

## **Education for Engineering (E4E) submission to the Joint Sub-Committee on Education, Skills and the Economy inquiry into Apprenticeships – 2016**

Education for Engineering (E4E) is the body through which the engineering profession offers coordinated advice on education and skills policy to UK Government and the devolved Assemblies. It deals with all aspects of learning that underpin engineering.

It is hosted by The Royal Academy of Engineering with membership drawn from the professional engineering community including all 35 Professional Engineering Institutions, Engineering Council and EngineeringUK.

- The target of three million apprentices by 2020, how the Government proposes to achieve this and how this may affect the 'skills gap'

In the face of public concern about the type of jobs young people do, a desire to replicate the work-based training routes we used to have, the need to rebalance the economy and unfavourable comparisons with other nations' vocational training, all parties set challenging apprenticeship targets during the election campaign, but did not give due consideration to implementation.

Unfortunately, then, while the target of three million has been set with the best of motives, the evidence on which it is based is not clear, and may be thwarted by insufficient forward planning for new and replacement apprenticeship standards.

In 2014/2015, there were for example 499,900, starts on the old frameworks<sup>1</sup>. While maintaining this number would still leave the government short by 100,000 from its target, this gap might be closed. However we are concerned that reliance on these old frameworks (now that the date for them to be switched off has moved from 2017-2020) may not deliver the skills industry needs. Given that the Department regards the old frameworks as sub-standard, there is also a risk of devaluing the apprentice 'brand'.

Moreover, ascertaining skills shortages to produce a target is not straightforward, and it is essential that the supply of apprenticeships is predicated on real demand for new entrants and new occupations as well as replacement demand. Where training a skilled highways operations apprentice at Level 2 will for example produce, within 2-3 years, a replacement for a retiring worker and is to an extent predictable, training engineers for the nuclear industry whether through degree apprenticeships or a traditional university route will take possibly 12 years from age 16 years, during which time energy policy may have performed several somersaults.

Furthermore, the government's view of apprenticeships seems to conflate two types of programme:

1. those which are real jobs with training and employment protection, and paying good salaries, such as those leading to professional qualification as Engineering Technicians in many of the engineering sectors.
2. time limited programmes, more akin to the old YTS programmes, which have no guarantee of continued employment even if passed, and paying the apprenticeship minimum wage.

Apprenticeships in the first category, because they are real jobs, are based on individual employers' needs, replacement demand and expansion demand. In the engineering

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<sup>1</sup> Parliamentary written answer 22 Feb 2016 <http://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2016-02-09/26595>

sector, the overwhelming majority of apprenticeships are in this category. For example Laing O'Rourke is developing a Level 3 Digital Engineering Technician Trailblazer standard, which reflects the drive to introduce Business Information Modelling in the construction industry. At the same time the Technician Apprenticeship Consortium, in an initiative led by Arup and Atkins, is gathering employers and degree providers to look at a Level 6 degree apprenticeship which will result in highly skilled technician engineers specialising in the design process. This will be a new role for engineering consultancies based on emerging technologies. Recruitment for these posts is therefore based on expansion demand for new skills, but numbers will also depend on contracts awarded, not centrally determined.

The second category of apprentice recruitment can more readily be deployed to move towards the target, but we would question the value of doing this. In particular, we are concerned that the public sector or those bidding for public sector contracts may be forced to take on thousands of apprentices for whom there is no real work.

For example, one infrastructure employer with an excellent reputation for maintaining apprenticeships and training, having set this year's recruitment target as 400, has calculated they will be expected to take 2000. There is no work for this number, and to source work – extra office space, HR resource, payroll resource, administration et cetera – is likely to incur costs beyond what they might expect back from the levy.

Another issue is the apprenticeship minimum wage. One of the largest FE construction providers in England reports that apprentices quickly work out that they can earn more working part time in retail, and either drop out or move to full time FE courses, thus losing the valuable work based training.

- The proposal for an apprenticeship levy and how this may be implemented

There is a growing concern about this. Because of the likely attendant costs in implementing the levy, some employers are actively considering whether it would be more cost effective to treat the levy as a tax, withdraw from official 'apprenticeships' and train their workforce under another name. There is across the engineering and construction sectors no confidence that the implementation and IT systems can be delivered on time. This is not a reflection on the approach taken by the government departments involved, who have been collaborative and keen to listen.

Another concern here is how employers in the devolved regions will receive money back from the levy. The CBI estimate considerable costs for employers in implementing the levy scheme and counting their workforces across the 4 nations. Presumably this might be done by a variety of ways - where the payroll head-count is based, where the employee lives or where the employee has their work-base. None of these would necessarily reflect the reality for highly mobile industries involved in built environment engineering. For example a consultant design engineer might live in Wales, be based in an office in Bristol and be working on a long-term project in Scotland.

As skills policy is devolved and there is uncertainty about funding there are also concerns from the devolved administrations that some employers may game the system to maximise their English workforce numbers. There need to be safeguards built in to address this. There are also issues to do with the abolition of UKCES in terms of assessing labour market information. According to a Parliamentary written answer on the 22 Feb 2016<sup>2</sup> the Institute for Apprenticeships (IfA) will only have a very limited role in

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<sup>2</sup> <http://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2016-02-11/27185>

looking at this. BIS, in consultation with the devolved administrations, has identified the Employer Skills Survey, the Employer Perspectives Survey and the LMI (Labour Market Information) for All Portal, and is 'considering how these can best be delivered in future and will announce future arrangements as soon as final decisions are made.' Translating these sources into a meaningful and useable format is essential, and assuming this happens elsewhere, there remains a question as to whether the limited role of the IfA will be adequate, in terms of the use of LMI, priorities and how this will dovetail with regard to further devolution of SFA funding for vocational provision post 16 that is not apprenticeships across the English regions.

- The institutional architecture of current provision and how this may be affected by the proposed Institute for Apprenticeships

Currently, in our sector, there is oversight via awarding body verification processes, Ofsted, College provider audit, Ofqual and the Engineering Council. The independence of these regulatory bodies ensures that standards are maintained. All this will remain. Professional engineering institutions, licensed by the Engineering Council, have been involved in Trailblazer apprenticeship developments to ensure that they align with the standards of competence and commitment required for professional registration, and set out in the UK Standard for Professional Engineering Competence (UK-SPEC). UK-SPEC is set and maintained by the Engineering Council and applies profession-wide. This provides consistency across engineering Apprenticeships, but also transferability across the sector. As well as the content, the professional engineering institutions are required to adhere to the same process of approval of Apprenticeship programmes, set out by the Engineering Council.

Under the new trailblazer guidance, there will also be synoptic independent end assessment, the rationale and mechanism for which is unclear for many sectors. Where professional engineering institutions are involved, the end-assessment can be used as a means of assessing whether an apprentice is of a standard to apply for professional registration should they wish, but this will not always be how apprenticeship assessments are devised, and there can be no presumption that end assessment will lead to professional registration. Whilst professional registration cannot be guaranteed, it should be an aspiration of all those embarking on an approved apprenticeship.

Upon completion of an approved apprenticeship, individuals should be encouraged to seek professional registration. At this point, the professional engineering institutions undertake independent peer review assessment of individuals against UK-SPEC. This ensures consistency and provides assurance to the public that registered individuals have met the required standard and have committed to maintaining their competence.

The most recent guidance proposed that there should also be external quality assurance of the end assessment. To put in place further arrangements to look at end assessment across England in numerous potential settings would incur considerable costs which could not be absorbed by individual professional bodies. With the discontinuation of old frameworks and their governance, professional bodies and employers are also now working on apprenticeship developments across four different systems in England, Scotland, Northern Ireland and Wales, incurring substantial extra costs in terms of staff resource.

In principle, the profession supports moves to ensure consistency (approach and standards) across the different assessment organisations involved in the end assessment, in order to provide assurance to the individual apprentice that the assessment is fair regardless of assessor organisation, and to ensure that the standard applied/level of difficulty is the same, again regardless of the assessment organisation. Building on its experience of applying rigour to the processes involved in professional

registration, the Engineering Council is considering whether it should take on the role of external QA of end assessment, for the engineering sector. The costs incurred in establishing such arrangements should not be under-estimated.

As regards the proposals for the IfA, these are at present rather vague, and we would encourage BIS to confirm the arrangements. The quality of apprenticeship provision is best assured by the licensed professional engineering institutions providing the technical input to the sectoral/discipline working groups, and providers seeking 'approved Apprenticeship' status from appropriate professional engineering institution(s). The Engineering Council, with its experience of regulation across a major sector, could provide important input at a strategic level.

It had been suggested that the IfA would look at how 'apprenticeship standards' perform in terms of completion and progression to work, but the Enterprise Bill (BIS/16/138) does not specifically list this function. We would support completion and continued employment as a quality measure, but wonder whether the IfA will be sufficiently resourced to make sound judgements. There is, for example, a risk that a particular employer, by going bust or failing to train could derail overall completions for a given standard, especially as once a standard exists, there is no control of who adopts it, nor what qualifications are used to deliver it. At present, Pearson for example can (and do) stop centres delivering qualifications or sanction them, often when professional bodies and employers raise concerns. This has worked very effectively for the current Level 3 Civil Engineering Technician standard, with the Technician Apprenticeship Consortium of employers (TAC), the Institution of Civil Engineers and Pearson liaising to address issues as they arise. If there is to be a multiplicity of qualifications and providers, then the resource required to exercise this level of quality control will increase.

Overall, the engineering sector has been effectively and efficiently regulating itself via the professional bodies and the Engineering Council. It is currently unclear what value the establishment of IfA will add to the engineering sector, and it is important that unnecessarily duplication is avoided. In fact, if, say, a Level 3 apprentice were to complete an Engineering Council approved qualification and the work-based evidence for professional registration within an apprenticeship, they could move straight to professional registration as an Engineering Technician, and continue in employment, without necessarily taking the end-assessment and completing the apprenticeship.

- Take-up of apprenticeships amongst 16–19 year olds and steps that can be taken to make more young people aware of available opportunities

There is a longstanding problem with the adequacy of careers guidance in schools still apparent in the latest Annual Report of Her Majesty's Chief Inspector of Education, Children's Services and Skills<sup>3</sup>. Links with employers remain poor, and schools with sixth forms tend to promote full time HE entry without regard to the opportunities offered by degree level apprenticeships and the salary uplifts that engineering careers can provide.

There are signs that employers are rebalancing their graduate/apprentice recruitment balance to take on more apprentices, and while the levy may facilitate that, it is a very blunt instrument. One effect of the levy will be to shift a large part of the FE budget and therefore college income, to what employers may (or may not) purchase from their share of what will be a hypothecated tax. There is a danger this may prove counter-productive, especially if FE moves from high value Level 3/4/5 full time provision to

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[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/483347/Ofsted\\_annual\\_report\\_education\\_and\\_skills.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/483347/Ofsted_annual_report_education_and_skills.pdf)

chase lower value apprenticeships which are cheaper to deliver. The FE Area Review process must ensure that access to adequate full time provision in more expensive areas such as engineering and construction remains available to all.

Status may well remain as an issue. The Minister of State for the Department for Business, Innovation and Skills and the Department for Education <sup>4</sup> noted that there would still be a role for ATAs to manage apprentices across short term contracts with different employers. This arrangement, while it can work well, especially for sole traders and SMEs, has also been misused in the past, with no guaranteed progression into employment for apprentices.

- The process of applying for apprenticeships

At the moment, apprentices come from various routes – via apprenticeships.gov.uk, from colleges who recommend to employers, and by employers recruiting directly via their own websites and advertising. It may appear superficially attractive to devise a single advertising/application website, like UCAS, into which all employers will put vacancies, and thence enable a seamless transition to confirmation, contract and voucher draw down etc.

However some employers will not wish to list vacancies on a central site as this is likely to generate too many applications from unsuitable candidates, as happens at present. Our experience in engineering is that a substantial number of employers prefer to avoid the existing site and use their own recruitment processes and colleges as intermediaries for a first sift and diagnostic testing. They are, after all, offering real jobs, and responding to real demand, not planning to meet a target that they have not set.

As a side issue, any such platform also needs to be supported by appropriate checks to avoid instances of fake, misleading and non-existent vacancies designed to collect personal details from applicants for fraudulent purposes.

Awareness of approved apprenticeship programmes could also be raised by linking the Engineering Council's Technician Qualification database to the new Digital Apprenticeships Service (DAS). Early contact has been made between the Engineering Council and the DAS to explore possibilities.

- Routes for progression to higher qualifications for current apprentices

The civil engineering area is developing standards towards Level 6. The British Institute of Non-Destructive Testing (BINDT) is similarly committed to developing work-based pathways to levels 6 and 7. There are two major issues that have become apparent: trying to get a 'nationally' available level 6 with a degree award (HE providers tend to want to use existing PT provision and not adapt it), and trying to get a model which delivers across the four home nations. These can be resolved but it is a complex process. In conjunction with this, many employers regard devolved skills policy as unhelpful and as noted above, the extra obstacles involved in negotiating this are resource intensive.

- The quality of, and minimum standards for, apprenticeships, and how standards can be enforced

Ultimately if the government is serious about employers being in control, then retention into continued employment should be the standard. No employers want employees who

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<sup>4</sup> Nick Boles at a ResPublica and Tideway event, Houses of Parliament: 08 March 2016.

are not competent. In the Engineering sector, titles such as EngTech and IEng provide assurance that employees have met the existing independent standard, however, seeking such professional registration by all those on Trailblazer Apprenticeships cannot be mandated.

At present, for Trailblazers, there has to be assessment throughout the standard by both employers, running their professional schemes with professional engineering institution oversight, and training providers, which will in turn be internally and externally verified by an awarding body. Apprenticeships are devised with professional body approval. There is also oversight by Ofqual, with training inspected by Ofsted, and on completion apprentices can come to professional review. There is therefore, in engineering, a range of checks and balances in place. Added to this, there is now independent end-assessment, and this independent end-assessment will have an independent quality assurance process. The IfA might wish to consider whether a one-size-fits-all approach to quality assurance needs to be applied to sectors that are well-regulated.

- Lessons from other countries' approaches to apprenticeships

There appear to be no plans for a thoroughgoing review of our school system (there should be) and there are currently no incentives for schools to advise students to leave before the age of 18. While this is the case, attempts to increase the numbers in high quality professional and technical education will remain inadequate, as has been the case for over 50 years. The German system is much admired but this is rooted in a culture that values technical education, and would imply review that goes beyond apprenticeships, starting earlier in the schools system.

Meanwhile the FE Area Review process is far from transparent and outcomes are uncertain, so the capacity to train is being reorganised and potentially reduced before the new Trailblazer programmes are in place, and UTCs have recruitment problems.<sup>5</sup> The DfE cannot make schools 'fail' because of lack of progression to apprenticeships – that would produce perverse incentives to game the system ie to move the weakest students onto Level 2 apprenticeships while still not making students aware of the L3 opportunities available.

The important thing here is that apprenticeships do not exist in isolation from the rest of the system, and there needs to be a whole system approach to the issue, developing a coherent technical offer. Unfortunately while there is a competitive funding methodology for 16-18 education, there is little value in looking at other countries' systems.

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<sup>5</sup> <http://feweek.co.uk/2016/02/08/numbers-falling-closing-down-university-technology-college-revolution-fails-to-deliver/>