is not a graded structure as such but a traditional craftsman, skilled worker and labourer differentiation. The CIJC agreement has incorporated 'plus rates' into the skill rates (1-4) which were a prominent feature of the previous agreements. These relate to carrying out particular jobs and are intended to recognise the skills required for this. Many have now gone as the agreement has been simplified. UCATT claimed too that many employers tend to interpret the agreement in their own way, as a price put on the job rather than as formally negotiated pay.

For a long time apprentice rates were not covered in the agreement and it took years to reintroduce these and introduce an apprentice pay structure. The initial rate agreed in 2002 was very low (£80 per week) and modelled on the LCS recommended rate, but has improved since. For 2005 these were:

<b>Stage of Training</b>	<b>Basic pay per hour (pence)</b>		
○ Year 1	313		
○ Year 2	386		
○ Year 3 without NVQ2	544		
○ Year 3 with NVQ2	610		
○ Year 3 with NVQ3	767		
○ with		completed	(NVQ2)
apprenticeship	767		

A further unresolved issue for the agreement is the recognition of adult apprenticeship.

The trade unions are very aware that pay is not formally linked to skill so that skills are not properly recognised in the collective agreement. However, the increasing requirement that all have to have a CSCS card in some respects enforces a link. When the CSCS card took off you could apply for 'grandfather rights' if you could show you had worked in that area. This route was then closed and OSAT took off as the only means to get a card. Thus the card scheme is now solely based on NVQs:

Green card – (NVQ Level 1)

Red card: trainee (needs to be enrolled for an NVQ)

Blue card: skilled card (this is the standard one that everybody is after, Level 2)

Gold card: supervisor (Level 3)

Platinum card: manager (Level 4)

Black card: senior manager (Level 5).

Contractors are supposed to check that people have the appropriate card.

In practice, bricklayers are generally not paid according to the agreement but to price, though this may be estimated on the basis of WRA rates. This means that rates are very variable, including according to region. There are clear differences between: core and non-core workers, migrants and non-migrants, PAYE (directly-employed, pay-as-you-earn) and CIS. Bricklayers are generally paid on the basis of a negotiated price, and in this sense according to output. How far they are directly paid per square metre depends however on the type of work and contractor. With housebuilding, the contractor will probably agree a square metre rate. But a larger bricklaying employer will pay a wage, though pricing the brickwork by the square metre. Bricklayers would be expected to lay about 300 bricks per day and 120 blocks per day, depending on the work.

As explained by one of our UCATT interviewee:

in private housebuilding it's been like for a long time based on lifts. You go to the first lift, which is your chamber joist. Then you go to the second lift, which is when you go to your chopping out which is your gable end. And you draw down so much from the first lift. If you hadn't completed the first lift within say a week for a house, pair of houses, you'd claim so much, based on having a CIS4.

On major projects, in good times, workers would be on an hourly rate, for instance, with one of the large bricklaying subcontractors:

..would box you off against each other. He would say: 'you're a good bricklayer John, you can do the arches, you can be on £18 per hour.' And someone else might be on £14 per hour 'but don't tell him you're on £18'. That's how it works. Nobody knows. They're all looking over one another's shoulder, thinking 'what's he get?' And when the times were good, the lads would phone up the agencies and find what the agencies were paying and use that barometer to negotiate their hourly rate. .. Say the agency would charge £20 for themselves and for the bricklayer it's £15

The UCATT interviewee explained that joiners are more likely to be paid on a shift rate, at so much per 10 hour shift; the going rate is about £13 per hour.

There are different rates for labourers, for instance, £80-£90 whilst the standard for bricklayers if on a shift rate can be £120 per day; those using plant get more on the basis of 'plus rates'. Those directly employed on PAYE may be kept on by the firm and moved on to other sites when they are finished on one. Bricklayers may also come through agencies, especially in London, though this route has been reduced significantly with the recession, which has also meant a reduction in rates; more use is made of agencies if there is a sudden influx of work.

### *Summary*

A curious disparity in levels is apparent between: the collectively agreed rates, with the craftsman at the highest level and the labourer at the lowest and a range of skill rates in between; qualification levels with respect to NVQs, which are also the basis for the CSCS card; and the rates in practice. Each appears to refer to a different skill level. In this respect it is symptomatic but also ironic, given the increasing demand for those who have a wider range of skills and given their extensive training, that German workers employed on Heathrow Terminal 5 were paid a lower rate than a British 'tradesman' because they were regarded as 'multi-skilled' and as a result not regarded as less specialised than 'single' skilled British worker (Clarke and Gribling 2006). The collectively agreed rates simply do not reflect qualification and even skill levels.

Not only is there an evident disparity between skill levels and wage rates, but the wage also can be of a qualitatively different nature, whether on the basis of an agreed price related to output, a shift rate or an hourly rate. Again a key difference is between private housing and other sectors.

## **7. Conclusions**

In relation to the three structures we have examined – governance, qualification, and labour market – disparities have been evident. These appear to affirm the suggestion at the beginning of this report of the co-existence of two systems, a traditional trade-based and an occupational one struggling to emerge and develop. This was evident in the institutional structure, with the trade associations concerned to reproduce the traditional bricklayer at the same time as the FE Colleges and to a certain extent the industry SSC struggle to produce a broader occupation with a clearly recognised qualification. In terms of qualifications, this disparity was evident

between the output and performance-based nature of the NVQ and the newly emerging Diplomas. And in the labour market the traditional bricklayer finds a home in the private housebuilding sector but appears increasingly restricted given the transferable and broad skill sets required in other areas. The situation is by no means static, with policy initiatives stemming in particular from the Leitch Review leading inevitably to establishing a system closer to many continental countries, based on broadly-defined occupations recognised by qualifications at different levels.

## References

- Blackman B. (2007) Regulating the situation for migrants in the British construction industry, *CLR News No 4/2007*, European Institute for Construction Labour Research
- Bolger, M (2008) Migrant Labour: What happens when the Poles go home? *Building*, 24 October, <http://www.building.co.uk/story.asp?sectioncode=627&storycode=3125647>, accessed 5 March 2009.
- Border and Immigration Agency (2008) *Accession monitoring report: May 2004 – Dec 2007*. UK: Home Office. Accessed through [http://www.ukba.homeoffice.gov.uk/sitecontent/documents/aboutus/reports/accession\\_monitoring\\_report/report14/may04dec07.pdf](http://www.ukba.homeoffice.gov.uk/sitecontent/documents/aboutus/reports/accession_monitoring_report/report14/may04dec07.pdf) on 5 May 2008
- Briscoe, G., Dainty, A. and Millett, S. (2000) The Impact of the Tax system on Self-Employment in the British Construction Industry. *International Journal of Manpower*, Volume 21, Number 8, 596-613.
- Briscoe, G (2006a) How useful and reliable are construction statistics? *Building research and information*, **34**(3), 220 – 229.
- Briscoe, G (2006b) The accessibility and usefulness of construction labour market statistics. *Construction Information Quarterly: Special Issue on Construction Labour Markets*. Volume 8, Issue 3, pp119-123.
- Business Enterprise and Regulatory Reform (BERRa) Department (2008a) *Construction Statistics Annual 2008*. London: BERR
- Business Enterprise and Regulatory Reform (BERR) Department (2008b) *Trade Union Membership 2008*. London: BERR
- BWA (Bernard Williams Associates) (2006) *Benchmarking of use of Construction (Costs) Resources in the Member States*, Final Report.
- CIJC (Construction Joint Council) (2005) *Working Rule Agreement*, CIJC
- CITB (1993) *Skills Survey: Preliminary Analysis: Brickwork*, Bircham Newton
- CITB (2002) “Employers’ Skill Needs Survey”, Bircham Newton.
- CITB (2003) *Construction Apprentices Survey 2002-3: National Report*, Bircham Newton
- CITB (Construction Industry Training Board) (2004) *Skills Foresight Report 2004*, Bircham
- CITB (2006a) *National Occupational Standards and Recommended Qualification Structures for Trowel Occupations (Construction)* Bircham Newton
- CITB (2006b) *Trainee Numbers Survey 2005/6*, Bircham Newton
- CITB (2006c) *Pilot Project: Mapping of Overseas Construction Competences for CITB-ConstructionSkills*, report prepared by UK National Recognition Information Centre (UK NARIC) for the CITB, August.
- CITB (2007) *Construction Skills Network 2007-11*, Bircham Newton
- Clarke L. and Gribbling M. (2006) *The Construction Industry in London and Diversity Performance: the example of Terminal 5, Heathrow* Report to London Metropolitan University for Greater London Authority, University of Westminster
- Clarke L and Herrmann G. (2004a) cost versus production: labour deployment and productivity in social housing construction in England, Scotland, Denmark and Germany, *Construction Management and Economics*, 22, 1057-1066
- Clarke, Linda and Georg Herrmann (2004b), ‘Cost vs. production: disparities in social housing construction in Britain and Germany’, *Construction Management and Economics*, 22, June, pp. 521-532

- Clarke Linda and Georg Herrmann (2007) 'Skill shortages, recruitment and retention in the housebuilding sector', *Personnel Review*, Vol. 36. No. 4., pp 509-527, ISSN 0048-3486
- Clarke, L. & Winch, C. (2004) Apprenticeship and Applied Theoretical Knowledge, *Educational Philosophy and Theory*, (36) 5, 509-21.
- Clarke L., van der Meer M., Bingham C., Michielsens E., Miller S. (2009) 'Enabling and disabling: disability in the British and Dutch construction sectors', in *Construction Management and Economics*, 27, April-June, pp. 555-568
- Comptroller and Auditor General (2001) *Modernising Construction: Report by the Comptroller and Auditor General* London: National Audit Office. [http://www.nao.org.uk/publications/nao\\_reports/00-01/000187.pdf](http://www.nao.org.uk/publications/nao_reports/00-01/000187.pdf) (Accessed 10 May 2008).
- ConstructionSkills (2008) *Blueprint for UK construction skills 2008 to 2012*. Kings Lynn: Construction Skills
- ConstructionSkills (2009) *Blueprint for UK construction skills 2009 to 2013*. Kings Lynn: Construction Skills
- Cremers, J and Janssen, J (2006) *Shifting employment: undeclared labour in construction*. CLR Studies 5, Rotterdam: Antenna
- Department for Children, Schools and Families (DCSF) and Department for Innovation, Universities and Skills (DIUS) (2007) *Further Education: Raising Skills, Improving Life Chances: update*, July, London: DCSF and DIUS
- Department for Children, Schools and Families (DCSF) and Department for Innovation, Universities and Skills (DIUS) (2008) *Raising Expectations: Enabling the system to deliver*, March, London
- Department for Education and Skills (DES) (2006) *FE Reform White Paper: Raising Skills, Improving Life Chances*, March, London: DES
- Department for Innovation, Universities and Skills (DIUS) (2008a) *Draft Apprenticeships Bill*, July.
- Department for Innovation, Universities and Skills (DIUS) (2008b) *World-class Apprenticeships: Unlocking Talent, Building Skills for All*, London: DIUS.
- FEFC (Further Education Funding Council) (2001) *Construction in Further Education: National Report from the Inspectorate 2000-1*, London
- Fitzgerald, I. (2007) *Working in the UK: Polish migrant worker routes into employment in the North East and North West construction and food processing sectors*. London: TUC.
- Foster, Sir Andrew (2005) *Realising the Potential: A review of the future role of further education colleges*, November, London: Department for Education and Skills (DES)
- Green, A., Owen, D. and Wilson, R. (2005) *Changing patterns of employment by ethnic group and for migrant workers*. Report prepared for the Learning and Skills Council (LSC) by Warwick Institute for Employment Research. Coventry: Learning and Skills Council.
- Guardian (2009) 'Dismantling DIUS could cost millions', 10<sup>th</sup> June.
- Harvey M. and Behling F. (2008) *The Evasion Economy: False self-employment in the UK construction industry*, London: UCATT Report
- Lambeth College (2006) *General Prospectus 2006/7*, Lambeth College
- Lambeth College (2007) *Hands up – if your looking for a great Future: Prospectus for Young People 2007/8*, Lambeth College
- Leitch Review of Skills (2006) *Prosperity for all in the Global Economy: World Class Skills*, Final Report, December, London: HM Treasury
- Lillie, N and Greer, I (2007) Industrial Relations, Migration, and Neoliberal Politics: The Case of the European Construction Sector, *Politics and Society*, Vol.35, No.4, pp551-581.
- Moehler, R., Chan, P. and Greenwood, D. (2008) The interorganisational influences on construction skills development in the UK. In: Dainty, A. R. J. (Ed.) *The twenty-fourth*

- ARCOM conference*, 1 – 3 September 2008, Cardiff, UK, Association of Researchers in Construction Management, volume 1, 23-32.
- Murdoch, I. (2008) *NSCC State of trade report 2008: quarter 1*. Newcastle upon Tyne: Northumbria University.
- Nuffield (2009) *A European skills framework: cross-national equivalence of vocational qualifications*, Final report to the Nuffield Foundation, Kings College London
- Perry, P. J. C. 1976. *The Evolution of British Manpower Policy: From the Statute of Artificers to the Industrial Training Act 1964*, Portsmouth: Grosvenor Press
- Pollard, N., Latorre, M. and Sriskandarajah, D. (2008) *Floodgate or turnstiles? Post-EU enlargement migration flows to (and from) the UK*. London: Institute of Public Policy Research (IPPR).
- Qualifications and Curriculum Authority (2009) *QCA and Ofqual – an introduction*, [www.qca.org.uk](http://www.qca.org.uk) and [www.ofqual.gov.uk](http://www.ofqual.gov.uk)
- Steedman H. (1992) 'Mathematics in vocational youth training for the building trades in Britain, France and Germany', *NIESR Discussion Paper No 9*, London
- Stewart, D (2007) Third of Eastern European Migrants work in Construction. *Building Magazine*.
- Torrance H, Colley H, Garratt D, Jarvis J, Piper H, Ecclestone K, James D (2005) *The impact of different modes of assessment on achievement and progress in the learning and skills sector*, Learning and Skills Development Agency
- UKCES (2009) *Ambition 2020: World Class Skills and Jobs for the UK* London UKCES.