Degree apprenticeships: higher technical or technical higher (education)?

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1. Introduction

In March 2015 the Conservative-Liberal Democrat coalition government announced the rollout of '9 new industry designed Degree Apprenticeships' intended to be 'an innovative new model bringing together the best of higher and vocational education' (DBIS/PMO, 2015). Partnerships of employers, universities and colleges are to be encouraged to 'develop practical, vocational degree courses which will allow people to combine both the academic study from a traditional university degree and the practical experience and wider employment skills vital for career success' (ibid.). Degree apprentices are to 'split their time between university study and the workplace and will be employed throughout' (ibid.) in apprenticeship programmes that are to last around four years (SFA 2015a), with costs shared approximately two-thirds/one-third between government and employer, up to a cap of £18,000 maximum government contribution per course (SFA 2015a). Degree apprenticeships are being developed simultaneously to the introduction of apprenticeship standards, which set out the knowledge, skills and behaviours expected of an apprentice in a particular occupation (DBIS/PMO 2015; HMG 2015).

If the objective of degree apprenticeships is the enhancement of vocational formation at higher levels, then there may be some similarities with previous initiatives, including the Higher Apprenticeship Fund (2011-15), and the HEFCE-funded Workforce Development Programme (2007-10). These initiatives sought to bring together employers and higher education (HE) providers with the objective of developing new forms of higher-level, occupationally relevant education, either for the existing workforce or for new starters. Research has shown that the influence of professional bodies and employer representative bodies (i.e. Sector Skills Councils in England) over these and similar initiatives varies substantially across sectors and occupations (Williams and Hanson 2012; Keep 2015a; Hordern 2013, 2015).

Significant difficulties have been identified by various researchers, evaluators and policymakers interested in the relationships between employers and educational institutions in the development of new forms of higher-level provision. These include costs of setting up the provision, sustainability, employer voice and representativeness, governance, currency of provision, culture clash, progression routes, and academic drift, amongst others (see Brennan and Little 2006; Fuller and Unwin 2012; Keep 2014; Hordern 2014a, 2015). This is compounded by the incentives which exist within the HE sector that encourage a focus on traditional forms of academic provision and research, where the risks are lower and the strategic and status gains more evident (Keep 2014; Hordern 2012; van Vught 2008), and by continual upheaval within the institutional infrastructure of technical and vocational education in England (Keep 2006, 2015a).

The situation in England can be contrasted with those Technical and Vocational Education and Training (TVET) and HE systems in other countries which are often said to offer greater potential for (i) the development of higher-level forms of technical expertise, (ii) a stronger concept of occupation, and (iii) greater potential for multiple progression and formation pathways (Brockmann, Clark and Winch 2011; Fuller and Unwin 2013). However, recent developments in Germany, Austria and

Switzerland demonstrate that even in TVET systems that are underpinned by a social partnership model and legislative frameworks that define the requirements for entry to an occupation, there are pressures towards greater integration with other forms of higher-level education in order to meet perceived skill demands and labour market needs (Graf 2016).

The problematic facing policymakers can be illuminated by asking whether technical forms of higher-level provision in England should be 'higher technical' or 'technical higher' (education)[1]. If such provision is considered 'higher technical', then it could be seen as a higher tier within an extended TVET system, and the governance, partnership working and programme objectives would therefore be seen as best aligned with the wider objectives of VET/Technical Education (TE) policy. On the other hand, if such provision is best seen as 'technical higher', then it could be seen as aligned with the wider objectives of HE and the relevant systemic factors that such provision is subject to (i.e. in terms of quality assurance, entry and progression). There are social, cultural, political and systemic pressures for provision to be seen in one 'box' rather than the other. Equally, the lack of 'horizontal differentiation' (van Vught 2008) in the HE system in England enables institutional positioning that can restrict the capacity for higher vocational policies to make substantive changes to higher-level education, without the development or reintroduction of distinctive institutional forms (i.e. polytechnics or higher vocational schools).

These questions are important for the future of technical education in England. There are choices to be made as a system of higher-level TVET/TE evolves, and different pathways have been and are being taken by different advanced industrialised societies. Indeed the necessity of a 'system' as such can itself be questioned, and a patchwork of higher-level technical education may be the consequence of current policy, dependent primarily on the contingencies of employer demand and institutional interest. If such a scenario eventuates, then there may be question marks about whether degree apprenticeships can effectively support technical skill formation in key sectors and provide a viable alternative to more traditional HE routes.

1.1 Research questions and activity

In order to commence an investigation in this area, a small-scale research project was proposed focusing on the following research questions:

1. What is the rationale for degree apprenticeships? Why are certain organisations and institutions involved in developing this form of (higher) technical education?

2. How are organisations and institutions involved in degree apprenticeships? What are they contributing and adding to the partnerships?

[1] This is an adaptation of Keep's (2015b) discussion of the differences between 'higher vocational' and 'vocational higher'.

3. How are degree apprenticeship programmes structured? How are degree apprenticeships different from each other and from other higher-level forms of technical education?

Via these research questions it will also be possible to shed light on the question of whether degree apprenticeships are forms of 'higher technical' or 'technical higher' education, and whether this varies by sector.

Following discussions with the Gatsby Charitable Foundation, it was decided to focus research activity on two sectors – Aerospace and Construction. The objective was to provide some insight into the development of the degree apprenticeships in the chosen sectors (i.e. how employers, institutions, sectoral and occupational bodies are involved) through a small sample of interviews with employers, HE providers, and where possible relevant sectoral and professional bodies. Twelve interviews were carried out in total, with six in each of the sectors chosen. These interviews focused on:

(i) the reasons for involvement in degree apprenticeships (RQ1);

(ii) how each partner (employer, Higher Education Institution (HEI), Further Education College, other body) was involved (RQ2);

(iii) the variable ways in which employers are involved and are contributing, including why certain employers may have minimal involvement - how representative are the employers of the sector? (RQ2);

(iv) what forms of provision are emerging, including what is being offered in workplaces and what in classroom environments, and how this affects learning (Bishop 2017);

(v) the use of the degree apprenticeship standards, QAA benchmarks statements and standards developed by professional bodies in the development of the degree apprenticeship (RQ2 / RQ3);

(vi) how degree apprenticeships relate to any other provision at the institution in the same field (RQ3);

(vii) what the requirements are for entry into the degree apprenticeship – what are the routes in and progression routes out? Are these apprenticeships genuinely open to 'existing apprentices looking to progress' as much as 'school leavers' looking for an 'alternative route to gaining a degree' (DBIS/PMO 2015)? (RQ3); and

(viii) how the degree apprenticeship will articulate with professional accreditation and registration requirements (RQ3).

Sections 2 and 3 below outline the principal findings of the interviews for the Aerospace and Construction sectors respectively. Within these sections we reflect on the data collected and note key themes that stand out in relation to the research questions. Due to the different characteristics of these sectors, and the partnerships involved, interviewees raised slightly different issues, although there was also considerable common ground. Finally, in section 4 we summarise the findings,

returning to the three headline research questions and the 'higher technical' vs 'technical higher' problematic. It is worth noting that the research was carried out in the context of the upcoming rollout of the levy (and indeed around the time of the Brexit referendum). Although this report does not discuss the levy arrangements in depth, there is no doubt that these significant influenced the position taken by employers towards degree apprenticeships, and this is reflected in some of the findings and discussion below.

2. Aerospace degree apprenticeships

There are two degree apprenticeship standards that specifically relate to the aerospace industry. The first is Aerospace Engineer and the second is Aerospace Software Engineer. Of the eight major aerospace employers involved in constructing the standards, a minority have so far implemented one or both of these standards in their own organisations. In most cases these employers typically partner with both an HEI and an FE college to provide the degree component of the programme.

While at the present time the programmes have only been operational for one academic year, the planned length of the degree apprenticeship currently varies from three to five years depending on the employer. The emerging pattern suggests that most degree apprentices will spend a considerable proportion of their first year at college or university undertaking the first part of the academic component: the Foundation Degree. From year two onwards, their time is generally rebalanced towards workplace activities. In some instances, FE providers extend their involvement to the delivery and assessment of workplace-based competency programmes within the degree apprenticeship.

Against this background, the following sub-sections explore the analytical themes emerging from the data.

2.1. Rationale for degree apprenticeships and employer involvement

All respondents expressed the view that degree apprenticeships had an important role to play in developing and extending the skills and knowledge base of the aerospace industry as a whole. However, some also felt that the standards reflected the interests and circumstances of the largest employers more so than those of most other firms in the sector. As a consequence, the relevance and appeal of degree apprenticeships to small and medium-sized enterprises (SMEs) – even those at the larger end of that category – came into question. A respondent from the FE sector, for example, perceived that the construction and design of the standards

> "was very much led by [two of the largest firms in the sector]… and they very strongly influenced what went in to the overall qualifications and the standards, and it's probably fair to say it doesn't fit [some other firms] very well." (FE provider)

In expanding on this point, another respondent (an employer representative) observed that the largest and most well-known aerospace firms have sufficient

‘profile’ to be able to attract the high calibre of candidate required to see through a challenging academic degree programme, whereas the majority of firms in the sector, being less well-known, might struggle to appeal to such applicants. He also felt that comparatively smaller employers, for example those in the supply chain, would be reluctant to invest in apprentices who spend what might be considered an excessive amount of time on their academic studies and not enough on contributing directly to the activities of the company.

However, another employer representative, in cognisance of the potential problems relating to the engagement of smaller firms in degree apprenticeships, expressed a positive attitude towards the possibility of using the proposed levy to help suppliers access degree apprenticeships:

> “We'd be very interested in, if we can't spend that money ourselves, we're putting £2.5M into that [levy] pot, if we can't spend the money ourselves, then we'd like it to go to our suppliers to help them [access degree apprenticeships] perhaps, we don't want it to just be gone back in to pay for mending the roads and stuff.” (Employer)

Such an initiative would certainly assist in alleviating some of the resource constraints that many SMEs find themselves under when seeking to offer apprenticeships, but additional efforts might be required in order to overcome the other problems identified, for example in attracting the right level of candidate, and in losing apprentices from directly productive activity while they are engaged in study.

2.2. Apprenticeship standards

Another concern voiced by two of the respondents related to the occupation-specific as opposed to task-based nature of the degree apprenticeship standards. One of the employer representatives, for example, felt strongly the standards should not be specific to a particular sector or occupation, and that they should be generic and more transferable across engineering sectors and roles (e.g. between aerospace and automotive engineering). His perception was that:

> “We were… pushed down to begin with the route of occupational standards, so the first one we did was the aircraft fitters, that is a very… siloed, tunnelled standard, you can't really go anywhere with it… [as opposed to a set of standards] where you actually haven’t got a very specific occupation, so you're not a machinist… you could be a Planning Technician, you could be an ME (Mechanical and Electrical) Technician, you could be a Field Support Technician… you can't be specific, it's meant to be generic.” (Employer)

This view was echoed by one of the HE respondents, who also believed that the standards as currently specified may be rather too sector-specific; apprentices themselves, he felt, want greater potential for transferability between sectors. He expressed the hope and belief that the standards would evolve over time in order to reflect this.

2.3. Apprentice identity

A recurring theme in the interviews related to the way in which the degree apprentices are perceived by the education providers, the employers and themselves, and how they are treated. In essence, are they viewed as students or as employees, and what implications does this have for their learning and experience of HE? For example, while the academic curriculum that degree apprentices follow is generally very similar to that followed by their more 'conventional' full-time degree counterparts, the mode, timing and (sometimes) the location of the delivery is different. For some degree apprentices, much of their academic learning takes place via online learning platforms accessed while on the employers' premises. This comparatively 'arms-length' relationship to the university environment can have implications for the students' learning experience. As one employer representative pointed out:

> "Getting access to labs [at university] and getting access to tutors can be a bit more difficult for our guys because obviously they can't just nip out of their student accommodation or whatever they are doing and nip down to see the tutor; they have to get permission from work." (Employer)

It was clear that for the apprentice work would take precedence in this relationship, with the university component playing a more subordinate, 'background' role. Another employer representative observed that that the degree apprentices mixed much more with other early career employees at the same firm (e.g. graduate trainees) than they did with full-time students following the same degree programme. Thus, their identity and overall apprenticeship experience cohered much more around the employer than around the university. Recognising this, one employer felt that a more prolonged exposure to the university environment and full-time students was desirable in terms of bringing "new ideas" back into the firm.

2.4. Roles of partners

While in some respects degree apprenticeships represent a new model of integration between academic and work-related learning, respondents from both HE and FE providers were clearly of the view that, from their perspective, degree apprenticeships very much represent an evolution of their existing activities and programmes rather than a radical break from them. One HE respondent pointed out that most universities have established programmes (for example in medicine or teacher training) that involve elements of work-based and work-related learning, and that degree apprenticeships represent a relatively straightforward extension of such provision. Another observed that the engineering degree they provided for one employer's degree apprenticeship is

> "very, very close to our current engineering course which is very highly regarded, been running for over 35 years probably now… we took the framework of that course and added the extra bits that he felt that his apprentices needed, so it's probably about three quarters the original engineering course." (HE provider)

Cannibalising and tailoring existing degree programmes to employer requirements rather than constructing brand new programmes was recognised as a valid and cost-effective approach by all respondents. As an FE respondent explained, where long-established and successful employer/provider relationships already exist, employers are generally keen to maintain that continuity and predictability rather than construct new programmes from scratch:

> "We are working closely with one major [employer] so to meet their business needs. We have always gone up to Foundation Degree level [in engineering] and then, at their request, we have just extended that to full degree level, so effectively the qualification hasn't really changed for the employer." (FE provider)

Thus, while employers are understandably keen to have a role in shaping and including or excluding particular aspects of the curriculum, this does not appear to extend to demanding that providers create entirely new, bespoke degree programmes for them. Academic breadth, autonomy and integrity is respected. As one HE respondent pointed out, academic programmes are already sufficiently flexible and broad to meet employer needs with minimal adjustment:

> "[with] most engineering degrees… you are developing quite a generic set of skills within the students, so when it comes to a particular issue that [an employer] wants to look at, there's invariably enough flexibility within the programme to say, okay, well we can do that activity in that module, so we've got a materials and manufacturing model. You particularly want them to look at composites, machining or something, fine, so we can tailor the activity that the students do for that to meet your specific needs." (HE provider)

2.5. Recruitment to the degree apprenticeships

Entrants onto degree apprenticeships in aerospace are normally recent school-leavers (18 or 19 years old) with good A level or BTEC qualifications. As two employers explained, the challenging content of engineering degrees demands candidates of a high academic calibre:

> "For what we're expecting them to do, it does need to be really good students… those with a talent for Maths and Physics especially" (Employer)

> "We're putting them through a degree programme, [so] they need to be of a standard where they can cope with the degree programme. It's not fair on the individual in the business if you don't have that, specify that sort of minimum entry level." (Employer)

All respondents presented a similar account. Rather than recruiting existing employees as more mature learners onto their degree apprenticeship programmes, thus upskilling their current workforce, the aerospace employers saw these programmes as a means of attracting and developing new, young, academically able employees.

On a connected point, most of the respondents observed that even the larger employers were experiencing disappointing levels of interest from school-leaver applicants. This was typically attributed to poor awareness about degree apprenticeships on the part of teachers, parents and careers advisors, or to applicants being deterred by media coverage of poor quality apprenticeships. As an FE respondent observed:

> "I think the problem that you have is that there are too many stories of private training providers where people do an apprenticeship and then don't have a job at the end of it, or there is no progression route for them and it is perceived to be cheap labour… Personally I think there's still an issue where you have careers advisors in schools who are often teachers, so they have gone from school to A levels to university back into school and have never really experienced the business world… you always hear the negatives about apprenticeships but never the positives." (FE provider)

2.6. Role of government

As evidenced by the above discussion, relationships between employers and providers were generally seen by both parties as being cordial and productive. However, perceptions of government were noticeably less positive. In the aerospace sector, the problem – as perceived by both employers and providers – lay in the government's seemingly politically motivated inflexibility over the rigidity of the apprenticeship standards, and their apparent neglect of the SME perspective. For example, one respondent described how his firm, which saw more value in Level 4 and 5 HE provision than in full degree programmes, wished for a more flexible set of standards that allowed optional "step-off points" after Foundation Degree level:

> "Now that would have worked really really well because a lot of small organisations would see that as a good thing. They haven't got the sheer investment. A degree is nearly £10,000 more, plus the time commitment… the Government didn't like that proposal. They basically said… it didn't fit for them; that it had to have a set endpoint, not flexibility to step off… So basically the degree apprenticeship really is a title that is being pushed." (Employer)

3. Construction degree apprenticeships

The construction sector has developed five related degree apprenticeship standards (in construction site management, civil engineering site management, building services engineering, design management, and quantity surveying (SFA 2014a-e)) through a consortium that includes over 50 partners, including a range of major construction employers, higher and further education institutions, and professional bodies such as the Chartered Institute of Building (CIOB), the Royal Institute of Chartered Surveyors (RICS) and the Chartered Institution of Building Services Engineers (CIBSE) (DBIS/PMO 2015). Similarly to degree apprenticeships in other related sectors (i.e. engineering and surveying), the completion of a degree apprenticeship has been closely linked with the achievement of professional body

membership (SFA 2015b; SFA 2016). The consortium tends to reflect the nature of the construction industry in the UK (DBIS 2013), with larger and medium-sized national employers comprising the bulk of consortium members (due to their involvement in contracting and project management), and more limited direct involvement from smaller local employers (DBIS/PMO 2015). Following the development of these standards, construction partners have been developing assessment plans for these apprenticeships, seeking agreement from the relevant government department (as of summer 2016 the Department of Business, Energy & Industrial Strategy), with employers hoping to start recruiting to degree apprenticeships from autumn 2016 onwards.

Due to time and resource constraints, the research carried out into construction sector degree apprenticeships as part of this research project focused predominantly on apprenticeships in the construction management and quantity surveying fields (two of the five standards). However, data that relates to the broader development of degree apprenticeships in construction, and indeed across all sectors were also collected. Six interviews were conducted (two with employers, two with professional bodies and two with HEIs involved in degree apprenticeships). The summary below outlines some of the key findings from this research, and articulates these findings with overall themes that stood out across both sectors covered in this project.

3.1. Rationale for degree apprenticeships

Construction employers, HEIs and professional bodies were largely in agreement regarding the rationale for degree apprenticeships. They saw these apprenticeships as an opportunity to address skills shortages and skills gaps in the construction sector in the UK. The foregrounding of degree apprenticeships as an alternative form of HE, and the development of underpinning standards which guide curriculum and workplace experience, are generally seen as a welcome opportunity to increase responsiveness to sectoral requirements and to develop curricula that better serve the needs of the industry.

Some interviewees saw a ‘huge amount more students coming from degree apprenticeships rather than direct from university’ (Employer 1) in the future as part of a ‘paradigm change’ (Employer 2) that will be ‘driven by the industry’ (Professional body 1). However, there were also suggestions that this will be a gradual process and will not result in the elimination of more ‘traditional’ full-time degrees with placements (Employer 1), which will still have a role and attract certain types of students (HE provider 2). ‘Professional body involvement’ was seen as ‘incredibly important’ (HE provider 1) for degree apprenticeships, but employers also considered the role of HE as vital, providing ‘consistency’ and ‘maintaining a certain standard’ (Employer 2) of provision.

3.2. Apprenticeship standards

Interviewees reported that government had refused requests to develop apprenticeship standards that had a degree of shared core content before leading to specialist pathways. An employer reported that what partners ‘wanted to do is kind of have a core programme’ before students would start to ‘specialise later down the

line', but government had required 'separate pathways' as 'one programme for different outcomes' (Employer 1) would be unacceptable. This may relate to the determination of government to explicitly and identifiably link degree apprenticeships with 'mastery of a specific occupation' (HMG 2013, 4; HMG 2015), which would negate any moves towards developing more general qualifications or pathways. However, the consequence of this may be some inefficiencies in terms of design and delivery, and preparation for high-level job roles that may be too narrow, with more general foundational core content marginalised within the degree apprenticeship programmes.

The knowledge, skills and behaviours required of skilled construction workforce change gradually. It was therefore suggested that the standards would need some updating over time, but this would be limited in comparison with faster moving fields (advertising and digital fields were mentioned) (HE provider 2). There are some differences between highly dynamic sectors and relatively stable, gradually developing sectors such as construction and engineering, where there is a clear role for HEIs and professional bodies in iterating the curriculum and professional requirements. One interviewee stated that 'essentially we're building the same now as we were 15/20 years ago, and a lot of the…course content is being tweaked rather than radically altered' (HE provider 2), while a professional body remarked on the stability of the curriculum over time (Professional body 1), notwithstanding technological change.

3.3. Apprentice identity

Degree apprentices are clearly employees who are studying rather than sponsored students who may or may not be on a structured programme of employment that relates concurrently to their studies. Degree apprenticeships may therefore appear to further tip the balance of relations between employers and institutions, with employers gaining greater control over the curriculum while increasingly being placed under greater responsibility to ensure that workplace experiences relate to classroom study. Nevertheless, for HEIs those on degree apprenticeships will be a distinct group, similarly to part-time, employer-sponsored students in the past. Part-time students 'don't spend loads of time in the student union' and 'don't integrate much with the full-time students' (HE provider 2), as they are 'not bothered about…the student experience' (Professional body 2). One interviewee raised issues with this, suggesting that these students are missing out on some of the wider benefits of HE (HE provider 2), including 'diversity' and 'intercultural' experiences and the 'half of university life that's outside the classroom' (HE provider 2).

3.4. Roles of partners

There are different perspectives on the role of employers and HEIs in apprenticeship design and delivery. Overall, however, interviewees recognised these as points of tensions that could be reconciled, rather than substantive obstacles. In terms of academic content there were some voices suggesting that there was to be little change from previous programmes (Professional body 1), with some 'amendments to fit in to the apprenticeship standard' (HE provider 1). The course content 'matches

the educational framework' (HE provider 2) developed across the construction sector and therefore employers and HEIs are working within the same parameters to design the programmes.

Employers stated that in general they rely 'quite heavily on educational institutions…to look at how we structure it' as they (the employers) are not 'programme writers' (Employer 1), and (the educational institutions) are needed to ensure 'consistency' (Employer 2). However, employers also thought it was important that they asserted more 'control', emphasising that the 'academic part...it's probably only about 20% of what they learn throughout their programme, about 80% is actually on-the-job learning' (Employer 1). The benefit of the degree apprenticeship is the concurrence – learning 'practical skills and the theory skills together' (Employer 1).

The degree apprenticeship development process has succeeded in ensuring employers take a more central role in curriculum design – 'right from the beginning we helped build the curricula…being the pivot point in terms of making sure whatever academics are doing aligns with what actually happens on the ground' (Employer 2). An employer stated that 'there's a place for academia' (Employer 2), but this must sit within an overall framework driven by employer demand.

From the perspective of some in HE there is some scepticism as to whether all employers are 'geared up' to conduct 'evaluation of skills and behaviours in the workplace' (HE provider 2). While 'big employers with established training schemes' may not find this problematic, some others looking to take on apprentices may be 'surprised with the expectation' as they need to provide an 'involved mentoring support role' (HE provider 2).

3.5. Apprenticeship design and delivery

There was some discussion of moving towards complete employer control of apprenticeship programmes, and of 'closed cohorts' with individual employers designing and delivering programmes just for their employees, or developing 'bespoke apprenticeships' (HE provider 2) with HEIs. However, professional bodies suggested that this was unlikely to be extensive in construction (Professional bodies 1, 2), although if there was employer demand it would remain possible (Professional body 1).

Employers reflected these reservations, stating that 'bringing it in-house…would require a huge amount of resource…in an absolute ideal world you would have all of that, but you have to look at what's realistic, what's cost-effective' (Employer 1). There was recognition of the benefits of 'mixed groups', with employees from different companies coming together for academic learning and some project work, as this offered 'cross-pollination of ideas' (Employer 2), where 'they learn from each other…listen to how other companies are doing things…[see] different project examples' (Employer 1). While this 'diversity of perspective' and exposure to different 'cultural norms' (Employer 2) was seen as desirable by the interviewees (who were apprenticeship managers or learning and development specialists), they

recognised pressure from within their organisations to be more 'risk-averse' and 'protective of our intellectual property…and trade secrets' (Employer 2) Thus they experienced an ongoing struggle to convince colleagues of the benefits of mixed groups.

Because many businesses in the construction sector have staff at locations all over the country it is also not viable to run closed cohorts from one employer in one location (Professional body 2, Employer 2). A key factor would be the cost of 'bringing employees all to one central location…and taking them all out of the business for a considerable amount of time, all at once' (Employer 1). Although larger companies 'might be able to actually have their own degree and tailor it' (Employer 2) a more realistic approach might be to say that 'within the construction sector we have to come to terms with the fact that we educate each other's workforces' (Employer 2).

3.6. Replacing part-time programmes

For HEIs, there is a recognition that degree apprenticeships have the potential to replace the part-time, employer-sponsored degree route that has suffered since the raising of the undergraduate fee threshold in 2012, which many employers were reluctant to pay, even at part-time rates (Professional body 2, HE providers 1,2). One professional body estimated that there had been a 40% fall in enrolment in construction degrees over this period, mainly due to the reduction in part-time study (Professional body 2). HEIs have been concerned about the loss of this market, which in some cases comprised a 'third of our whole student body' (HE provider 1), and degree apprenticeships offer an opportunity to 'switch students over' (HE provider 2) onto a comparable pathway which importantly is partially subsidised by the government (HE provider 1).

3.7. Recruitment to the degree apprenticeships

Employers and HEIs see degree apprenticeships as an attractive offer to school leavers with A levels, and as an opportunity to upskill their existing workforces and others currently employed in the construction sector (Employers 1, 2; HE providers 1, 2). For 'the majority of the industry' it is those 'coming out with A levels at 18, or those who have been in the industry a little while, maybe done a Level 3 apprenticeship' (Employer 1) who are likely recruits. For one HEI, however, most of those likely to start the first programme are 'existing employees' (HE provider 1), who have been enrolled on the programme as part of their career development, rather than new recruits. Employers acknowledge the potential for apprenticeships to serve as a vehicle for workforce development for those 'older candidates' who 'have been in the industry a little longer' (Employer 1).

Degree apprenticeships are also seen as a vehicle through which entry to highly skilled construction employment can be diversified – for 'career changers' taking advantage of the 'opening up of avenues for diversity' (Professional body 1). This diversification of the workforce is a specific objective of both professional bodies, partly due to skills shortages and a recognition of the employment profile of the sector (Professional bodies 1,2).

The structure of the degree apprenticeships in construction, which are built around two stages (an HNC, followed by a top-up to a full degree) also offers an opportunity for employees to step off the programme after an initial stage if appropriate for them, before potentially resuming later. An employer noted that the 'criteria for getting on to the HNC part…is actually five GCSEs A-C, so in theory they could come on to the HNC programme, having finished their GCSEs' (Employer 1), although the same employer also accepted that this was unlikely to be a major avenue of recruitment as those with A levels or equivalent qualifications would be preferred.

The process of recruitment to degree apprenticeships is firmly in the hands of employers, as 'this is not going through UCAS' and HEIs will need to 'align admissions processes with companies' applications and offers for apprenticeships' (HE provider 2). The 'payment process, dealing with the Skills Funding Agency, and the whole financing of it' is significantly different from both full-time and part-time 'traditional' HE (HE provider 2). HEIs are seen more as 'contractors' or 'suppliers', in a way that contrasts with standard HE provision.

3.8. Role of government

There were some significant reservations regarding the role of government in the development of degree apprenticeships. In particular, there was concern that government departments did not fully understand the role of professional bodies in the sector and the importance of professional accreditation as part of the achievement of the degree apprenticeship, and indeed as a guarantee of professional competence (Professional body 2, Employers 1,2). The government department (Department for Business, Innovation & Skills and after July 2016 the Department for Business, Energy & Industrial Strategy) has steered consortium partners away from specifying a specific professional qualification or membership in the apprenticeship standard and end-point assessment (Employer 1), leading to a situation in which government has not fully accepted the draft end-point assessments developed by partners and some considerable frustration (Employer 1, HE provider 1, Professional body 2). It was also suggested that the requirement to connect apprenticeship standards to specific occupations as outlined in the Government's implementation plan (HMG 2013) has caused some difficulties, as discussed in 3.2 above.

4. Conclusions

The research conducted for this project has identified a number of common themes across the aerospace and construction sectors that relate to the three initial research questions. Primarily it appears to be **larger employers who are dominant** in the design of the apprenticeship standards and plans for delivery in partnership with HE providers. This may be the most realistic approach to apprenticeship delivery, as these are the employers most likely to have the time and resources to contribute, but it may come at the expense of the requirements of small and medium-sized employers, some of whom may wish to take on degree apprentices. However, it should also be acknowledged here that with the introduction of the employer levy,

many small and medium-sized employers may fall below the payroll threshold for the levy and therefore may benefit disproportionately from the development of degree apprenticeships in the future.

Overall, employers, HE providers and professional bodies appear to be working collaboratively in the development of degree apprenticeships and preparation for delivery. However, there were **reservations regarding the approach taken by government** and the manner in which the process had been managed. There was **concern about the nature of the apprenticeship standards** amongst employers in both sectors. This related to the requirement that standards are linked very specifically to an occupational role, a requirement that emerged from the recommendations of the Richard Review and the government's resultant reforms to the apprenticeship system (HMG 2013). Employers noted that a considerable amount of 'core content' is relevant to similar occupational roles, and therefore apprenticeships could be developed to share a pathway before specialising later on. Furthermore, the skilled activities people are involved in at work are often similar across occupations and sectors. However, a more flexible approach to standard development was not favoured by government.

Employers, HE providers and professional bodies noted also that government did not favour identifying a professional body on the apprenticeship standards, perhaps wary of appearing to support one pathway to occupational competence. However, employers in particular stressed the crucial role of key professional bodies as guarantors of competence. It is important to note here that professional bodies can play different roles in different sectors, and while in construction, surveying and engineering these bodies are well established with sector-wide buy-in to their objectives and ethos, this may not be so evident within emerging or highly dynamic occupational areas (Hordern 2014b).

For HE providers and employers alike degree apprenticeships provide a partial solution to the reduction in part-time, employer-sponsored student numbers, which came about largely as a consequence of the increase in undergraduate tuition fees in 2012. The interviews outlined above demonstrated, perhaps particularly in construction, the commonalities between these two forms of HE. Effectively, **certain parts of the FE and HE sectors are well-equipped to provide curriculum design and delivery expertise for degree apprenticeships**, even though the balance is tipping further towards employer control. However, moves towards closed cohorts and bespoke degree apprenticeships specifically designed for one employer are viewed with some scepticism, although they were clearly considered a possible development.

Apprentices are clearly seen as employees whose **experience of HE is likely to be very different from full-time students**, including those studying 'traditional' programme in construction and engineering. In both the aerospace and construction sectors, we heard suggestions that apprentices could have a rather 'arms-length' relationship with the higher education provider, with very specific time allocated for study. They may view HE primarily as a 'training programme', with limited interest in accessing the broader aspects of the student lifestyle. However, we should

acknowledge here that the rollout of degree apprenticeships is at a very early stage, and therefore discussion was based on small existing cohorts or on previous related programmes (i.e. part-time, employer-sponsored students).

In sectors which require sustained periods of skill formation (i.e. construction and aerospace) **degree apprenticeships are seen to offer both a solution to skills shortages and an opportunity to diversify the intake of apprentices and graduates**. However, it was unclear at the time of the research whether the volume of recruitment to the degree apprenticeships would effectively meet the considerable skill requirements of the sectors. In both aerospace and construction employers stated that **a substantial volume of degree apprentices would come from 18-year-old school leavers** with A levels or BTEC qualifications looking to progress quickly into a skilled professional role. In construction there was also suggestion from employers, HE providers and professional bodies that **degree apprenticeships would offer a vehicle for workforce development**, particularly as many existing employees may be able to take advantage of the two-stage structure of the construction degree apprenticeships. Some also may come through Level 2 and Level 3 trade apprenticeships, although this was not thought to be a major source of recruitment at this time, perhaps because of the entry requirements for the higher level academic qualifications.

Overall, degree apprenticeships appear to be **locating themselves between notions of 'higher technical' and 'technical higher', gradually shifting the boundaries between employers and HE**, and adding a new dimension to the interface between TVET and HE in England. There are some aspects to the development of degree apprenticeships which clearly would seem to move the higher technical education system towards a 'higher technical' approach, in particular through the tight specification of standards and the commitment towards putting employers in control of developing degree apprenticeships. The lack of common experience between apprentices or employer-sponsored students and others enrolled on HE courses could also be seen as evidence of an emerging new system, as new structures are developed to cater for a more work-based route to higher-level education. Moreover, the suggestion that over time degree apprenticeships may become an effective vehicle for workforce development in some sectors, including for those who have completed a Level 2 and Level 3 apprenticeship rather than A levels or BTECs, suggests a 'higher technical' approach.

However, a drift towards 'higher technical' may be hampered by misconceptions around the nature of employer demand, and indeed a slightly overbearing approach towards the specification of standards that is informed by the government apprenticeship reform strategy. Employers seem to question, to some extent, the need to link standards so closely to occupational roles. Those interviewed can see the commonalities across occupations (and sectors) in terms of work activity, and the advantage of having some common pathways that those on degree apprenticeships share at an early stage. This suggests that actually **more core higher level technical knowledge** may actually benefit a wide range of those on degree apprenticeships, allowing specialisation slightly later and possibly facilitating mobility

between roles and sectors, and this may be best provided within a more 'technical higher' structure where more 'front-end' academic classroom time is provided in initial stages of programmes. Indeed such an approach would seem to chime with various recent research into occupational knowledge (Young and Muller 2014; Winch 2010) and comparative research into European systems (Brockmann et al. 2011). The recruitment of school leavers with A levels also suggests that a 'technical higher' definition remains pertinent, as does the connection between the previous part-time, employer-sponsored route and degree apprenticeships, and the acknowledgement amongst some employers of the important role of HE providers in design and quality assurance.

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