Work-integrated degrees:

Context, engagement, practice and quality

A literature review for QAA

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1   Introduction

This review, conducted on behalf of the Quality Assurance Agency for Higher Education (QAA), aims to identify what can be learned about effective approaches to the development and delivery of employer-sponsored, work-integrated higher education (HE) programmes. The term 'work-integrated' is used both as a broader term than 'work-based', and to emphasise connectedness of learning as opposed to academic and workplace learning taking place in parallel but independently of each other. The review seeks to inform practice regarding degrees that include workplace learning and are sponsored by an employer, and particularly the development of degree apprenticeships. Its focus is on programmes that lead to an undergraduate or postgraduate higher education qualification and contain a substantial period of work-integrated learning that contributes to the accredited outcomes of the programme. It excludes programmes with short work placements, and it is not specifically designed to inform practice related to the provision of foundation degrees or level 4 or 5 apprenticeships, although much of the discussion will be relevant to them as well as, in part, to shorter collaborative programmes.

The main focus of the review is on the factors that influence the quality and success (for students and for employers) of programmes. This includes how provision relates to entry and progression routes to higher-level occupations and professions; factors that influence successful employer engagement and collaboration; how programmes are structured and organised; and approaches to programme delivery, assessment and quality assurance. The review does not seek to identify a single model or approach, but aims to identify factors that are relevant and appropriate to the context and sector within which programmes are set.

The study was carried out over a five-week period in July and August 2016 by reviewing published literature principally on work-integrated and work-based degrees, degree and higher apprenticeships, foundation degrees and other examples of collaborative higher education. Initially, 138 reports, articles and chapters were identified through a remote search using relevant terms via Summon and Google Scholar, restricted to papers from 2005 onwards. Of these, 109 were identified as relevant and downloaded, of which 90 contributed information to the report. In addition, an internet search was conducted for relevant sources outside of the academic literature such as official reports, apprenticeship regulations, and reports or regulations from professional bodies; this produced 37 documents, of which 26 are referenced. The search was then extended via references from the original sample and searches on specific topics, resulting in a further 83 papers, reports and guidance documents which contributed to the final report. The study did not include any primary research or direct requests for information.

The review found only a few papers relating directly to the new standards-based degree apprenticeships, largely as a consequence of their newness; there are slightly more that concern 'framework' higher apprenticeships[1] and other programmes that include work-integrated degrees. There is also a fairly substantial body of literature concerned with foundation degrees and apprenticeships more generally, and although these programmes are not the focus of the study, the issues discussed are often directly relevant to the quality and success of work-integrated degrees. Similarly, there is an established and growing body of work on work-based learning in higher education discussing principles, theory, pedagogies and practices, and this has been drawn on where relevant. The review also found a large body of literature concerned with various aspects of higher education provision that incidentally includes a practice-based component, particularly in the health sector, and some that discusses work-based and employer-sponsored pathways in other professions

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[1] Apprenticeship frameworks and the replacement standards are explained in Chapter 2.

with or without linkage to a degree. Much of this was field-specific, but it has been drawn on where it has relevance to work-integrated higher education more widely, without entering into discussion of the detail of particular curricula or pathways.

2   Background and policy context

The use of work components in degree courses can be traced back at least as far as the early twentieth century, with the normalisation of clinical attachments in the later stages of medical degrees (Roberts 2004). However, the dominant model of entry to professional careers has evolved from an apprenticeship format complemented by what would now be considered further education, to full-time bachelor's and, in some cases, master's degrees with the 'apprenticeship' postponed until after completion of the course (Lester 2009). From at least the 1970s a minority of academic programmes included mandatory or optional sandwich years in which the student would be expected to find employment in the relevant field, but there was rarely any attempt to integrate this with programme content. An exception has been in education, where the BEd degree has traditionally included practice-based components that contributed to the professional studies or pedagogical part of the programme. After 2000 the movement into higher education of training for many health and social care professions brought with it a tradition of practice-based learning, which became included in the structure of the degree: for instance, nursing degrees include at least 2,300 hours of practice, podiatry 1,000 hours, and social work 200 days.

In most other professions there has until recently been little integration between academic and practice-based learning, beyond the inclusion of short placements in some degrees. Nevertheless, relatively few professions are closed to non-graduates, and there is evidence of increasingly diverse entry-routes, both through non-graduate and experience-based pathways and occasionally through degree-bearing routes for people already in work (Lester 2009). With limited exceptions these have not formed a pathway for more than a small minority of entrants, and policy initiatives to improve access to professional careers have until recently tended to focus on removing barriers within existing structures (e.g. Langlands 2005, Milburn 2012).

In the early 1990s the then Employment Department sponsored a project to encourage higher education institutions to incorporate work-based learning into academic structures (Duckenfield and Stirner 1992). This included several pilot schemes that supported and accredited existing workers' learning at, through and for work, on either a cohort or an individual basis (Brennan and Little 1996), and laid the foundations for programmes of work-based learning negotiated between learners, employers and the institution (Osborne *et al* 1998). The project also aided the establishment of work-based learning or employer-facing units at several universities and colleges, some of which have subsequently grown to become major platforms for the institutions' work. The 'University for Industry' initiative provided further impetus in the form of Learndirect *Learning through Work*, an online portal that supported employers and (employed and self-employed) learners to negotiate individual and group programmes with institutions (Stephenson and Saxton 2005). This early development period established some of the underlying principles for integrating work-based learning into academic structures, including the use of learning contracts or agreements (Anderson *et al* 1998), recognition of previous learning based on relevance to the negotiated programme rather than as exemption from a predefined curriculum (Garnett 1998), and using generic assessment criteria that are derived from academic level statements and are capable of being applied to any field (Lyons and Bement 2001).

The gradual acceptance of work-based learning in higher education has also led to changes in the way in which some employers recruit young people. Sponsorship of school leavers to take full-time degrees has been an established if relatively small-scale activity in some sectors, notably in defence, engineering and manufacturing, and to a lesser extent financial and business services. In some cases this included the student working for the employer outside term time or on short placements, but more recently there has been a shift among some sponsoring employers to recruiting school leavers directly and working with institutions to develop degrees that fit alongside their work. Syedain (2011) reports on several schemes

of this type, while McKnight and Birks (2016) describe an example in the information technology sector. These collaborative programmes have in some respects anticipated degree apprenticeships, and in the latter case informed their development.

Since the Dearing Report (NCIHE 1997) proposed increasing 'sub-degree' provision to boost workforce skill levels, there have been frequent policy interventions to encourage collaborative working between employers and higher education institutions (Birds 2010, Bravenboer 2016). Foundation degrees were set up as level 5 qualifications that included a requirement for employers to be involved with the "design and regular review" of the programmes, as well as them having "recognition from employers and professional bodies" and involvement of "local organisations and national sectoral bodies, to establish demand" (HEFCE 2000, p27). Foundation degrees require the demonstration of skills applied in the workplace, include assessed work experience, and ideally involve employers in delivery. The requirement that they are "underpinned by work-based learning" (QAA 2010a, para 24) has been identified as a key feature as it involves actual learning in the workplace rather than work-related or simulated learning experiences (Longhurst 2010). However, Morgan *et al* (2004) comment that the expectation for employers to be involved with the design and delivery of foundation degrees may not have been fully adhered to in practice, while Little (2005) has argued that their use as a stepping stone towards bachelor's degrees, rather than to enter the workplace, has undermined their efficacy from a skills policy perspective. It is, however, notable that both the emergence of work-based higher education in the early 1990s and the introduction of foundation degrees has led to gradual substitution of higher education qualifications for those in the higher VET sector, such as HNCs, HNDs and higher-level NVQs (Lester 2016a), bringing more employers into contact with higher education.

In response to the need to raise higher-level skills, identified in the Leitch Report (Leitch 2006), the government announced 'Higher-level Skills Pathfinders', which aimed to encourage employers to engage with higher education via funded 'demand-led' projects (DIUS 2007). *Higher Education at Work* (DIUS 2008) promoted the enhancement of cooperation and collaboration between higher education institutions and employers (Hordern 2013), as well as ongoing working relationships between employers and institutions as preferable to the often 'transactional' nature of existing relationships (Bruneel *et al* 2010). The report indicated that it was important that higher education institutions "speak the language of employers"; identify a "single point of contact" for employers; provide opportunities for employer delivery within HE programmes; arrange secondments of academic staff in industry; and upskill the higher education workforce "to be more responsive to employer need" (DIUS 2008, p4). *Higher Ambitions* (BIS 2009) also promoted employer collaboration with institutions as active partners for funding (via co-funding arrangements), as well as in designing programmes in partnership with institutions.

The HEFCE *Higher Education Transforming Workforce Development Programme* (DIUS 2007) involved institutions working with employers to enhance workforce development; it included 37 funded projects and three regional Higher-level Skills Pathfinders. The HEFCE evaluation of this national programme (Kewin *et al* 2011) concluded that to be most effective, a collaborative approach between institutions and employers would be necessary. Higher education institutions would need to seek to understand employers' business aims and objectives and develop flexible provision that met identified needs. This approach was contrasted with the 'product push' traditionally associated with institution/employer interaction. However, the advent of the coalition government in 2010 shifted policy away from workforce development and dropped the 'co-funding' model used in Pathfinder projects.

Although higher apprenticeships at levels 4 and 5 had been launched in 2008, the BIS paper *Skills for Sustainable Growth* (BIS 2010) emphasised apprenticeships mostly at level 3; where higher levels were mentioned it was proposed that institutions work with Sector Skills

Councils to ensure that there were "clear ladders of progression". It was identified that this would require the provision of more flexible higher education, which was conceived as including "internships, work experience opportunities and fully integrated workplace training" (BIS 2010, p19). Bravenboer (2016) describes the bifurcation of higher-level skills policy, which contributed to a low level of engagement by institutions in higher apprenticeships and the higher-level skills policy area more generally (Anderson *et al* 2012), despite government funding initiatives (NAS 2011). In particular the lack of alignment between the 2011 Specification for Apprenticeship Standards in England (the SASE, BIS 2011) and higher education qualifications operated as a significant barrier to institutional engagement. Both Anderson *et al* (2012) and Bravenboer (2016) comment on barriers including the fact that higher apprenticeships could not extend beyond level 5; the variability of the size of the qualifications that could be included; the separation of 'knowledge' and 'competence' through separate qualifications or assessments; and the lack of a level playing field for public funding of any higher education qualifications that were included. Despite support in principle from professional bodies, the level restriction meant that higher apprenticeships could not be used to support entrants through to achieving professionally qualified status, which is more usually at the equivalent of level 6 or 7 (Williams and Hanson 2011).

Following consultation (NAS 2012), the SASE was significantly revised in 2013 (BIS 2013). This provided for the introduction of higher apprenticeships at levels 6 and 7; a requirement for larger qualifications, totalling 90 credits at levels 4 and 5 and 120 credits at levels 6 and 7; and the opportunity for higher apprenticeships to include a single integrated qualification that did not need to assess 'knowledge' and 'competence' separately (Bravenboer and Lester 2016). Concurrently, the government sponsored a second review of apprenticeships (Richard 2012). This recommended that employers should determine the design of apprenticeship 'standards' to ensure that they met their needs, and, reflecting the view expressed by UKCES (2011), be given the purchasing power for all apprenticeships (see also Perryman 2016). Richard also recommended that rigorous 'end tests' be required to ensure that those completing apprenticeships were "fully competent and employable, within their job and their sector" (Richard 2012, p18). This significant policy change represents a clear shift away from approaches that are perceived to be supply-led (Hogarth and Gambin 2014, Peyton-Jones 2016).

The current 'Trailblazer' process for development and approval of higher (and newer 'degree') apprenticeships is described in *The Future of Apprenticeships* (BIS 2015). A key difference between higher and degree apprenticeship standards is that regardless of level the former do not need to lead to a formal qualification as long as they include an approved 'end-test', although they are encouraged to lead to, or enable progression to, professional or trade recognition where it exists. Perhaps as a consequence, higher education institutions are not generally directly involved in the development and design of higher apprenticeship standards (Bravenboer 2016). Degree apprenticeship standards must include a full bachelor's degree or postgraduate higher education qualification[2], and be co-designed by employers, degree-awarding institutions and, where appropriate, professional bodies:

> Employers, universities and professional bodies can come together to co-design a fully-integrated degree course specifically for apprentices, which delivers and tests both academic learning and on-the-job training. We think this will be the preferred approach for many sectors, as the learning is seamless and does not require a separate assessment of occupational competence (BIS 2015, p13).

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[2] The BIS document states full degrees. At postgraduate level this appears to be interpreted in some cases as a postgraduate diploma with optional continuation to a master's degree.

The recent White Paper *Success as a knowledge economy* (BIS 2016) positions degree apprenticeships as a means by which higher education will help employers to raise UK productivity levels. It also heralds the establishment of the Institute of Apprenticeships as an independent employer-led body to oversee the quality of all apprenticeships. Anderson and Crawford-Lee (2016) have argued that the government should focus on the development of high quality higher and degree apprenticeships, and that higher education institutions have a crucial role to play in this regard. Their rationale for engagement includes government policies to extend higher-level apprenticeships as a means of boosting UK productivity and create alternatives to full-time degrees, the decline in school-leaver and international students, opportunities to widen participation and to develop new income streams, and the financial benefits and career development opportunities provided to individuals.

Overall, these developments have created an environment that favours the development of work-integrated higher education programmes at levels 5, 6 and 7, and in particular models where the learner is engaged as an employee with the majority of the time spent in the workplace. Professional bodies are on the whole positively disposed to these models, and are increasingly using them as a means of entry (PARN 2015).

3 Entry-routes and work-integrated structures

This chapter is divided into three sections, discussing, respectively, how higher education programmes relate to evolving professional entry-routes, how programme structures integrate with work activity, and issues relating to the use of the workplace as a site for higher-level learning.

3.1 Entry-routes to higher-level occupations and professions

Dominant entry-routes to higher-level occupations and professions have evolved over time and also vary between sectors and professions. Bines (1992) discusses apprenticeship or pre-technocratic, technocratic, and post-technocratic approaches. In the former, learning is principally on the job and concerned with skills development and developing expert practice through experience; in technocratic approaches, there is emphasis on mastering the theory and technique that underpins practice, normally via a course in a university or professional school; and in the latter, practice is foregrounded but in a way that theory is integrated with it. In formalised professions the technocratic approach has been dominant since at least the middle of the twentieth century. It draws on what has been termed an 'intellectualist' approach to development (Young and Muller 2014), reflecting the view (after Veblen 1918) that professional learning follows a pattern of acquiring the 'basic science' or formal theory of the field, followed by its 'applied science' and finally its skills and techniques. The more recent post-technocratic approach is more consistent with a philosophy of pragmatism that emphasises the interdependence of theory and practice (e.g. Dewey 1938, Schön 1987). These philosophical differences continue in debates as to, for instance, the value of acquiring a sound theoretical base before exposure to practice, with the risk that it will not become properly applied and integrated, as against the benefits to development as a practitioner of a more integrated approach, balanced with the danger of learners becoming too situated in particular practices to easily develop a more conceptual understanding of their fields (e.g. Eraut 2009, Young and Muller 2014). They are currently being played out in discussions of the relative merits of different models of teacher education (Brown *et al* 2015, and Lawn and Furlong 2011 for a critique of the 'turn to the practical').

Lester (2008, 2009) identifies four principal types of entry-route, based on the relationship between theoretical and practical learning. Sequential routes involve the theory being imparted first, typically via a degree, professional course, or both, followed by learning in the workplace. In parallel routes, a course runs alongside a traineeship, traditionally in day or block-release format; there need not, however, be any co-ordination between the theoretical and practical components. Integrated routes also involve theoretical and practical learning taking place in parallel, but in a more co-ordinated way where they feed off each other, as in Bines' post-technocratic model; structures can include 'full-time' degrees with significant periods of real practice-based learning (as is common in the health professions), or apprenticeship-type models integrated with an academic programme. Experiential routes are more ad-hoc and individual in nature, and tend to be most common outside the formal professions (though present in, among others, accountancy as a significant entry-route, and engineering, surveying, architecture and planning as minority pathways). They emphasise individually organised learning from, and in response to, work. These routes may be supplemented or rounded off by more formal learning episodes, which can include gaining an academic qualification via a 'top-up' process that normally includes recognition of substantial prior learning; the BA (Hons) Professional Practice in the Arts described by Nottingham and Akinleye (2014) is an example of a programme designed for this purpose. Combinations are also found, for instance in accountancy where a common pattern is a full-time degree followed by a traineeship with day or block-release to a course to prepare for the professional body's examinations. Some older and more strongly formalised professions

such as medicine and law tend to be focused on sequential routes (Hordern 2014), though there is increasing recognition of the value of experiential learning (e.g. Dornan 2005, de Silva 2014) and alternative routes have started to appear (e.g. SRA 2015).

In some fields, progression from what might be called 'technician' level to professional or managerial roles forms a widely used or growing pathway. In engineering and accountancy this is well established and generally well supported by employers, including now via the use of higher apprenticeships. In nursing and teaching, while pathways of this type are increasingly available, they are not generally as well supported or resourced as the standard training routes (e.g. Hillier *et al* 2007); this is despite a gradual blurring of 'professional' and 'paraprofessional' roles, where work that was at one time the domain of more qualified staff is being done by those in assistant-type jobs (Kubiak *et al* 2010). It is notable that while in some fields intermediate certification is provided through higher VET qualifications (law, accountancy and financial services) or by professional bodies themselves (accountancy, surveying and engineering), in others (notably healthcare and teaching, and now law) there is increasing use of higher education qualifications with pathways to full degrees (Lester 2016a).

An important component of development in many professions is achievement of formally qualified status or a licence-to-practise, normally denoted by a chartered or regulated title or a qualified class of membership. This may be required by law, either to use the relevant professional designation or perform all or some of the work normally associated with the profession; it may be difficult to practise without, either because of the value attached to it by employers or clients, or due to insurance or other stipulations; or it may simply be a marker of achievement that has a measure of career value. Its importance as a national standard vis-à-vis the requirements of individual employers therefore varies across sectors and professions. Qualified status is normally governed by a professional association or regulatory body, although the criteria for its award may develop out of complex interactions between the governing body, other sector bodies and associations, employers, educational interests and government departments and agencies (Hordern 2014).

The requirements that have to be met for qualified status to be awarded are increasingly explicit, and often independent of the routes taken to meeting them. The point at which practitioners are considered fully qualified, either in terms of novice-to-expert development or in the sense of professional maturity and ability to practise independently, is not identical across professions; for instance, the award of a chartered title in a profession where independent practice is common will typically take place at a more advanced point in the practitioner's development than registration in an area where the next step is into a supervised work role. Particularly in the former type, professions are increasingly requiring formal evidence of 'fitness to practise' that is separate from both obtaining a degree and sign-off by an employer (Lester 2009). It is notable, however, that in many professions the standards or criteria specifying this are more open and holistic than, for instance, has been the case with National Occupational Standards (Lester 2014), making them more compatible with descriptions of academic level (Bravenboer and Lester 2016).

3.2   Work-integrated programmes

The current landscape of work-integrated degrees can be summarised as a continuum from programmes where the academic structure dominates but includes substantial periods of practice learning in the workplace, through models where the student is employed but follows a structured academic programme, to those where the degree is built around workplace learning on either an individual or a cohort basis.

Degrees that include work-based learning may sit within any of the occupational or professional routes described above, though by their nature they are more likely to be part of

a parallel or integrated structure. A minority sit within a partly integrated, partly sequential route, in that while they include substantial practice components, more advanced practice-based development continues in the workplace after completion. Academic qualifications may also be built around predominantly work-based development with the function of integration and extension, to support an employer-driven initiative (e.g. Bravenboer 2011), provide progression from an associated occupation to professional level (e.g. Drake 2009 in teaching, Glasper 2014 in nursing), or to extend, formalise and recognise individual experiential learning (Lester and Costley 2010).

The practical and theoretical components within the degrees themselves can also be described as having a sequential, parallel or integrated relationship. Sequential structures appear most commonly in professional degrees that have a high scientific or theoretical content, most obviously medicine, dentistry and veterinary medicine: in these fields the pattern of a pre-clinical phase followed by a clinical one with associated exposure to practice is well established (Roberts 2004, Dornan 2005). Parallel or integrated structures within degrees are more common in fields such as social work and non-medical health professions (e.g. Willis Commission 2012), as well as some work-based engineering and construction programmes; in these, early exposure to (limited and supervised) practice is both practicable and deemed safe. However, the level of integration between theory and practice actually experienced on these programmes may not be as great as their structures might suggest. As an example, there is some evidence that the transfer of nursing to 'full-time' degrees with practice components may have had a detrimental effect on integration, particularly given time pressures both in the workplace and for academic staff (O'Driscoll 2010).

Where practice has been introduced earlier in traditional sequential programmes, there is evidence of it having positive benefits. Dornan (2005), Dornan *et al* (2006) and Bleakley and Brennan (2011) discuss the introduction of clinical experience in the first two years of some medical degrees, which is reported as strengthening students' theoretical learning and making it more relevant to practice, making them better prepared for clinical practice later in the course, giving them an improved understanding of the healthcare system, and enabling them to become socialised into the profession more quickly. However, while the benefits of early exposure to real practice with hands-on involvement and decision making are widely recognised, in medicine as in some other fields this may be limited by the potential for students to cause harm (Illing *et al* 2013).

There is also a pragmatic consideration to how programmes are structured, which can limit integration between theory and practice. The ACCA professional accountancy framework, for instance, recognises that not all prospective accountants are able to secure a formal training contract or maintain continuous employment in a relevant job. This framework (Lester 2008, 2016a) can take 16-year-old entrants through to a level 7 professional qualification via an optional degree, and uses a modular structure that can be used flexibly in a normal parallel mode or (to a point) to front-load theory. The flexibility provided by the structure enables students to follow the programme regardless of the level of support from their employers or whether they change jobs en route, but it also means that theoretical learning is rarely integrated with what the person is doing at work; only the final degree project, in an area negotiated by the student, requires integration between theory and practice (Oxford Brookes University 2016). A second example given by Lester (2016a) is a marine engineering programme validated by Northumbria University, consisting of alternate periods at college and at sea with the only formal integration via a longitudinal work-based project.

In relation to professional registration and licensing, the norm has usually been that academic qualifications contribute to professionally qualified status, but do not automatically confer it. This is clearest in sequential routes where graduates enter a professional traineeship after completion of the degree. Integrated programmes, particularly in the health

sector and in teaching, allow professional registration on the basis of achieving the degree, provided that the minimum practising requirements have also been met. However, as discussed by Blackman *et al* (2003), Duchscher (2008), Illing *et al* (2013) and Van Hamel and Jenner (2015), newly qualified practitioners from this kind of programme can experience a substantial fracture between the end of the course and starting in full-time practice, with former students finding that they are poorly equipped and feel out of their depth particularly in decision-making, prioritisation, and coping with contingencies. The lack of time to develop professional maturity alongside covering the curriculum is also commented on in relation to social work (J M Consulting 1999) and medicine (Monrouxe *et al* 2014). In all these cases registrants are either required to complete a further formal period of training (e.g. medicine and dentistry), or, at least in the public sector, are customarily employed as probationers (teaching, nursing and other health and care professions).

The evidence cited above suggests that a 'full-time' programme with integrated periods of practice, even the 2300 hours required in nursing, is unlikely to be sufficient to bring previously inexperienced entrants to the level typically expected for qualified status in chartered professions. Supporting this, the Willis Commission (2012) for instance comments that a 'newly qualified' (i.e. registered) nurse should not be seen as fully qualified. Apprenticeship-type programmes where the learner is treated from the outset as a full-time worker appear, from the limited evidence that is available, to provide more rapid progression to a competent or proficient level of practice. An example is provided by the Chartered Manager Degree Apprenticeship developed by a consortium led by Serco and backed by the Chartered Management Institute (CMI). This programme aims to enable 18-year-old entrants to achieve both a BA and chartered status in four years, reducible to two years for experienced managers (CMI 2015). The programme is currently being offered in banking (Armstrong 2016) and food processing (Moss 2016) among other sectors. Another instance where chartered status has been linked to a degree is described by Bravenboer and Lester (2016), in the context of construction management and surveying; this takes the form of a degree apprenticeship, which may follow on from a level 5 higher apprenticeship or other level 5 qualification with significant relevant experience. Further examples are described in engineering (Benefer 2007), logistics (Billaney 2012), and aviation (Bravenboer and Lester 2016), and more are likely to appear as further degree apprenticeships are developed (e.g. Longmore 2016). It should, however, be noted that currently there have been no direct comparisons done between 'full-time' integrated and workplace-based programmes, and it is unclear to what extent the latter could meet, for instance, the need for a substantial scientific or theoretical base and ensure the maintenance of safety in a field such as medicine.

3.3 The workplace as a site for learning

One implication of taking an integrated approach to degree programmes is that the workplace becomes a source of academically valid learning, rather than simply a site for gaining experience and applying what has already been learned (Burke *et al* 2009). This brings into focus the necessity of the working environment to support learning at the requisite level. Fuller and Unwin (2008), drawing on Engeström (2001), discuss 'expansive' and 'restrictive' workplaces and working practices and their effect on learning in apprenticeships. In summary, restrictive workplaces emphasise training for a narrow job role, development of threshold competence, and the apprentice becoming a full-time contributor as soon as possible; while 'expansive' ones promote broader and more rounded development, progression to higher levels of expertise, and individual development as a member of a community of practice. Similarly, Ofsted (2015) comments that better quality apprenticeships enable work-based learning that is both linked with work tasks and goes beyond the requirements of the job to support the apprentice's ongoing career.

Lester and Costley (2010) discuss the need for the workplace to provide both adequate scope for learning, including critically reflective learning, as well as capacity for learners to develop after the end of the programme. They go on to discuss the danger of producing an uncritical kind of learning where reflection operates within boundaries and can lead to a form of self-censoring in order to conform to a company-focused agenda. Siebert and Costley (2013) continue this discussion through an example of how organisational norms can place restrictions on learning, for instance by discouraging reflection on values, rules and practices or on managers' approaches or decisions, and how this can lead to a form of 'game-playing' by learners and their managers. A similar situation (from Australia, but with relevance to the UK) is reported by Gustavs and Clegg (2005), where the organisation they discuss has a culture that values higher-level learning within restrictive limits, discouraging critique and creativity that is not aligned to existing goals and ways of doing things. Reeve and Gallacher (2005) are more pessimistic in their assessment of workplaces, and they discuss problems that include an instrumental view of knowledge, an orientation towards action rather than reflection, and limited commitment to good human resources practice. There is, however, also evidence of workplace cultures being modified through engagement with higher education, both through in-depth dialogue between employer and institution as the programme is constructed (Bravenboer 2011), and through the effects of the programme itself (Eastman 2014).

As will be discussed further in section 5.4, the presence of effective supervision and mentoring in the workplace can be critical to effective learning, particularly for learners who at the beginning of their career (e.g. Major *et al* 2011). In some organisations, both pressure of work and the way in which work is organised are noted as detracting from learning. This can be due to a lack of time for the learner to approach tasks mindfully, as well as supervisors and mentors having heavy workloads, prioritising other aspects of their roles, or having work patterns that restrict contact. This is reported as a particular problem in nursing, where the quality of the practice phase has recently been described as variable due to pressures on both student nurses and their mentors (O'Driscoll *et al* 2010, Willis Commission 2012). For healthcare and teaching assistants taking higher education qualifications to become 'assistant practitioners' or to qualify as a teacher or nurse, the situation described above can be exacerbated where they are seen principally as workers rather than students and are expected to continue with a normal workload (Edmond *et al* 2007; Wareing 2008, 2010; Kubiak *et al* 2010).

Finally, there is also some discussion of the ability of the workplace to accommodate development and progression beyond the end of any formal programme. Kubiak *et al* (2010) note that in more restricted workplaces, work-integrated learning can create tensions by pushing boundaries and extending work beyond its normal parameters. It can also result in staff in 'assistant'-type jobs changing their perspectives on their work roles and relationship to colleagues, and if the organisation is unable or unwilling to meet their expectations, to them leaving. Similarly, in Gustavs and Clegg's example cited above, a lack of opportunity to exercise enhanced abilities was reported as leading to a tendency for people to leave the organisation after completing the programme.

4 Collaboration and engagement by employers

This chapter summarises patterns and motivations of employers engaging with higher education institutions, then goes on to discuss barriers to involvement and factors leading to successful engagement and collaboration.

4.1 Patterns and motivations of engagement

Engagement between employers and higher education institutions in the context of work-integrated programmes takes various forms, from simple sponsorship of students, through accreditation of in-house courses, limited involvement in design or delivery, and in-depth collaboration, to leading the development process with the institution brought in as a partner or contractor. Employers' reasons for engagement can be divided broadly into those related to recruitment and workforce planning, the largest and most diverse group discussed in the literature; those connected with specific business needs; and, for a smaller group of employers, those that have a more altruistic intention.

The level of involvement by sector is difficult to gauge other than impressionistically. Table 1 presents the number of instances of collaborative higher education or higher apprenticeship provision described in those papers that discussed specific cases, by sector and type of employer. This analysis cannot be regarded as representative, but it provides a summary of the fields in which collaborative programmes are being reported in this study.

Table 1. Reported instances of collaboration by sector.

Sector	Total	Public	Mixed	Private (SMEs*)	Voluntary
Health	18	18			
Social care	5	1	1	3 (1)	
Education	5	5			
Mixed sector business and management	7		2	5 (5)	
Construction	5			4 (1)	1
Engineering, manufacturing and science	12	1	1	10	
Transport and logistics	3			3	
Financial services	4			4	
Accountancy and business services	4			4	
Information technology	3			3	
Retail	4			4 (1)	
Art and design	2			2	
Agriculture	1			1 (1)	
Mining	1			1	
Total	74	25	4	44 (9)	1

*Instances where collaboration included SMEs (normally multiple organisations as part of a consortium

In some sectors there is a tradition of organisations or firms training new entrants via award-bearing programmes as a matter of course. In the NHS this is driven by policy, centrally co-ordinated or promoted, and is a given particularly for regulated occupations,

where the initial programme normally takes the form of a work-integrated or parallel degree in which students spend a proportion of time with the employer. Engagement and support can be less consistent in unregulated areas; for example, recent drives to improve training for healthcare assistants, including foundation degrees and level 6 apprenticeships linked to nurse registration (e.g. Glasper 2014), have been met with more variable commitment where the time and support given to learners is considerably less than that available for student nurses (Wareing 2008). It is notable that while the health sector has a strong tradition of work-based training and work-integrated higher education courses, health professions have been among the least interested in developing alternative routes via apprenticeships (PARN 2015).

An analogous situation is present in teaching, where the traditional mode has been that schools provide placements for BEd or PGCE students who are recruited by higher education providers, before taking on newly qualified teachers as probationers. This does not, however, appear to have inhibited schools from engaging in school-led models of teacher training, where they run what are effectively apprenticeships for graduates (Brown *et al* 2015); school-led models now account for just over a third of post-degree training programmes (Carter 2015). However, for teaching assistants a similar situation can arise as for healthcare assistants, where support for development to qualified teacher level can be significantly less than that given to trainee teachers (Edmond 2010).

Outside of health and education there are several sectors where professional entry is predicated on employer involvement in initial training. These include social work, accountancy, law, engineering, surveying, architecture, and landscape architecture. Employer engagement may be primarily with a professional body rather than a higher education institution; in engineering and construction there has also been a continuing tradition of apprenticeships (Ofsted 2015) that is now extending to higher and, to some extent, degree apprenticeships. Motivations to engage with higher education, and with new types of entry-route, can be varied. Where a technician or intermediate stage is present, as in accountancy and engineering, there is evidence that employers have engaged positively with foundation degrees and higher apprenticeships as a version of these routes (e.g. Syedain 2011 and Bryson 2012 in respect of accountancy, Twigg 2012 for engineering). Particularly in accountancy, part-time degrees have appeared as a logical extension to traditional day or block-release professional courses, with schemes promoted by the two largest accountancy institutes and supported by major employers (Lester 2008, Ashworth 2012); there is now also a similar programme in law. Alternatively, there is evidence that employers that have traditionally used higher VET qualifications – as in adult social care (Skills for Care 2013) – are being brought into contact with higher education institutions through qualification substitution, particularly via higher and degree apprenticeships.

Both within and outside of these sectors, specific business benefits are a major motivator for employer engagement, whether connected with workforce planning and recruitment strategies, or in response to more immediate or specific needs.

Mieschbuehler *et al* (2015), from a survey of 200 employers of all sizes, identify motivators for engaging in higher apprenticeships (not necessarily degree-bearing) as enhancing the skills-base of their companies, attracting and retaining high quality recruits, and providing an alternative to graduate recruitment. In relation to the latter, advantages are reported as entrants having less baggage and fewer expectations, and the employer being able to develop them in-house. Hill (2016) also suggests that degree apprenticeships can be a solution to traditional graduates' poor levels of preparedness, particularly in terms of technical or applied knowledge and ability to learn on the job. However, in the majority of cases higher-level apprenticeships are seen as complementing rather than replacing graduate entrants. Syedain (2011) reports some traditional graduate recruiters as targeting school leavers through various routes, including traditional sponsored degrees but also by

offering part-time degrees alongside paid employment; these include employers in the banking, retail, accountancy and IT sectors. Motivations are reported as diversifying recruitment, improving loyalty, and overcoming a lack of work-readiness in full-time graduates. The Defence Academy's Defence Technical Undergraduate Scheme serves a similar purpose but currently includes only selected full-time undergraduate degrees, though with service personnel involved in delivery. Hamnett and Baker (2012), discussing a suite of higher apprenticeships developed by a consortium led by PricewaterhouseCoopers (PwC), reported similarly that motivations included generating a talent pipeline in an expanding industry, and increasing the diversity of the workforce. Work-based degree routes are also reported as leading to good long-term retention rates, anecdotally more so than graduate recruitment (McKnight and Birks 2016).

Developing new entry and progression-routes, including pathways from technician to professional occupations, has also been cited as a motivation for involvement in developing higher apprenticeships and similar programmes. In the NHS the upskilling of healthcare assistants to 'assistant practitioners' via a foundation degree, with some opportunity to progress into nursing and other health professions through a full degree, is forming an important workforce planning and development strategy (Wareing 2008). Outside of this, Sakhardande (2012) describes the development of a higher apprenticeship suite in the life sciences geared primarily to enabling technicians to progress, with the level 6 apprenticeship including a BSc and leading to Registered Scientist status with the Science Council. Cambrook and Lyddon (2011) discuss the development of a foundation degree by a partnership of eight cathedrals to maintain the supply of skilled stonemasons and restorers almost regardless of cost, for fear of losing the skills altogether.

In some companies motivations are driven by specific business needs, predominantly to develop staff into management roles or fill technical skills gaps, rather than in addition to recruitment and workforce planning strategies. This is illustrated by companies from a range of sectors, including retail (Edmonds and Bainbridge 2011, Pollitt 2014), chemical engineering (Minton and Fenwick 2011), mining (Spear *et al* 2011), banking (Kemp and White 2011), shipping (Shaw and Godfrey 2011), events (Moss and Hackett 2011), and logistics (Billaney 2012), as well as the armed forces (Lucas *et al* 2007) and the NHS (Banim and Evans 2008). In most cases this is presented as a response to general operating needs, although in some instances it has been prompted by a specific event such as gaining a major contract, as in the case of the company described by Moss and Hackett (2011). These motivations more typically result in partnerships to develop short programmes rather than full degrees, though the above examples include foundation degrees, a level 6 'top-up' degree, and postgraduate certificates. In retail, Hart *et al* (2007) comment that a particular motivation for employers can stem from the sector's perceived lack of attractiveness as a career choice, creating recruitment difficulties and skills gaps at management level.

For some employers there is an element of social responsibility in engaging with higher education. The armed forces have traditionally had a policy of ensuring that personnel gain qualifications that have value in the civilian labour market, and, as well as providing certificated training and sponsoring higher education courses, can support additional learning for leavers (House of Commons Defence Committee 2013). Some charitable organisations provide professional training as a means of recruiting lawyers, social workers or counsellors from local communities or underrepresented groups. There is also evidence of companies seeking to improve access to professional careers for those who may not have considered them (e.g. Caplan 2016). There is, however, indication that work-based or apprenticeship-type degrees are not necessarily effective in improving social mobility on their own. Syedain (2011) comments that increasing competition for places on sponsored degrees may lead to a similar pool of entrants as for graduate recruitment; acceptance rates for apprenticeships with sought-after employers, for example, can be as low as 3% (Hottass 2016), less than for applications to the most selective full-time degrees.

In some instances employer motivations may be more superficial, such as the desire to subsidise staff development or have a university 'stamp' for reasons of prestige. Gustavs and Clegg (2005), in the example discussed previously, describe such an instance where a lack of commitment to higher learning resulted in accredited programmes becoming a peripheral activity, with staff more likely to be attracted to them as a means of leaving the organisation.

The motivations of individuals in the workforce are also noted as a potentially important driver both for engagement outside of formal collaborations, and for supporting and sometimes precipitating employer engagement. Norman and Jerrard (2015) comment that more experienced workers can provide the impetus for engagement themselves, for instance in response to a career barrier such as a lack of management skills. Both Stephenson and Saxton (2005) and Costley and Lester (2010) discuss the attractiveness of work-based provision, particularly but not only at postgraduate level, to self-employed professionals and to decision makers in businesses. In unionised workplaces, Davies (2008) noted that Union Learning Representatives were beginning to become involved in promoting higher-level learning opportunities. Roodhouse and Mumford (2010) carried out a survey of employee attitudes to learning in large businesses, which found a strong desire (80%+ of staff) for professional development. While accredited provision was favoured and full and postgraduate degrees seen as the most desirable qualifications, it was notable that the workplace was favoured as a location for learning, and employers, industry and professional bodies seen as the most credible providers.

4.2   Barriers to engagement

A number of specific barriers to engagement are identified in the literature, both from the perspective of employers and from that of higher education institutions themselves.

A common complaint reported from employers' perspectives is that they perceive institutions as bureaucratic and slow, inflexible, not understanding the needs and timetables of business, concerned with academic curricula and theory-driven teaching rather than relevance to practice, and steeped in their own language, which may differ between institutions and not be particularly precise or intelligible (e.g. Nixon *et al* 2006, Boulden and Petrov 2008, Drake *et al* 2009, Kewin *et al* 2011). Drake *et al* (2009) also identify funding complexities as off-putting to employers. Unless they are simply sponsoring staff on existing programmes, employers are generally reluctant to engage with off-the-shelf or unadapted provision (Wilson *et al* 2005). In retail, one of the sectors with the lowest uptake of higher-level learning and highest skills gaps and turnover rates among managers (People 1st 2015), employers can have both a low awareness of qualifications, and also see what is on offer as not particularly fit for purpose (Hart *et al* 2007).

Engagement with apprenticeships and similar programmes may also be limited by both the relevance of available programmes, and the need for the employer to adopt ways of organising and working that meet with external scrutiny and provide support for learning. Mieschbuehler *et al* (2015) identify cost, difficulty in finding an appropriate apprenticeship framework, and the need to make the workplace 'apprentice-friendly' as significant barriers. It is currently unclear to what extent the move to employer-led apprenticeship standards will lead to more apprenticeships becoming available that meet the needs of individual employers.

Traditionally, smaller firms – SMEs, and in particular 'micro businesses' with fewer than ten staff – have been relatively absent from engagement with higher education, even where they are involved in employing apprentices at levels 2 and 3 or have links with further education colleges. Discussion of barriers perceived specifically by smaller organisations and businesses is limited, but factors in some sectors include doing work that does not require

high skill levels; perceptions of higher education as not relevant, difficult to approach or not concerned with the needs of smaller businesses; and the time and cost involved, particularly for doing anything more than sending staff on courses (Nixon *et al* 2006, Newton *et al* 2015). Smaller businesses are also reported as frequently having highly specific or contextualised skill needs, requiring just-in-time solutions, preferring to work with private providers, and not being particularly good at articulating their own needs; these are all factors that potentially involve a disproportionate investment of time and funds by higher education institutions (Parsons *et al* 2006, Bolden and Petrov 2008, Ahlgren and Engel 2011).

From institutions' perspectives, barriers to engagement include perceptions that workforce development is a diversion from mainstream work, undermines academic standards, and is not cost effective or is too risky (Lester and Costley 2010, Lee 2012). Garnett (2007) and Bolden and Petrov (2008) add infrastructures that are geared to educating young full-time students and career structures that do not reward employer-facing activity. As will be discussed in the next chapter, supporting work-integrated learning requires a paradigm shift and change of pedagogy that is uncomfortable for some academics: it has been described as a 'disturbing practice' that 'challenges the disciplinary structure of the university' (Boud 2001). In relation to apprenticeships, Anderson *et al* (2012) report barriers to involvement driven by factors such as lack of a level funding playing field, lack of policy clarity, and the separation of 'knowledge' and 'competence' qualifications in the 2011 SASE (see chapter 2); Bravenboer (2016) discusses continuing separation between higher education and skills policy; and Lee (2012) indicates that perceptions of apprenticeships have been generally negative among universities. While the policy factors are partly historic, they may still have a residual effect on institutions' enthusiasm for involvement in higher and degree apprenticeships.

4.3   Solutions and success factors

The literature includes a large number of examples and recommendations relating to successful collaboration, many of which appear general across contexts and sectors, with some that are more specific to particular applications.

The importance of 'champions', or at least highly committed staff, from both organisations is widely commented on (e.g. Edmonds and Bainbridge 2011, Spear *et al* 2011, Haddleton and Minton 2011), along with their ability to work effectively together. This includes senior staff members who are able to 'sponsor' collaborative projects and take calculated risks to make things work, as well as those involved at the initial point of contact and in development and delivery (Kewin *et al* 2011). The presence of academic staff who have credibility in the industry and understand the business context is widely mentioned as important, but the willingness of the employer to engage with higher education is also stressed; Whitemore *et al* (2011) for instance describe the benefit of educating employers in the value of work-based provision, and working with them in partnership to develop relevant solutions. Both Bolden and Petrov (2008) and Kewin *et al* (2011) note that academic staff would be aided by a career structure that values them engaging with employers. An example of this is provided by Whitemore *et al* (2011) in the form of a Workforce Development Fellow scheme, which provides a parallel structure to the Teaching Fellow scheme by supporting 'academic entrepreneurs' who work with employers as well as undertaking relevant research.

In some instances, a third party has been used to facilitate engagement. Examples include the use of a consultancy (Bravenboer 2011); the former Employer-based Training Accreditation Service (Dhillon *et al* 2011); 'skills brokers' of various kinds (Bolden and Petrov 2008); and the use of 'industry champions' who act as go-betweens to promote industry needs in the university as well as higher education programmes to the industry (Overton and Lemanski 2016). While most of these cases were successful, the more limited effectiveness

of the last suggests that intermediaries cannot be expected to substitute for academic staff understanding and engaging with employers.

Several authors describe examples or discuss principles for successful collaborative working. As a general principle, this can be seen as involving a solutions-led rather than product-led approach, with flexibility to support learning that fits with the business timetable (Kewin *et al* 2011). Other general principles include the institution working with the employer as a partner rather than purely as a client, agreeing and documenting shared objectives early on, addressing cultural differences between the employer and the institution, and balancing or integrating practice and theory to meet the requirements of both parties (Drake *et al* 2009, Baxter *et al* 2009). Examples of how this has been done include structured, employer-led meetings to identify needs, develop complementary aims, build relationships, clarify responsibilities and build mutual trust (Benefer 2007), as well as carrying out primary research to establish both broad business needs and the more specific objectives to be met (Kemp and White 2011).

For companies whose engagement is driven by specific business needs, collaboration is often dependent on using or building on existing staff development courses and processes as part of the overall programme, and the ability of the institution to manage this effectively is typically a major factor in ensuring a successful relationship (Edmonds and Bainbridge 2011, Minton and Fenwick 2011). This can necessitate developing a thorough understanding of the employer's business and working environment, ensuring that the programme can be integrated into the way in which the organisation works, and also making sure that it complies with academic standards and results in learning that has value beyond the specific context (Drake *et al* 2009, Billaney 2012).

The ability of higher education providers to award valued qualifications is cited as particularly attractive to employers wishing to gain accreditation for in-house provision or link workplace learning to academic awards, and there is evidence that employers may be less concerned about the provider delivering workplace-based training itself (Kewin *et al* 2011). However, the benefits of certification are likely to be greater if aligned to business needs and evaluation processes, rather than taken for granted (Pearson and Helyer 2011). In areas that have professional or trade accreditation, alignment between academic qualifications and qualified status, licensing or professional membership is also valued (Kewin *et al* 2011, Banim and Evans 2008). In regulated or more formal professions it is expected that the degree should at least support professional requirements, but as described previously there are opportunities for more formal relationships where negotiation with the professional body can enable both sets of requirements to be met together (Bravenboer and Lester 2016).

With regard to small firms, although there is limited literature on factors making for successful engagement specifically with qualification-bearing higher education, some of the principles discussed in relation to apprenticeships and institutional involvement in staff development are relevant. Several sources comment on the effectiveness of working initially with umbrella organisations such as trade associations and Chambers, with larger organisations that can bring in smaller companies as part of their networks or supply chains, and with Local Enterprise Partnerships (e.g. CFE Research 2016). Smith *et al* (2013) for instance describe working with a Chamber to develop a leadership and management programme that at the time of writing had successfully attracted nine cohorts of students from different companies, and Banim and Evans (2008) developed a programme with a regional Chamber with the intention that it would then be delivered largely by the Chamber itself.

Both Rake (2016) and Meller (2016) comment on the value of large employers engaging with smaller firms to aid their involvement. In the engineering and manufacturing sector there is a tradition of large companies working with smaller ones to support training for their staff.

Strategies include simple 'overtraining' (Twigg 2012), i.e. training more apprentices than they need; training apprentices for other firms, either to maintain the viability of their training function or to support supply chains (Lewis 2014); and pointing unsuccessful but promising applicants towards suppliers and subcontractors (Hottass 2016). Specific factors that are mentioned include the institution being able to accredit bespoke programmes quickly through devices such as shell or negotiated modules (Kewin *et al* 2011), getting involved in needs analysis and planning (Bolden and Petrov 2008), and, for apprenticeships, explaining how the system works as well as potentially having a direct involvement in recruitment (Ofsted 2015). The ability to understand and work around workplace demands also tends to be more critical the smaller the size of the firm (FSB 2006).

Finally, some institutions have found that a separate workplace-facing department or unit enables them to develop capability focused on work-based and work-oriented learning and to work more effectively with employers. Advantages include being able to work outside established faculty structures; to attract and develop staff to work specifically in this field; and to use a devolved structure to work more nimbly (Whitemore *et al* 2011, Moss 2016). In some instances this has led to structural realignment within the institution (e.g. Garnett 2007), and a sense is also emerging that work-based learning is becoming a transdisciplinary field in its own right, with distinctive research concerns and pedagogies (Costley and Armsby 2007, Garnett 2009). An alternative or supplementary strategy has been to induct representatives of each school or faculty into a work-integrated learning ethos, so that they are able to act as co-ordinators and mentors in conjunction with discipline-based staff (Workman *et al* 2011).

5 Programme delivery, assessment and quality assurance

This chapter discusses the principles and practices of how programmes are operated, how responsibilities are shared between different partners, and how academic quality is maintained. It is divided into seven sections, beginning with recruitment and selection, then considering pedagogical principles, curricula, learning and teaching, assessment, and staff development. A final section summarises matters relating to quality assurance.

5.1 Recruitment and admissions

Recruitment and admission to work-integrated degrees needs to consider the requirements of the higher education institution, the employer (for recruitment or for sponsorship, where staff are already employed), and in some cases a professional body. The literature relating to practices in this area is relatively sparse, and it generally treats recruitment as unproblematic or explores potential tensions between employer and institutional requirements.

Recruitment and selection may be institutionally-led, as in the health sector where application is to a 'full-time' work-integrated course rather than to the employer; employer-led but co-ordinated, as in accountancy where the employer is approved as a training practice by the professional body, and recruits applying the latter's criteria as well as its own (in the case of integrated degrees, the institution's criteria may be linked to those of the professional body); or employer-led, as in the case of most apprenticeships and similar programmes (e.g. Brown *et al* 2015). In some cases employer-led recruitment can lead to a two-stage process where the employer either makes a provisional recruitment decision or identifies a staff member to go on a programme, followed by the institution's selection process (Spear *et al* 2011); clearly, this may be inefficient if there is a gap between the employer's understanding of what is needed and that of the higher education provider.

A concern is noted that employers who are paying for programmes may be able to select or put forward staff who do not meet institutional criteria, and a question raised about how the institution handles the resulting tension (QAA 2010b). This is also discussed by Brown *et al* (2015) in regard to teaching, where they suggest that providers whose traditional student allocations have been cut will be under pressure to accept anyone put forward on school-based schemes. Bravenboer (2012) discusses admissions in the context of tensions between the access agenda and the more traditional practice of recruiting according to academic achievement; he proposes a distinction between 'admissional' modes of entry, based on standard procedures, and 'recognitional' ones that are more suited to sponsored programmes and involve exploring relevant achievements and abilities. The latter fits better with situations where the institution's role is to check ability to benefit and, if relevant, identify potential for accrediting prior learning, with the employer taking responsibility for the recruitment strategy and initial selection process (cf. CIPD 2014 in relation to apprenticeships). Bravenboer (2011) discusses how the collaborative agreement between institution and employer can include mutual understanding about who the programme is designed for, effectively delegating selection to the employer; this is not seen as a threat to academic standards, as the institution maintains control of all award-making and quality assurance functions.

Conversely, there is some evidence emerging from recruiters' web sites of employers' entry requirements for degree apprenticeships mirroring or exceeding those for full-time degrees. In particular this includes asking for high A-level grades without mention of vocational qualifications or progression from level 3 apprenticeships. This is hardly surprising given the

level of competition for some schemes, and reflects the previously mentioned concerns reported by Syedain (2011) about recruiting from the same pool as for full-time degrees.

5.2   Pedagogical principles

Shulman (2005) discusses the idea of 'signature pedagogies' in professions. He suggests that different professions develop their own distinctive pedagogies, each with its own surface structures (the type of teaching and learning activities used), deep structures (the assumptions about how best to impart knowledge and develop skills), and implicit structures (beliefs about professional values, attitudes and dispositions). Even where there are different schools of thought or epistemologies within the same profession, signature pedagogies tend to become a pervasive and routine feature, something that also makes them resistant to evolution and change whether to incorporate advances in pedagogical practice or to reflect evolution and reconfiguration in professions themselves.

Work-based or work-integrated learning can be identified as developing its own set of pedagogical principles (e.g. Lucas 2010, Costley and Dikerdem 2011, Kettle 2013), and potentially its own signature pedagogy (Dalrymple *et al* 2014). These reflect the idea of the learner as an active agent and creator of meaning; the workplace as a legitimate site of learning and knowledge generation, rather than application only; and that learning objectives, processes and products are to a greater or lesser degree the subject of negotiation between learner, employer and institution, leading to a 'triadic' learning endeavour (*ibid*.). Associated practices include the recognition of prior learning, programme planning via the use of learning agreements or contracts, the use of reflection sometimes linked to a 'learning cycle' model (Kolb 1984), flexibility as to 'pace, place and mode' (Gordon 2014), induction into relevant methodologies, and the use of negotiated projects. Epistemologically, there is recognition that knowledge is reconceptualised between theoretical representations and both potential practice (i.e. knowing what to do) and actual practice (Winberg 2007), as well as being created through practice (Eraut 1985).

The way in which these principles are applied differs according to situation. Kettle (2013) for instance notes the need to distinguish the different needs of learners who are in work, which includes apprentices and professional trainees, and those where work forms part of a nominally full-time programme. Differences also relate to stage of development: Brown *et al* (2007) for instance use two examples to distinguish between an 'affirmative' or curriculum-led model, illustrated by reference to a foundation degree and designed to support initial development and ability to do the job, and a 'transformative' or more open-ended one more appropriate to postgraduate level and geared to practitioner development and creating change in the workplace. In the first, there are predefined learning objectives, and methods are used that support their achievement, evidencing and conceptualisation; while in the second, the process is more individually driven and open-ended, and involves learning as part of a community of practice. Brown *et al* comment that these represent opposite ends of a spectrum; progression between them can be envisaged on a long programme such as a full degree.

The development of work-based learning as a 'field of study' (Costley and Armsby 2007) with a distinct pedagogy poses a challenge both to the discipline-based organisation of knowledge, and to the signature pedagogies of individual professions. Particularly in programmes for school leavers and those designed to meet the requirements of professions, this can mean that different knowledge structures and approaches to teaching and learning can exist in parallel (Dornan 2005, Edmond *et al* 2007). The potential to reconcile these appears to be greater in some fields than others; Lucas (2016) for instance describes a pedagogy in engineering that, despite the high level of technical content, does not appear to be difficult to integrate with the principles outlined above. Dornan (2005) on the other hand notes the different philosophies associated with biomedical science and patient-oriented

care in medicine; these lead to parallel pedagogies in the same programme, one more conventionally academic and the other closer to the work-based principles discussed above (Dornan *et al* 2007). The need for appropriate balances is suggested by Brown *et al* (2015) in their discussion of school-based teacher training, where they discuss a concern that programmes are becoming concerned primarily with skill formation and policy-driven pedagogical knowledge at the expense of underlying theory. It is perhaps relevant that there is evidence indicating that professional bodies are on the whole becoming less concerned with the transmission of a detailed body of knowledge, while placing more emphasis on the need for a deep understanding of underlying principles (Lester 2008).

5.3   Curriculum design and development

In parallel modes of learning (chapter 3), it is usual for an academic or technical curriculum of some form to apply to the off-job component, while the on-job part is either treated purely as 'experience' or has a separate set of objectives, as in the German dual system (BIBB 2013) or in the training contracts used by some professional bodies. A certain amount of integration is sometimes found through the use of a work-based project (e.g. Oxford Brookes University 2016, in respect of an accountancy degree linked with a professional programme, and Lester 2016a, in relation to a marine engineering programme). In integrated programmes, the curriculum aims to be more holistic and, depending on the aims of the programme, to bring together content driven by professional and disciplinary requirements with the situational demands of the workplace. An example of curriculum drivers at opposite ends of the spectrum can be seen in Dornan's discussion of biomedical science in medicine (Dornan 2005), compared with the 'transformative' programme outlined by Brown *et al* (2007) (as discussed in section 5.2).

Examining case studies from the literature indicates a continuum between programmes where the curriculum is negotiated between institutions and national or representative bodies, for which a longer development and validation process is common, and where it is agreed between the employer (or consortium) and institution, possibly with reference to a professional body. Particularly to aid development of the latter type of programme, several higher education providers have developed validated curriculum frameworks that facilitate the approval of work-based and work-integrated programmes. These reflect the pedagogical principles discussed in the previous section; support a spectrum of programmes, from those that are driven by professional body requirements through to those that are developed with specific employers or negotiated with individual learners; enable programmes to be validated quickly; and have a built-in quality infrastructure that fits within the overall institutional framework. Drawing on Willis (2008), Graham *et al* (2008) and Bravenboer and Workman (2016a, b), these frameworks typically include:

- A prevalidated structure of awards, typically from small certificates at level 4 to full bachelor's and master's degrees, providing the ability to negotiate specific award titles within the overall structure. Approval of awards and programmes within the structure is delegated locally.
- A set of level-based criteria or indicators that reflect the requirements of the FHEQ, while being capable of use as the basis of generic assessment criteria.
- Prevalidated 'shell' modules of different sizes and levels, where specific content is developed with individual employers, used to incorporate in-house training, or negotiated with individual learners (e.g. to support practice and project-based learning).
- Generic modules oriented to work-integrated learning, designed to support, for instance, investigation, critical thinking and analysis, reflection and evaluation, ethical standards and 'ethical literacy' (Lunt 2008), and aspects of management.
- A facility to incorporate existing subject-based modules.

- A facility to accredit previous certificated or experiential learning, based on the principle of 'focussed credit' (Garnett 1998), i.e. relevance is decided according to the focus of the programme rather than being based on matching learning to predefined course content.
- The use of partnership and learning agreements to set out the overall programme and to agree the objectives and assessment criteria of negotiated modules.
- Assessment that uses or draws on workplace activity, integrating practice, reflection and theory.
- Quality assurance and approval processes geared to applying the institution's framework to the agreed programme.

Points made in the literature relating to enhancing the quality of curricula include ensuring close linkage to practice requirements (Gaskell and Beaton 2010), the need for clear alignment between work and learning goals (Drake *et al* 2009), and the need for developers to be aware of workplace dynamics and how the programme will impact on the workplace (Kubiak *et al* 2010). Dornan (2005) comments on the need to avoid detailed objectives that do not reflect the realities of practice, while Edmond *et al* (2007) and Edmond (2010) also comment that beyond meeting formal criteria, attention needs to be given to learners' immersion in the relevant community of practice as active participants in the occupational field.

A variation on the use of shell modules is described by Arnold (2011), in the form of a 'wrapper' or concentric module, which enables the university to build deeper learning appropriate to a higher education qualification around workplace skills development. Three layers or 'wrappers' can be present in the module, consisting of core content, which could include in-house training or a skills assessment; extended learning, dealing with interconnecting ideas, related themes and discussion of relevant literature; and meta-learning, exploring application in the workplace and reflection in context. This approach also has relevance to assessment and quality assurance, discussed in sections 5.5 and 5.7, particularly where there is a need for reasons of licensing or dual certification to incorporate assessments that would not by themselves support academic credit.

Finally, a particular feature of work-integrated curricula in degree programmes is the use of work-based projects. These often substitute for the dissertation in a full-time degree, although projects may feature throughout the programme rather than only at the end. Talbot and Lilley (2014) indicate that these have a number of features that distinguish them from more traditional dissertations or degree projects. These include investigation that is geared to problem solving and practical activity, rather than researching principally propositional knowledge; openness to a wide range of methodological and epistemological traditions, including in pragmatic combinations ('bricolage', Walsh 2011); and outputs other than project reports, for instance work artefacts accompanied by a narrative. They also comment that the location of learners in work settings means that ethical matters tend to be more prominent and in some cases more challenging than in traditional dissertations.

5.4 Learning and teaching methods

As discussed in the previous sections, the literature indicates that work-integrated programmes call for different (or at least additional) methods of facilitating and supporting learning than do 'parallel' or full-time ones. The need to ensure integration of theory and practice and to facilitate workplace learning that goes beyond simple skill development suggests a need for methods that do not necessarily mirror those of either classroom teaching or vocational training, and which are typically more informal, independent and team-based (Moore 2007).

The literature suggests that while the balance of methods used in specific work-integrated programmes will differ, a blend of approaches will normally be employed, with some features that are common if not universal. The spectrum discussed by Brown *et al* (2007) is again useful; at one end, commonly reported methods include online portals and resources, taught sessions, and one-to-one support both remote and face-to-face (e.g. Bromley *et al* 2012, McCray and Palmer 2009, Armstrong 2016). Alongside these, programmes use methods for planning, capturing and reflecting on work such as learning logs, practice projects, and portfolios or work artefacts accompanied by explanatory accounts or discussions (Lester and Costley 2010, Minton and Fenwick 2011, Moss and Hackett 2011, Kettle 2013, Nottingham and Akinleye 2014, and Talbot and Lilley 2014). Benefer (2007) comments on the value of live work-based projects to increase the immediate applicability of the programme and integrate academic skills and theory with practice, while Hattie (2009) discusses the need for 'visibility of learning processes' – attention to learning as it is happening, clear work goals that are reflected in learning tasks, clear and plentiful feedback, and coaching to improve learning dispositions and strategies.

In the context of working with smaller, more distributed employers, Felce and Purnell (2012) describe the use of an e-portfolio based strategy for (initially 'bite-sized') programmes with smaller firms, which link into a foundation degree. This avoids the need for face-to-face contact but includes the use of learning activity blogs on which the tutor provides feedback, frequent online assessed learning activities, and mid and end-point evaluation. This is described as flexible and scalable, and as working for learners, employers and the institution, but its ability to support larger sequences of activity such as work-based projects is unclear.

Towards the 'transformative' end of the spectrum, dominant approaches move away from prescribed content and tasks to more individual activities such as action learning, critical reflection, investigation, and to what has been termed 'practice as research' (Lester 2016b). At this level reflection is seen as essential to develop leadership abilities (McCray and Palmer 2009) and as supporting more agile responses to change (Hegarty *et al* 2011). Content is more likely to be presented via resources such as web-based portals (Gordon 2014) as well as short seminar or masterclass-type sessions (e.g. Smith *et al* 2013). Peer-group or practice-community learning, for instance using action learning sets and face-to-face or web-based discussion groups, are reported on healthcare professional practice degrees (Neville *et al* 2008, Gaskell and Beaton 2010) and leadership programmes (Brown *et al* 2007, McCray and Palment 2009). While they are less prominent on apprenticeship-type programmes, the use of learning communities is described, for instance by Drake (2009) in a degree designed for teaching assistants.

One-to-one contact and support is widely viewed as essential in work-integrated programmes, and commonly involves both a higher education tutor and a workplace mentor or supervisor. The central role of the mentor is widely discussed, e.g. Henderson (2010) in relation to social work, Major *et al* (2011) and Dalrymple *et al* (2014) for work-based learning generally, Ofsted (2015) in apprenticeships, the Willis Commission (2012) for nursing, Dornan (2005) in medicine, Marshall (2012) for midwifery, Knight *et al* (2015) and Kubiak *et al* (2010) for healthcare assistants, and Benefer (2007) in engineering. The value of the mentor can be a practical one in terms of ensuring access to opportunities and resources in the workplace and, if necessary, mediating between the learner and managers or other colleagues, but he or she can also act as a coach or sounding board, encourage reflection, and help the learner to recontextualise knowledge gained from a classroom or similar setting (Evans *et al* 2010). The mentor role may be less critical for successful participation and achievement in more individually driven learning, although one-to-one support can be important for mature learners – including senior managers – who have been out of formal learning for some time (Shaw and Godfrey 2011), and can be a factor in helping them to balance learning with other commitments (cf. Dunne *et al* 2008).

5.5   Assessment

Assessment methods typically follow the structure and philosophy of the programme. In parallel-type programmes they can be separated out with normally only the course-based assessment (and any integrating project) affecting the final academic outcome, and any assessment of workplace performance being treated as a separate matter that is recognised and, if necessary, certificated separately. In fully integrated programmes, assessment tends to look for more holistic capability, reflecting the ability to integrate knowledge and skills in larger sequences of action (after Eraut 2004). An intermediate position is also found where aspects of workplace performance are assessed separately, but either contribute to overall certification or are further developed for academic assessment (Arnold 2011).

Yorke (2011) comments that assessment practice has tended to lag behind developments in work-based and work-integrated learning, and that integrated assessment requires a paradigm shift to accepting that work-based and academic outcomes can be assessed together. He goes on to provide an overview of principles for assessing higher-level work-integrated learning. Drawing on Yorke and Knight (2006), he comments that assessment needs to encompass understanding; the use of skilful practices in context; self-efficacy; and metacognition. Assessment methods need to be appropriate and valid for real-life situations, respect the situated nature of practice, and recognise that learners need to be able to deal with complexity and 'wicked problems' (Rittel and Webber 1973) that do not lend themselves to straightforward solutions; in most situations this militates against the use of tightly defined learning outcomes or competence statements. Similar principles are outlined by Irving (2008) in her discussion of the need to assess capability, which is integrative and has an open-ended quality, rather than competence, concerned with immediate job performance.

Yorke (2011) states that while a 'realist' approach (using 'measurable' and context-independent criteria, such as detailed learning outcomes or occupational competence standards) may be necessary for some aspects of assessment, they are inadequate to assess practice in context, where a 'relativist' approach is needed that uses broader and more generic criteria that can be interpreted situationally. The use of generic criteria, normally common across an academic level and capable of being interpreted or adapted into a wide range of different contexts, is now fairly well established in work-based higher education, particularly for negotiated programmes; a short description is provided by Workman (2009), although the detail of how these criteria are applied in practice tends to reside in internal guidance rather than published literature.

An approach that is employed widely in some institutions is the use of evidence from work, normally along with appropriate reflection on it, to capture higher-level abilities that meet the type of academic criteria noted above. A variety of methods are discussed for this kind of assessment, generally mirroring the learning and teaching methods discussed in section 5.4. Common approaches include the use of reflective reviews based on workplace learning, reflective portfolios, and work-based projects (Minton and Fenwick 2011, Kemp and White 2011, Moss and Hackett 2011), as well as in some cases 'professional artefacts' (Nottingham and Akinleye 2014), which can include video and audio productions and recorded ephemera, accompanied by a narrative or discussion. A principle that applies across these is that they capture learning at and through work, and are verifiable (Arnold *et al* 2011). Irving (2008) argues that reflective discussion around critical incidents may have more validity than a written narrative, as it can be more revealing and explore in greater depth the reasoning employed in the practice situation; she likens this form of assessment to a viva for a thesis or dissertation.

In some programmes there is a need to incorporate assessment methods that are required for professional body recognition, trade certification, or parallel qualifications in the Ofqual

system. These can include written examinations (Evans *et al* 2010) and assessments of work skills or competence (Arnold 2011), although the latter tend to be more a feature of programmes at levels 4 and 5; the trend for professional bodies awarding qualified status is towards a more open version of competence (Lester 2014, Bravenboer and Lester 2016), closer to what Irving (2008) describes as capability. In these situations there can be a tendency towards over-assessment as separate methods are used to meet the requirements of each awarding authority. Billaney (2012) describes the importance in these situations of modelling assessment processes from the student's perspective in order to aid integration and avoid creating duplication and excessive workloads. Arnold (2011) describes a specific solution involving the use of the layered or 'wrapper' modules described in section 5.3, where either the assessment includes but goes beyond the external certification requirements, or a linked task is added that meets higher education requirements.

Very little mention is made in the literature of final awarding decisions and appeals specifically in relation to work-integrated programmes. There is an assumption throughout the literature – sometimes made more explicit, e.g. Bravenboer (2011) – that responsibility for academic credits and awards remains with the institution, including where modules are validated for employer delivery and assessment. The linkage of degrees to professional recognition is sometimes reported as a complicating factor, but the award of the academic qualification is still fully within the oversight of the degree-awarding institution. In relation to appeals, two points can be made. The first is that appeals against assessment decisions go to the awarding authority, i.e. the institution for the degree or academic credit, and in the case of dual awards the professional, licensing or awarding body for their certification (CMI 2015). The second is that work-integrated learning opens up additional potential for appeals and requests for delayed submission in the form of problems caused by workplace factors and lack of support from employers; these point to a need for the institutional appeals process to be both robust and mindful of these factors (Irving 2008), as well as aiming to reduce complaints and appeals through effective partnership agreements and quality assurance (QAA 2010b, Bravenboer 2011).

5.6   Staff roles and staff development

The literature indicates a 'baseline' situation, reflecting the norm in parallel programmes, where the employer provides workplace supervision, mentoring and training and possibly assessment of workplace competence or the signing off of a log, while the institution provides teaching, general facilitation and tutor support, and assessment of anything that contributes to the academic qualification. In integrated programmes there tends to be both greater liaison between these roles and crossing over between them, with Arnold *et al* (2011) for instance suggesting that delivery and assessment roles need to be decided on the basis of "who is best placed, most expert and has capacity" (p146).

Mentors and workplace training supervisors may simply be nominated by the employer, agreed between the institution and the employer, or be subject to more formal approval by a professional body or regulator, as in nursing. In most cases it appears to be assumed that the mentor is a person in reasonably close contact with the learner, although there are instances where the mentor or training supervisor is in a different part of the company (e.g. in an HR role), in another company, or provided by a third party such as an industry or professional body. Henderson (2010) for instance describes a situation in social work where a shortage of work-based mentors who are qualified social workers has led to some trainees having both an on-site supervisor (who may not be a social worker) and an off-site practice teacher. A disadvantage in relying on front-line staff can be that they have little time outside their normal work, particularly if the mentoring role is not seen as a priority; this is reported by Kubiak *et al* (2010) for healthcare assistants where nurses have been allocated as mentors. Crossover of academic staff to provide direct support in the workplace is rarely reported, although school-led routes for teacher training are leading to experimentation with

the respective roles of the school (employer) and higher education provider in educating and supporting new teachers; one strategy is that academic staff spend more time in the school supporting trainees (Brown *et al* 2015).

A more common situation in integrated programmes is for the employer to take on some of the teaching, and sometimes assessment. This is particularly the case where existing or modified staff development programmes are incorporated into, or validated as part of, a higher education qualification (e.g. Edmonds and Bainbridge 2011, Bravenboer 2011), as well as collaborative programmes where the teaching role moves from institution to company, with training and support from the former (e.g. Moss and Hackett 2011, Meakin and Wall 2013). Employer involvement in assessment is more commonly in the form of formative assessment that may in some instances inform academic assessment, for instance through progress reviews, appraisals, comments on logs and portfolios, and providing commentaries on practice activities. In the Ofqual-regulated system it is fairly common for this to become part of the formal assessment via staff registering with the approved assessment centre and qualifying as an assessor, and a similar arrangement can also be operated by professional bodies. For higher education qualifications this has not been as common, largely due to concerns about quality assurance and conflicts of interest between the employer/mentor role and that of assessor (Shearman and Seddon 2010, Yorke 2011); in some instances it has been explicitly excluded (e.g. Oxford Brookes University 2016).

Formal employer involvement in assessment is, however, reported as increasing, particularly in programmes where the employer has a strong role in development and teaching (e.g. Bravenboer 2011), and to some extent in foundation degrees (Woolf and Yorke 2010); the latter report 23% of employers in their study as having an involvement in assessing project work, as opposed to 40% who assess workplace performance only. In these models the institution retains oversight of the assessment process, but with progressive trust in the employer. Minton and Fenwick (2011) describe enabling in-company staff to assess programme components after they had completed a 30-credit assessment course, initially with second marking from the university, which became reduced to sampling once the university was satisfied with their assessments.

While employer-based tutors and assessors may be formalised as associate staff of the institution, more formal integration of practitioners as academic staff is only occasionally mentioned, principally in the health sector (e.g. the presence of practitioner-lecturers in occupational therapy, as reported by Baxter *et al* 2009). The only widespread use of practitioner-academics encountered in the literature is in medicine, where it is integrated into doctors' career pathways; the Willis Commission (2012) advocates a similar structure in nursing.

Appropriate staff development for roles associated with work-integrated learning is widely reported as important. Some institutions provide generic programmes for mentors and workplace teachers, such as the 40-credit, level 6 programme at Derby University (Moss and Hackett 2011, Bromley *et al* 2012), Chester's Certificate in Work-based Learning Facilitation (Irving 2008) and Gloucestershire's programme for supervisors who have limited experience of working with higher education (Cambrook and Lyddon 2011). These can recognise that the mentor is a subject expert and may be a proficient trainer, but need not have experience of supporting learners who are enrolled on a higher education programme. Compulsory training for the mentoring role appears uncommon outside of professional body requirements, such as those for nurse mentors and social work practice teachers, and in relation to a work-integrated degree was encountered only for accountancy project mentors (Oxford Brookes University 2016). However, in both nursing and social work there was indication that greater institutional involvement in mentor development would be beneficial (Henderson 2010, Willis Commission 2012). For involvement in formal assessment, some

institutions have required completion of a short course (e.g. Minton and Fenwick 2011, Yorke 2011, Meakin and Wall 2013), although this is not universal and Yorke reports some difficulties in gaining employers' commitment to train staff as assessors, while Meakin and Wall report reluctance on the part of the staff themselves to undertake the assessment role.

The literature also comments on the need for relevant development for academic staff. Work-integrated learning creates a need for tutors who can act as facilitators and resources, with a different role from that of a subject-expert lecturer (Lester and Costley 2010, Gaskell and Beaton 2010, Kettle 2013). Major *et al* (2011) have found that it takes most academics up to two years to 'convert' to being work-based learning tutors, while Talbot and Lilley (2014) note conflicts and uneasiness among staff in accepting a 'purposive' or transdisciplinary view of knowledge. Major *et al* discuss the need to understand work-based learning, what is involved in supporting it and how it differs from classroom teaching, and describe Chester University's 60-credit certificate, which comprises three modules covering the theory of work-based learning, associated systems and processes, and practices. However, Whitemore *et al* (2011) also comment on the need for staff to understand how to work in the business arena, while Eyres *et al* (2008) identify areas that include familiarity with policies and strategies, funding opportunities, potential partners and institutional resources, as well as more pedagogic concerns. The latter also point out that most of these matters are also important to administrative as well as academic staff.

5.7   Quality assurance and enhancement

Opinions in the literature vary on the extent to which current quality systems and processes are appropriate to, and effective for, work-integrated programmes. QAA (2010b) acknowledges that work-integrated provision is operating in a different environment from full-time higher education, and that views differ on the extent to which current procedures are suited to it. The QAA report goes on to state that quality assurance needs to be to the same standard as for other provision in order to preserve the integrity of higher education qualifications, but also suggests that processes may not need to be identical. The balance of opinion seems to be that current approaches are workable, but not ideal. Felce *et al* (2011), in their discussion of quality assurance for employer-based training programmes, comment that the objective should be to interpret existing institutional standards and procedures rather than change them. On the other hand, Garnett (2009) describes a number of internal and external reviews of provision at Middlesex, and concludes that while in all cases work-based and work-integrated provision was strongly endorsed, there was a tendency to view it from within existing, disciplinary paradigms as a mode of study, rather than recognising the more transdisciplinary nature of learning in and from the workplace.

A risk-based approach is discussed by QAA (2010b), and supported by Felce *et al* (2011). This typically spans the risk to the institution's reputation; its finances, including the effect on learners if a programme collapses; and its academic standards, culture and quality, including issues of the workplace being unable to support the relevant learning. Haddleton and Minton (2011) outline some principles for quality assurance in an employer-facing environment. They suggest that it needs to be proportional, i.e. rigorous but not onerous, contextualised for the workplace (for instance involving employers in curriculum design), and founded in the realities of work-based activity. They also comment that while Subject Benchmark Statements are often not particularly relevant, the FHEQ descriptors are, and credit level indicators can be more so (the 2010 SEEC descriptors, for instance, were written to include work-based settings, and the 2001 Ufi ones specifically for them). The limited value of subject benchmarks is also mentioned by QAA (2010), although their relevance for programmes linked to specific professions is likely to be greater, along with the standards and criteria produced by professional bodies (Shearman and Seddon 2010).

In relation to risks connected with the institution-workplace relationship, Gibbs and Armsby (2010) comment on the different values that can be espoused by each, and the danger of letting the former's be subsumed by the latter's to the detriment of academic quality. Similarly, Lester and Costley (2010) discuss potential 'reverse colonisation' of academic knowledge by workplace knowledge as partly a paradigmatic matter, but also warn of a potential loss of criticality. Minton and Whitemore (2011) stress that while curricula can emerge from or be contextualised into the workplace, there is a need to ensure that they maintain intellectual rigour and can be related to academic standards; similarly, Edmonds and Bainbridge (2011) comment on the need for the employer to recognise that higher education is not just about providing higher-level skills, with implications for enhancing and extending in-company training in order to incorporate it into an academic programme.

It is worth noting that the academic literature tends to focus on workplace factors such as organisational culture, commitment from employers and the availability of mentors, rather than more specific aspects such as the range of work covered by the organisation, the quality to which it is carried out, or (where relevant) the physical assets available to learners. This is supported by the guidance provided by professional bodies for employers with professional trainees (e.g. NMC 2008 for nursing and midwifery, ICAEW 2010 for accountancy, and SRA 2013 for law), which emphasise the presence of appropriately qualified staff and the type and amount of support provided to learners.

In practice, there is evidence that a sophisticated, partnership-based approach to quality assurance is able to integrate employer needs and priorities and academic standards successfully, with the institution maintaining control of academic standards and level. Part of this involves the use of a clearly set out partnership agreement that has the commitment of both parties, and includes agile processes, systems and decision making within a robust quality assurance framework designed to maintain academic standards (Bravenboer 2011, McKnight and Birks 2016). The ongoing nature of quality assurance, based on mutual understanding and respect, regular communication and appropriate agreements rather than one-off reviews, is discussed by Minton and Whitemore (2011), Felce *et al* (2011), Arnold *et al* (2011), and Talbot (2014). Arnold *et al* comment that part of proportionality includes recognising and incorporating existing quality assurance processes, such as those of professional or awarding bodies, rather than duplicating them; a current issue in nursing, for instance, is that there is significant overlap between the quality regimes of the regulatory body, the NHS and higher education (Willis Commission 2012). Potential duplication is also commented on by several institutions in a recent Universities UK study (CFE Research 2016) in relation to meeting Ofsted requirements in respect of apprenticeships.

Many of the principles that underpin effective quality assurance within work-integrated programmes have already been discussed in the preceding sections. These include clearly set out academic standards, criteria and level statements, linked to national framework levels and, where relevant, professional criteria (e.g. Minton and Whitemore 2011, Bravenboer and Lester 2016); clear and robust processes for accrediting both existing provision and individual prior learning (Armsby *et al* 2006, Graham *et al* 2008); a curriculum framework that enables programme development and customisation within the institution's existing academic regulations (Willis 2008, Bravenboer and Workman 2016a, b); the use of learning agreements (Doncaster 2000, Costley and Armsby 2007); clear, valid and relevant assessment processes (Yorke 2011); processes and practices that ensure adequate learner support, both in the workplace and from the institution; and appropriate staffing and effective staff development (Haddleton and Minton 2011), with the latter mentioned as including ongoing discussion and updating as well as initial training.

In those institutions that have implemented it, the curriculum framework model and associated 'shell' modules discussed in section 5.3 are reported as a major factor in enabling flexibility and responsiveness within an effective and robust quality-assured framework (e.g.

QAA 2010b, Major *et al* 2011, Kettle 2013). Arnold's discussion of 'wrapper' or concentric modules (Arnold 2011) as a variation within this suggests that it can also be used to clarify respective quality assurance responsibilities where the programme incorporates certification by another body. An issue that is sometimes raised in this kind of model relates to ensuring that the programme is coherent and covers essential content (e.g. QAA 2010b). The use of learning agreements is reported as an effective solution to this, both at the level of the overall programme to agree the combination of modules or components, and to negotiate the focus of 'shell' modules (Nixon *et al* 2006, Lester and Costley 2010, Norman and Jerrard 2012). These can enable three-way (learner, employer and higher education institution) negotiation of the entire programme, or of individual modules or project components with the programme being fully or partly agreed between institution and employer, and can also incorporate approval by a professional body.

6   Key themes emerging from the review

Several key themes emerge from the review that are relevant to the establishment of degree apprenticeships and other work-integrated degrees, collaboration between employers and higher education institutions to develop and run them, and the effectiveness and quality of provision. These are summarised below.

The presence of a **supportive, funding-backed policy environment** has been critical in furthering employer/higher education collaboration and the development of work-integrated degrees. While partially integrated programmes have a long history, and more recently there has been limited emergence of employer-sponsored degrees alongside work, recent policy changes to support the coming together of higher education and apprenticeships have been essential to growing provision in this area. Current policy can be contrasted with earlier regulations such as the ceiling on apprenticeship funding at level 3, different funding regimes for higher VET and higher education qualifications, and unhelpful qualification restrictions in the 2011 SASE.

Openness by professional associations and regulatory bodies to a wider range of entry-routes and programme formats is creating a positive environment for new forms of provision. Not all professional bodies are necessarily proactive in encouraging innovation, but many are receptive to provision that improves entry and opens up access while maintaining quality.

The need for acceptance of **the workplace as a site for learning**, as opposed to being only a site for application and experience. This makes effective collaboration and partnership between the higher education institution and employer more critical, in order to enable integrated learning and support the development of workplaces as 'expansive' rather than 'restrictive' learning environments.

A strong move towards **integrating practical and theoretical learning**, i.e. moving from 'parallel' or 'dual' to 'integrated' models. This is reflected in growing numbers of programmes that draw on work as a primary source of learning and build further study and theorisation around workplace learning, as well as theoretically in discussions about transdisciplinary structures and work-based learning as a field in its own right. However, there are barriers to doing this successfully, including achieving buy-in from discipline-based faculties and departments; integrating an adequate level of theory, particularly in strongly scientific professions; and practicalities about ensuring engagement between practical and theoretical learning.

Variable patterns of, and motivations for, **employers engaging and collaborating** with higher education providers. Across sectors and individual professions, motivations include following normal policy or practice in the industry or profession; workforce planning, including creating additional or alternative entry-routes; and more specific or immediate business needs, particularly in relation to management development. Policy initiatives from the introduction of foundation degrees onwards are increasing engagement with higher education among employers that may previously have worked only with the VET sector or professional bodies.

The presence of substantial and significant **barriers to employer engagement**. From the employer's perspective these include perception of higher education as not relevant, bureaucratic and inflexible, and academic staff as not understanding business; these are most pronounced among smaller firms. From institutional perspectives they include perceptions that collaborative provision is not a mainstream function of the institution,

represents an uncertain investment, undermines academic quality, and challenges the disciplinary structure of the institution.

The use of effective strategies for overcoming these barriers and **creating successful partnerships**. These include senior 'champions' in both work organisations and institutions; easily identified, knowledgeable points of contact; academic staff who understand and engage with business; responsive systems and procedures; careful management to integrate programmes with business cycles and practices, including facilities to incorporate and enhance in-house provision; and the use of umbrella organisations, supply chains and other intermediaries to engage with smaller firms. There is increasing use by institutions of business-facing units, some of which have become substantial platforms for collaborative programmes.

The expanding **role of employers** in programme design and delivery, particularly in higher and degree apprenticeships. The need for effective workplace mentors is widely accepted, while employers' staff are also contributing to programme delivery and, increasingly, assessment. While the latter is not yet the norm in most fields, institutions are developing successful strategies to support workplace-based staff as assessors and ensure that academic quality is maintained.

In **recruitment and admissions**, evidence of a trend away from the institution acting as a gatekeeper and towards the intake being agreed through the partnership agreement, among other things avoiding dual selection procedures. On the other hand, there is some evidence that where there is a high level of competition for places on work-integrated degrees, employers are applying traditional selection criteria that disadvantage applicants who chose vocational pathways at age 16.

The emergence of a distinct **work-integrated learning 'signature' pedagogy**. This reflects the idea of the learner as an active agent and creator of meaning; the workplace as a legitimate site of learning and knowledge generation; and that learning objectives, processes and products are to a greater or lesser degree the subject of negotiation between learner, employer and institution. This transdisciplinary approach can need to co-exist with discipline or profession-specific pedagogies, and it will also be expressed differently depending on whether the programme is concerned with early-stage initial development or with more transformative learning. **Learning and teaching methods** need to ensure productive learning from practice rather than simply the application of theory, and may include the development of learning communities as well as individually based methods. A recurrent theme is the change in the academic staff role from lecturer and arbiter of knowledge to facilitator and resource.

A **curricular structure** geared to integrating theory and practice, as opposed to simply having academic and practical components running in parallel. Curriculum models need to recognise that content arises in part from the workplace, and that it needs to be negotiated and contextualised at both an individual and at an employer or workplace level. The use of curriculum frameworks, with among other things negotiated or shell modules, recognition of prior learning, and both programme-level and individual learning agreements, provide a means of meeting these needs and incorporating a robust quality assurance framework.

Valid and appropriate **methods of assessment**. In most instances this includes moving away from tightly defined criteria to being able to assess broader capability, the ability to cope with complexity and the ability to act effectively in context.

Appropriate quality assurance principles, standards and processes. Principles and standards for work-integrated programmes are not substantially different from those for other forms of higher education, but require differences in process and need to respond to additional concerns. Challenges include maintaining coherence and academic quality in

negotiated and employer-driven programmes; maintaining institutional responsibility for assessment oversight and final decisions; and handling academic appeals that have their origins in the workplace, such as insufficient support, lack of time for learning, or lack of access to relevant information or to suitably stretching tasks. Current evidence indicates that work-integrated programmes are able to meet exacting quality standards, particularly where careful attention is given to developing the partnership agreement with the employer.

7   Concluding comments

The literature examined in the review points to a number of principles that have broad agreement for developing and delivering degrees that include integration with workplace activity, with particular relevance for degree apprenticeships. These include the need for effective collaboration between the higher education institution and the employer, including on the one part understanding of how the workplace 'works' and the flexibility to tailor programme design and delivery to it, and on the other commitment to supporting learning that goes beyond the minimum needed to do the job. Following on from this, they include effective partnership agreements that among other things will normally clarify roles and responsibilities for recruitment, workplace support, teaching and assessment. The value of integrating workplace learning as part of the programme is widely supported, and pedagogies, curricular structures and assessment strategies need to be able to integrate theory and practice in a way that is relevant and effective for the field concerned. Where relevant, they also need to enable learners to meet professional or industry recognition requirements seamlessly.

The review indicates that while work-integrated provision presents additional challenges for quality assurance, it is possible for these to be met effectively without placing excessive burdens on learners, employers or institutions. In particular, provision that sits outside of disciplinary structures and lacks predetermined content can attract a high level of scrutiny on grounds of academic quality, and this has tended to result in quality processes that are more explicit and arguably more robust than those found in conventional programmes.

Work-integrated degrees comprise a continuum that spans programmes geared to initial professional development and fitness to practise, through to those where development is more open-ended and oriented to the needs of individual employers and learners. The first end of this continuum might be typified by medical degrees, where there is a high level of factual and theoretical content and the programme structure is sequential with work attachments in the later stages, while the second can be illustrated by negotiated management programmes where there is little predetermined content and the programme coheres around real-world problems and challenges. While there is evidence that earlier and fuller immersion in the workplace can support more rapid learning and aid the development of professional maturity, the optimum balance between learning the science or theory of the field and learning from action and reflection in the workplace will differ by field and application, suggesting the need for different models and approaches within the work-integrated spectrum.

8   Areas for further research

In several areas of the study it was apparent that the literature was relatively sparse, or otherwise provided limited evidence from which to draw conclusions, for instance because of difficulties in comparing case studies that emphasise different points. The following five areas where further research is recommended relate to parts of the report where a lack of reliable evidence was apparent.

Quantitative levels of engagement and differences between sectors

It is very difficult to judge from the literature the level of engagement by different sectors. An impression can be gained from known patterns of training, the frequency with which different sectors appear in the literature, and sectoral uptake of, for instance, foundation degrees and higher apprenticeships. The statistics for these could be usefully investigated, with the proviso that degree apprenticeships are currently too new to provide a balanced picture. There also appear to be no authoritative quantitative sources on engagement or on the use of work-integrated degrees. This suggests that it may be useful to conduct an investigation into different types of engagement by sector, by profession or occupation, and by type of organisation or firm.

Small and medium-sized enterprises

More research could usefully be done on SMEs (and comparable-sized public and voluntary sector organisations) engaging with 'long' programmes of work-integrated higher education, in order to inform both strategies for promoting engagement and collaboration and any specific pedagogical, operational and quality factors that need to be considered. Differences between sectors need to be highlighted, and there may also be specific issues relating to rural firms as well as to small industries and professions that are dispersed geographically.

Comparable qualitative information on programmes

While there is a substantial body of case-study literature for some types of programme and for employer-institution collaboration, authors tend to describe features that they perceive as successful or innovative, or representing good practice. As programmes become established, articles tend to focus on more specific issues. It is therefore difficult to compare practices directly by referring to the published literature, both for collaboration and for work-integrated degrees. It may be useful to commission a series of case studies specifically of work-integrated bachelor's and master's degree provision that allows programmes and partnerships to be compared from different sectors and professions, as well as between different models of provision. As more degree apprenticeships and similar routes become established, this would provide a useful comparison of different models leading to the same nominal outcome, such as conventional nursing degrees and those provided through an apprenticeship structure.

Testing work-integrated learning pedagogies and curriculum models

The academic literature indicates continuing debate between 'intellectualist' and 'pragmatist' positions, and discipline-based and transdisciplinary orientations. There are, however, few practically oriented accounts of how 'basic science' or discipline-based knowledge can be integrated with transdisciplinary workplace learning, particularly at the level of initial development. As an extension of the previous point, more in-depth qualitative research

based on real programmes could be used to test the extent to which different pedagogies and curricular structures both support effective learning and develop capability and professionalism in different fields and contexts. This area of research would need to have a longitudinal element to look beyond end-of-programme outcomes to the effect on careers and on preparedness for increased responsibility and, where relevant, further study.

Assessment and appeals

Although aspects of assessment are widely mentioned in the literature on work-based and work-integrated learning, practical aspects such as the application of generic criteria and how 'academic' assessment also assesses professional capability are less apparent. There is more information on these areas in institutional documents, and it would be a relatively simple exercise to distil and summarise some of it for publication.

The review also identified a gap in the literature relating to appeals. The potential for appeals to be affected by the fact that learners are employed or in a workplace context is recognised, but there appears to be limited evidence of how this might affect institutional processes. A simple investigation could be carried out to identify any issues arising and how they are being managed.

Initials and acronyms

ACCA   Association of Chartered Certified Accountants

BA   Bachelor of Arts

BEd   Bachelor of Education

BIS   Department for Business, Innovation and Skills

BSc   Bachelor of Science

CMI   Chartered Management Institute

FHEQ   *The Framework for Higher Education Qualifications in England, Wales and Northern Ireland*

HA   Higher Apprenticeship

HE   Higher education

HEFCE   Higher Education Funding Council for England

HNC   Higher National Certificate

HND   Higher National Diploma

NHS   National Health Service

NVQ   National Vocational Qualification

Ofqual   Office of Qualifications and Examinations Regulation

Ofsted   Office for Standards in Education, Children's Services and Skills

PGCE   Postgraduate Certificate in Education *or* Professional Graduate Certificate in Education

SASE   *Specification of Apprenticeship Standards for England*

SME   Small or medium enterprise (up to 250 employees)

Ufi   Ufi Charitable Trust (formerly Ufi Ltd), the 'University for Industry'/Learndirect

VET   Vocational education and training

Initials and acronyms included in citations are explained in the first instance that the organisation's name appears in the reference list.

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