Case study England

The future of vocational education and training in Europe
Volume 2

Delivering IVET: institutional diversification and/or expansion?

By Terence Hogart, Institute for Employment Research, University of Warwick, October 2020

AO/DSI/JB/Future_of_VET/003/19

Disclaimer: this text is presented in its original in its original form. It has neither been revised nor edited by Cedefop.

Please cite this publication as: Hogart, Terence (2022). *Case study England.* The future of vocational education and training in Europe volume 2. Delivering IVET: institutional diversification and/or expansion. Thessaloniki: Cedefop.

Table of Contents

1. Introduction

The 1944 Education Act, a watershed in the development of the education system in England, led to a reorganisation of publicly funded schools into a hierarchy of grammar schools, technical schools, and secondary moderns (REF). Technical schools, which nowadays might be referred to as vocational ones, never really gained traction such that in the decades which followed various attempts were made to develop a mass participation vocational education and training system. If one jumps forward to the 1980s policy makers were seeking in earnest to develop a technical education system in response to rising levels of youth unemployment and continued concerns about the country's competitiveness. A White Paper, New Training Initiative: An Agenda for Action (Cmnd 8455, 1981), set out the government's aims to, amongst other things to develop skills training for young people, including apprenticeships, to provide them with the skills to obtain the jobs available and progress to further learning. Today, the New Training Initiative is chiefly remembered for introducing the somewhat discredited Youth Training Scheme which tended to reinforce the view that vocational training was a remedial action (Payne, 2000). In the New Training Initiative one can identify many of the preoccupations with the structure and governance which continue to perturb policy makers to this day:

- increasing the levels of participation in post-compulsory education (at the time of the White Paper they were far lower than in countries such as Germany and France);
- finding the means to share the costs of training between employers, learners, and the State;
- establishing standards for various skills (limited to craft, technician and professional skills to replace time-served apprenticeships in the White Paper) to guide training provision.

With the introduction of National Vocational Qualifications (NVQs) in 1986 a means was found of providing a framework for establishing standards which would be reached through demonstration of competence. The White Paper Education and Training for the 21st Century (Cmnd 1536, 1991) added to the list of recurring priorities with:

- establishing a framework of vocational qualifications that are widely recognised and used (even though NVQs had already been established);
- promotion of parity of esteem between academic and vocational qualifications;
- amplifying the employer voice in education; and
- providing further education colleges more freedom to respond to local labour market needs.

Thirty years later policy makers are still grappling with largely the same set of issues. Participation in apprenticeships is in the doldrums, employer influence is still being advocated as a means of ensuring that training is appropriate to skill demand via their role in setting apprenticeship standards, funding further education provision is proving to be a somewhat intractable problem, and the qualifications framework has again been reformed with the shift

to the regulated qualification framework (RQF) in 2018. Moreover with the planned introduction of Technical Level qualifications (usually referred to as T-levels) there is once more an attempt to establish a vocational pathway at upper secondary level that has parity of esteem with the general one (or, more to the point, with A-levels). Plus ça change. Even before the onset of Covid-19 and the havoc it has wrought on the economy and labour market, youth unemployment had re-emerged as a problem thought to have been solved in the 1990s, and productivity comparisons with country's main competitors were, once again, somewhat abject. Productivity had improved in the early 2000s but following the 2007/8 the economic crisis it once more fell behind that of competitor countries.

Even if the policy preoccupations remain the same, the period from the 1990s to the current point in time has been one of profound change, and change again, with respect to the structure and content of vocational education and training (VET) in England. The main changes will be summarised in the sections that follow.

2. The relationship between general and vocational education

There has been a long standing policy intention – dating back to the Education Act 1944 if not before – to create a vocational route through secondary education. From a policy perspective, enthusiasm for it has waxed and waned (Ainley, 1988; Evans,1992). The idea of vocational schools never gained much traction and the mix of grammar and secondary modern schools which emerged following the 1944 Act provided little in the way of vocational education even though the latter were meant to prepare people to enter the labour market straight from school. The emphasis placed comprehensive education in the 1960s and 1970s – resulting from the merging of grammar schools and secondary moderns - militated further against the idea of vocational schools such that vocational education - such as it was, which was not much - was delivered in a mixed setting. There was never much doubt that this was an unsatisfactory outcome which contributed to the Britain's declining economic fortunes over the latter half of the last century. Where vocational education established itself, as will be explained below, the quality of general education provided was limited and certainly paled in comparison with that provided by vocational programmes in, for example, Germany and France (Green, 1998; Payne, 2000; Steedman, 2001). The general content of vocational education has been long regarded by commentators as a weak spot in England's vocational education and training (VET) system.

Understanding how VET has developed – and place of general education within it - from the 1990s onwards requires some exploration of developments in the 1980s. A New Training Initiative: An Agenda for Action (1981) which set out the government's plans to develop a VET system effectively paved the way for the introduction of National Vocational Qualifications (NVQs). NVQs were first introduced in 1986. Their purpose was to provide a structure for the accreditation of a wide variety of qualification. Table 1 summarises the levels at which they were –and continue to be - offered.

Table 1: National Vocational Qualification Levels

Level	Description	EQF level
Level 1	Competence which involves the application of knowledge and skills in the performance of a range of varied work activities most of which may be routine and predictable	A low level of attainment at Level 2
Level 2	Competence which involves the application of knowledge and skills in a significant range of varied work activities, performed in a variety of contexts. Some of the activities are complex or non-routine, and there is some individual responsibility or autonomy	A relatively high level of attainment at Level 2
Level 3	Competence which involves the application of knowledge and skills in a broad range of varied work activities performed in a wide variety of contexts and most of which are complex and non-routine	Level 3
Level 4	Competence which involves the application of knowledge and skills in a broad range of complex, technical, or professional work activities performed in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy	Level 4/5
Level 5	Competence which involves the application of skills and a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts	Level 5

NVQs were intended to provide a means of certificating occupational competence to national standards of performance according to the requirements of an occupation on the basis of work-based assessment. They were specified wholly in terms of outcomes and are independent of any learning processes. They were also employer led and designed to develop the level of competence needed in the workplace (Jessup, 1991). A criticism from the outset was they were designed to narrowly meet current needs and current needs were considered insufficiently high, tied as they were to National Occupational Standards. This is returned to below. But it is important to point out that they were also beneficial in that they provided order to the vast array of qualifications on offer and provided a means whereby those already in work could obtain an NVQ in large measure through the prior accreditation of existing skills. Given that a large percentage of workers had no vocational qualifications at all when NVQs were first introduced it proved a means of working towards gaining recognised qualifications and subsequently to self-improvement. And by concentrating on competencies skills learned by experience could be codified and made more transferable (Marsden, 1995). In many respects they represented a quick fix solution to the problem that Britain was in danger of falling behind some of its main competitors because of the lower levels of qualification and skill levels found in its workforce. In a short space of time NVQs had been developed for occupations which covered 80 per cent of the workforce (Raggatt and Williams, 1999). And by mid-2000 this has increased to around 90 per cent with about of 800 NVQs available.

As noted above, there were concerns from the start that NVQs had a narrow occupational focus. Existing qualifications were often much more comprehensive than their NVQ counterparts. For example, the existing City and Guilds plumbing qualification not only required a higher level of practical, technical expertise, but also knowledge of physics, electronics, mathematics, technical drawing and technology (Smithers, 1993; Senker, 1986; Gruglis, 2001). The NVQ contained none of these. Consequently, NVQs struggled to gain recognition with employers and learners and the rates of return to studying them were lower than comparable qualifications at the same level (London Economics, 2011). It was noted that some employers continued to insist upon their apprentices completing an existing qualification, such as City Guilds, rather than a generic NVQ when undertaking an apprenticeship (Hogarth et al., 1996). There were also concerns that the assessment process – based on producing evidence of competences such as completing log books and the like – was an unreliable process. In other words, if the assessment was repeated there was no guarantee that it would yield the same result (Stasz, 2001).

It is notable that the general education is largely missing from the NVQ per se. An example is provided below of a provider's description of what is required to complete an NVQ level 2 to become an electrician (see box).

Example of NVQ content: electrician

This qualification is not a technical certificate which you spend most of your time in a classroom or workshop, but rather a qualification that is completed in a place of work. To be able to complete this qualification you must be able to evidence your electro-technical competency by completing Electrical installations on site and then have your work assessed by one of our Assessors. The majority of the course is completed on site (a real place of work and not a training centre), a small amount at the training centre and then the final stage is an assessment known as Achieved Measurement, which will be completed at an Achieved Measurement approved centre.

In looking at the development of vocational qualifications over recent decades it is useful to make a distinction between apprenticeship training and that which is predominantly delivered in the classroom.

Publicly funded apprenticeships commenced in 1994. Within a short space of time government became increasingly anxious about variable standards required to complete an apprenticeship, especially regarding the level of knowledge required to gain the NVQ. An apprentice needed to complete an NVQ as part of the process of completing an apprenticeship. Taking up the recommendations of the Modern Apprenticeship Advisory Committee, Technical Certificates were introduced to stand alongside the NVQs. In order to obtain a Technical Certificate an apprentice needed to acquire, through taught off-the-job training, the underpinning knowledge relevant to a particular framework and NVQ (QCA, 2002). This was interpreted by some, at the time, as recognition that NVQs were insufficient to provide young people with the skills needed to succeed in the labour market. By 2005, the Technical Certificate had become optional rather than compulsory for completion of the apprenticeship and in some frameworks there was no separate assessment of the knowledge-based element outside of the NVQ. There are two opposing views about the relegation of the Technical Certificate reported in the House of Lords Inquiry (HoL, 2007):

- the Government at the time's view was that the Technical Certificate introduced unnecessary duplication where the knowledge requirement was now incorporated within an NVQ; *versus*
- a view expressed by academic observers and some industry groups that this represented a watering down of minimum standards compared with competitor countries.

It is notable that employer organisations were supportive of a substantial technical component to an Apprenticeship and regarded this as central to engaging employers with the programme (BCC, 2006). The critique of apprenticeships was that the general education content was weak. Although the frameworks contained a requirement for individuals to have a mathematics and English qualification (typically at Level 2) there was relatively little specification of general education. Reflecting on the Act of Parliament which revamped apprenticeship training in 2009, Brockmann et al. commented: "The most striking omission in the draft Bill is an educational element. Apprenticeship represents a distinctive form of educational experience which, in order to command public confidence and provide a trusted bridge between childhood and adult life, has to engage with meaningful employment on the one hand and continuation of the education of the young person on the other" (Brockmann et al., 2010, p.10). This echoes criticisms in the Wolf Review to the same effect that apprenticeships in England contained much less in the way of a general education element than in other apprenticeship systems (Wolf, 2011).

Frameworks have now been supplanted by standards. Apprenticeship frameworks were criticised for being too rigid with little flexibility offered to match content to local conditions or employer requirements and containing insufficient general content compared with the situation in Europe (Wolf, 2011). They were developed by sector bodies (Sector Skills Councils). There was a view that apprentices could complete the apprenticeship but not have the skills required to do the job in which they had been trained (Richard, 2013; DfE, 2018). This criticism – though the evidence for it is not that evident – ultimately led to the replacement of frameworks with standards.

Apprenticeship standards, which have increasingly replaced frameworks from 2017 onwards, are designed by employers (or groups of employers), are less specific with respect to what is to be learnt (a framework document could be many pages long, a standard is about two to four pages long), do not need to contain a qualification, and requires an end point completion (undertaken by an end point assessment organisation) to determine whether the apprentice has achieved the required level of competence. An apprenticeship framework specified the skills the apprentice needed to acquire to successfully complete their training. The content of a framework, set by a sector body, was designed to lead to attaining an externally accredited qualification(s). Under frameworks, apprentices were assessed at various stages of their training with no overall assessment at the end. Standards, in contrast, are occupation rather than qualification focused and designed by groups of employers. An assessment is carried out at the end of the apprenticeship to assess whether the apprentice has acquired the skills required to successful practice in an occupation. There is not necessarily an award of a qualification, though in practice many standards incorporate one.

With frameworks, apprentices were assessed as they progressed through the apprenticeship with no end point assessment.. A number of features are apparent in the switch to standards:

- employers are more to the fore in the design of standards, though it needs to be borne in mind that the employer voice was strong on the sector bodies which designed frameworks;
- it is not clear whether there has been any change in general content of training insofar the commitment to this seems to be the same as for frameworks – i.e. a qualification in mathematics and English;
- it is not clear to what extent decoupling an apprenticeship from a qualification results in change in the general component (depending the content the qualification(s) used in the frameworks);
- the extent to which apprenticeships are now more oriented on the future career of the apprentices rather than satisfying the current needs.

Standards are much less prescriptive than frameworks (simply as a consequence of the detail provided) but it is far from clear to what extent they address the earlier criticisms of apprenticeships, and it is not always clear to what extent there have been substantial changes in practice.

Tables 2 and 3 summarise the content of a framework and a standard for two apprenticeships (electro-technical installation and health care assistant respectively).[1] In summary, there would appear to be relatively little difference between the respective frameworks and standards. This is perhaps not surprising since, if the opposite were true, this would imply a major policy failing with respect to the apprenticeship system under frameworks. An alternative interpretation is, perhaps, that the introduction of standards marks a further shift towards the content of apprenticeships becoming increasing focussed on the specific competences required to undertake a particular job. Where change is perhaps more substantial is with respect to assessment.

[1] A more detailed example of a standard is produced in Annex 1.

Table 2: Electrical maintenance/electrical installation: framework and standard compared

	Electro-technical Industry (Level 3) at least 42 months, typically 48 months	
Type of apprenticeship	**FRAMEWORK** **(a) Pathway 1: Electrical Installation, (b) Pathway 2: Electrical Maintenance** Issue date: 27 June 2012	**STANDARD** **Installation Electrician and Maintenance Electrician** Approved since 10/09/2015
To be achieved	• **Qualification**: (a) Level 3 NVQ Diploma in Installing Electro-technical Systems and Equipment (Buildings, Structures and the Environment), (b) Level 3 NVQ Diploma in Electro-technical Services (electro-technical maintenance)[1] • **Level 2 in English and maths** (functional skills)[1,2] • ICT[1,2] • Other elements integrated into the apprenticeship / NVQ Diploma[3] • **AM2 test**, final exam, integrated into the NVQ Diploma (16.5 hours)	• **Qualification**: Level 3 Electro-technical Qualification, (Installation) or (Maintenance) • **Level 2 in English and maths**
End-point assessment (EPA)	N/A (but note it was incorporated at the end of the NVQ)	After all of the above have been achieved ✓ **AM2S test** (Electrotechnical Assessment of Occupational Competence) (16.5 hours)[4]

Notes:

[1] Total of 726/714 Guided learning hours (1st figure represents (a) and 2nd figure (b); Total credits: 119/118, consisting of 104/103 credits for the NVQ Diploma (knowledge elements: 69/67 credits and competence: 35/36 credits), 5 credits for English and maths respectively and 5 credits for ICT

[2] English, maths and ICT are described as transferable skills (SASE guidance) or functional skills and key skills (see occupation specific SASE framework).

[3] This comprises: (a) Employee rights and responsibilities (part of the NVQ Diploma); (b) Personal learning and thinking skills: creative thinking, independent enquiry, reflective learning, team working, self-management, effective participation (evidenced through the NVQ Diploma); (c) Level 3 Award in the Fundamental Principles and Requirements of Environmental Technology Systems (encouraged by industry to be integrated into the delivery mode); (d) AM2 (3 day trade test).

[4] The AM2 test consists of four parts: composite installation: inspection and testing of the completed composite installation: fault diagnosis and correction; assessment of applied knowledge. This satisfies requirements to register as Eng Tech by the Engineering Council.

Sources: Apprenticeship Frameworks: Electrotechnical (England); Occupational Standard https://www.instituteforapprenticeships.org/apprenticeship-standards/installation-electrician-and-maintenance-electrician-v1-0, Installation electrician / maintenance electrician apprenticeship – assessment plan https://www.instituteforapprenticeships.org/media/1784/electrotechnical-trailblazer-assessment-plan-1-may-18-including-ifa-eqa-statement.pdf

Table 3: Clinical healthcare support worker: framework and standard compared

	Healthcare (level 3)	
Type of apprenticeship	**FRAMEWORK** **Clinical healthcare support**	**STANDARD** **Senior Healthcare Support Worker**
Duration of Apprenticeship		18-24 months
To be achieved during the Apprenticeship programme	➢ **Qualification**: Level 3 Diploma in Clinical Healthcare Support ➢ **Level 2 in English and maths** ➢ ICT ➢ Employee rights and responsibilities	➢ **Qualification**: Level 3 Diploma in Healthcare Support services ➢ Induction, meeting the 15 Standards set out in the Care Certificate [1] ➢ **Level 2 English and maths**
End-point assessment (EPA)	N/A	After all of the above have been achieved: ✓ Multiple choice questions ✓ Observation of practice ✓ Professional discussion

Note:

[1] The Care Certificate was developed jointly by various bodies (Skills for Care, Health Education England and Skills for Health) in response to the Cavendish Review (see https://www.hee.nhs.uk/our-work/care-certificate)

Source:

https://findapprenticeshiptraining.apprenticeships.education.gov.uk/Apprenticeship/Framework/473-2-1/health-clinical-healthcare-support-health-clinical-healthcare-supportAlongside apprenticeships there have been various attempts to establish school based vocational education. In 1993, General National Vocational Qualifications were introduced. GNVQs were developed in response to industry concerns about the quality of NVQs. They were awarded at three levels:

1. Foundation (Level 1)
2. Intermediate (Level 2 equivalent to a lower secondary qualification);
3. Advanced (Level 3 equivalent to an upper secondary qualification e.g. an A-level and grating access to higher education).

These were broad based vocational qualifications relevant to a number of occupations. Despite being vocational qualifications, the specification of GNVQs suggested that there would be limited work experience. What might have been expected to be delivered through work experience was instead supplied through undertaking projects and assignments. The general element of education consisted of core skills: information technology, application of number, information technology, and a foreign language. Problem solving and personal skills were options. The notion of core skills was fiercely criticised (Payne, 2000). In comparison with the general education delivered to vocational students in countries such as Germany and France, core skills were: "…. an impoverished form of general education which is neither adequately delivering the minimum basic skills normally associated with an effective general education, such as verbal articulacy, logical skills and mathematical literacy, nor even a foundation of scientific and humanist culture adequate to the demands of active citizenship in

modern societies" (Green 1998, p.40). The awards were eventually phased out completely in 2007 mainly a consequence of government indifference to them. But the idea of creating a strong vocational pathway through upper secondary education other than through apprenticeships – and which reflected a strong employer input into their content – remained.

A further attempt to provide a predominantly school based pathway through upper secondary education was launched in the government's Post-16 Skills Plan (2016). Building upon the recommendations from the Independent Panel on Technical Education, it announced:

> Our ambition is that every young person, after an excellent grounding in the core academic subjects and a broad and balanced curriculum to age 16, is presented with two choices: the academic or the technical option. The academic option is already well regarded, but the technical option must also be world-class. As with the reforms in higher education, we want to improve both the quality of education and student choice. There should be appropriate bridging courses to make movement between the two options easily accessible (Post-16 Skills Plan, p.7)

Parity of esteem between vocational and general education was to be achieved through the introduction of employer designed T-Levels. Here once again is the recurring theme of parity and employer influence in the design of qualifications. By the end of 2020, T-levels will have been introduced. These are equivalent to three A-levels (the most common general qualification at upper secondary level). There are two-year courses which have been developed in collaboration with employers to ensure that they meet the needs of industry. T-level panels comprising employers, professional bodies and training providers are responsible for designing the content of apprenticeships. T Level courses include the following compulsory elements:

- a technical qualification, which will include
    - core theory, concepts and skills for an industry area
    - specialist skills and knowledge for an occupation or career
- a minimum standard in maths and English
- an industrial placement. Every T Level will include an industry placement with an employer focused on developing the practical and technical skills required for the occupation. These will last a minimum of 315 hours (approximately 45 days) but can last longer. Employers can offer these as a block, day release or a mix of these.

Initial indications suggest that there is a substantial general element. Annex 2 provides a list of some of the general skills which those studying towards a T-level will need to acquire.

3. Relationship between CVET and VET

The labour market in England is one which has experienced relatively low levels of unemployment over recent years coupled with high labour force participation levels and, until recently, strong employment growth. The latter has been driven, at least in part, by reforms of labour regulation stretching back to the early 1980s. These reforms made it easier for employers to hire and fire employees – though employment protection regulation was never

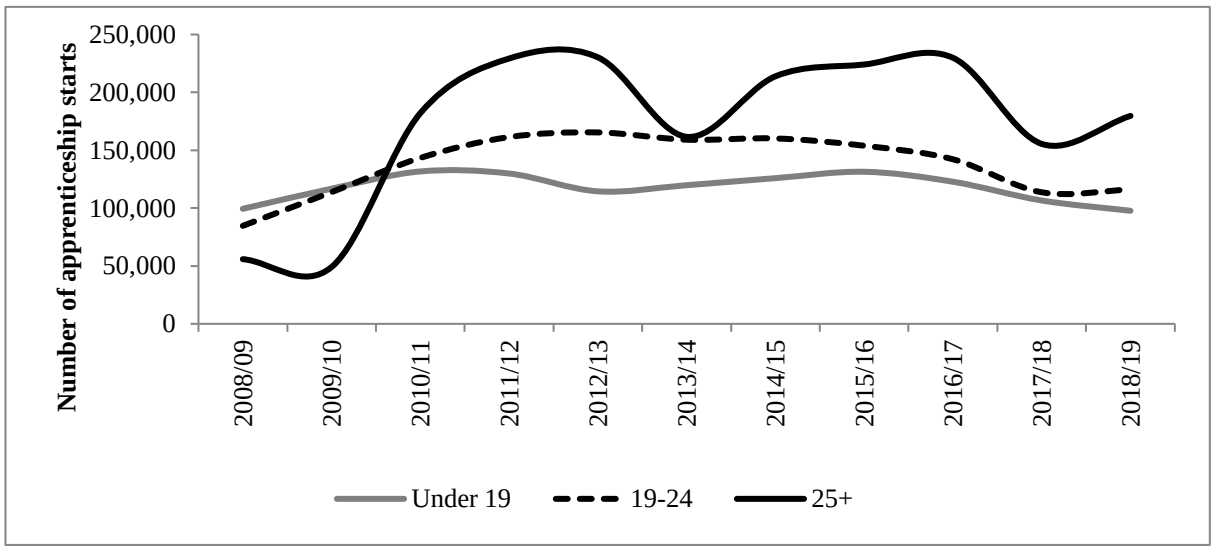
that strong compared with many west European countries – alongside changes to the welfare state which made receipt of social security benefits more targeted. Employment growth, however, has depended upon the creation of relatively low skilled, low waged work which has little demand for substantive training. Added to this, the emergence of non-standard forms of employment, such as zero-hour contracts, further dampens the demand for training. And because there is relatively little wage compression – collective agreements are quite rare outside of the public sector – there is little to incentivise employers to train their less skilled workers. This all contributes to the long-tail of people with relatively low level skills which has been a perennial problem facing the economy and society. The Leitch Review (2006) drew particular attention to the relatively high dependence of the economy upon low skilled individuals. It pointed to the 7 million adults lacking functional numeracy and 5 million lacking functional literacy, and the fact that the percentage of people with no qualifications was higher than in competitor countries (Leitch Review, 2006). PIAAC also drew attention to relatively weak skills in the adult population and the fact that the country has some of the highest proportions of adults scoring at or below Level 1 in numeracy and literacy (OECD, 2013). Being able to improve the quality of skills supply has been seen – and continues to be - as critical to improving the country's economic competitiveness and is central to the current Industrial Strategy which seeks to redress uneven regional growth and improve overall competitiveness.

While CVET is primarily considered to be a private investment decision for the employer or the individual employee, it is apparent that government at national and local levels have sought to intervene to ensure that individual employees have the skills required to both remain in employment and progress in the labour market. This is typically linked to the acquisition of a qualification (a requirement for receipt of funding) and to achieve this goal what might be considered to be the IVET system in other countries, has been used to deliver CVET thereby blurring the boundaries between the two. Historically, training - both IVET and CVET - were funded and organised by industry (Gambin and Hogarth, 2017). From the 1970s onwards government took more of an interest in the development of training with, amongst other things, the creation of an external training market for the delivery of skills. This stemmed from concerns that country's system of skills supply was under-developed compared with better performing economies. To stimulate skills supply required IVET and CVET to be wrested from industry's control. This was achieved by developing an external training market. Rather than employers delivering training via their in-house facilities this was to be provided by further education colleges and private providers which were publicly funded to deliver programmes leading to nationally recognised vocational qualifications. There were manifold benefits from making this shift, including:

- generating economies of scale in the delivery of training;
- improving the range of training available to employers and learners;
- increasing the quality of training provision given that it was delivered against national standards and competition between providers should lead to quality improvements.

While this affected IVET rather more than CVET, it had implications for the latter given that employers' in-house training facilities were no longer available to train their existing employees (or at least not to the same extent). It also resulted in the provision of what was ostensibly IVET becoming a form of CVET. At the same time, the introduction of NVQs – described in the previous section – also provided a means of certifying the skills of young people and adults alike. As noted above, NVQs allowed existing workers to gain a qualification through, in large measure, accrediting their existing skills (Marsden, 1995). Apprenticeships have also been open to people of all ages. Following the establishment of publicly funded apprenticeships in 1994, it was apparent that training providers were persuading employers to use this form of training to accredit the skills of existing workers, many of whom had left the education system without qualifications. (Hogarth and Hasluck, 2003; Hogarth et al., 2012). In later years, the focus was much more upon increasing the level of skill held by employees, but the use of apprenticeships to train existing employees – often with long tenure – was firmly established. Figure 1 shows the age profile of those working towards a completion of an apprenticeship and demonstrates the extent to which the growth of apprenticeships has depended upon those aged 25 years and older.

Figure 1: Age profile of apprentices in England



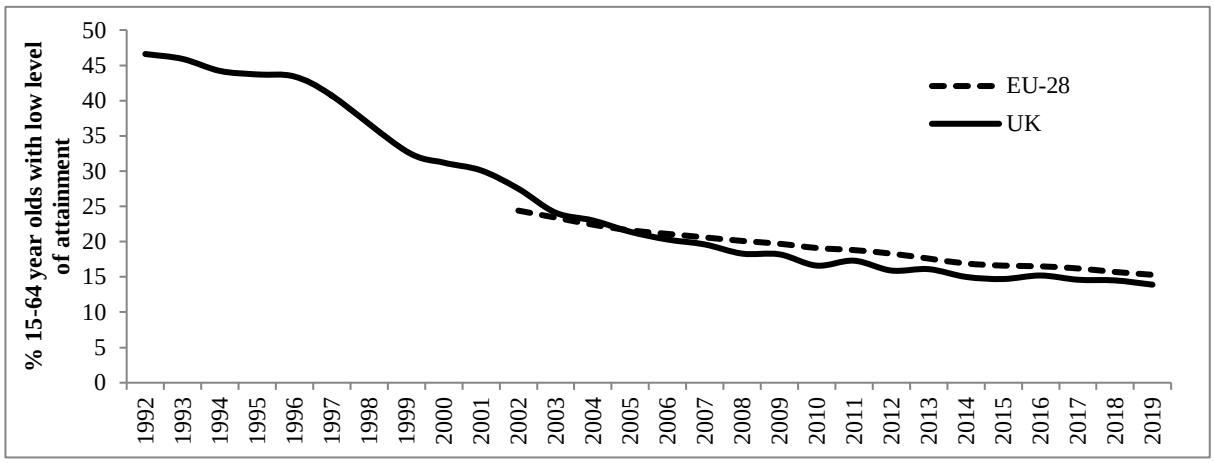
Source: Department for Education

Many of those aged 24+ are often existing employees of the organisation training them. In 2019, 36 per cent of employers said their apprentices were existing employees, up from 23 per cent in 2017 down from 38 per cent in 2015 (IFF, 2020). The implication is that apprenticeships are being used to deliver CVET. It is known that many people gain qualifications in later life. There is a tendency to think that people acquire qualifications in their youth and if they are vocational qualifications they are acquired in the IVET system. But data from a survey of people born in 1958 reveals that 71 per cent obtained a qualification between the ages of 23 and 50, and that 53 per cent gained them aged between 33 and 50 years (Jenkins, 2018). Moreover, in doing so many were climbing the qualifications ladder.

The way in which the IVET and CVET systems have been intertwined has contributed to downward trend in the number of people with low levels of qualification (see Figure 2). But

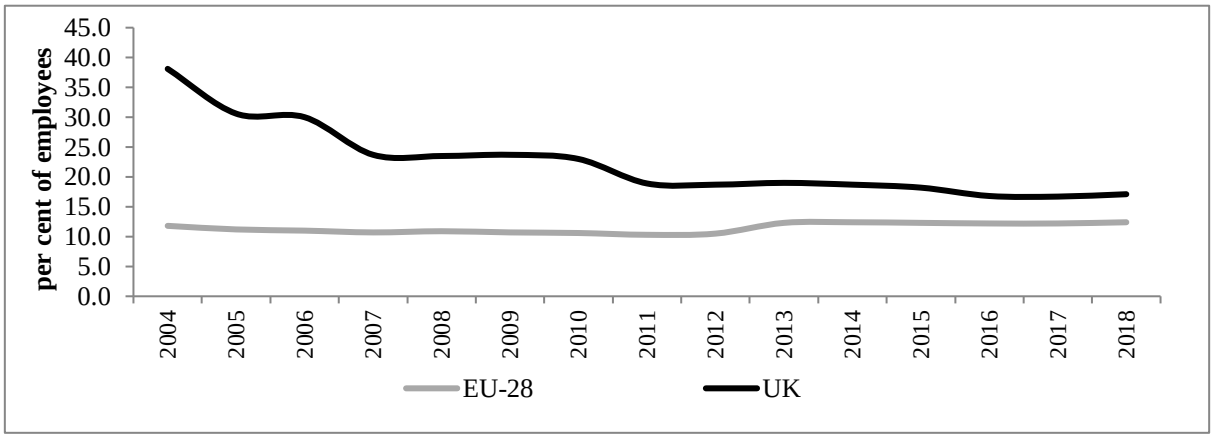
concerns remain from a policy perspective that too many people have low levels of skill compared with competitor countries and this is hampering the country's competitiveness. This is not just about the qualification or skill profile of young people exiting the education and training system but also the skills of those who are in employment. In this regard it is sanguine to note that participation in CVET has been in decline (see Figure 3). The reasons for this remain unclear, though one might venture that changes in the funding of training might account for the observed trend. It is apparent that the adult skills budget has been in decline over time falling, in real terms, from £4.9bn in 2002/3 to £3.2bn in 2018/19 (Institute for Fiscal Studies, 2019). While a decline in student numbers may explain some of this decline, it also reflects cutbacks in public expenditure following the financial crisis (Wolf, 2015).

Figure 2: Trend in low levels of educational attainment (ISCED levels 0-2)



Source: Eurostat edat_lfse_03

Figure 3: Percentage of 25-64 years olds in employment participating in training, 2004-2018

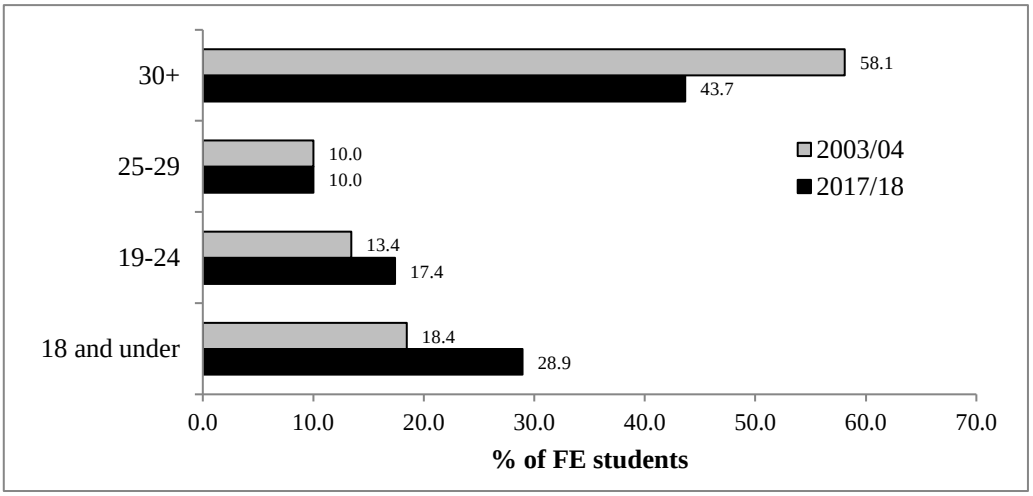


Source: Eurostat - participation rate in education and training (last 4 weeks) by sex, age and occupation [trng_lfs_04]

Over time, IVET has played an important role in supply and accrediting the skills of the adult workforce either supplying skills those in work or providing skills training to those out of work. On the one hand, the number of people low levels of attainment has fallen so arguably demand

for the type of CVET supplied by IVET has fallen. But the long-tail of relatively less qualified / skilled people remains and the capacity of the adult skills system to meet this need has been constrained by budget cutback in the Adult Education Budget. Certainly if one looks at the population of FE students over time it has become more concentrated amongst younger people (see Figure 4).

Figure 4: Student population in FE by age, 2003/4 and 2017/18 compared



Source: DfE Education and Training Statistics (various years)

4. Higher VET

As can been seen in Table 2 there has been, historically, relatively little provision of vocational education at tertiary level. There are some definitional issues about what constitutes vocational education at tertiary levels. Statistics tend to refer to courses working towards qualifications other than degrees delivered by universities.[2] The overall trends in the award of vocational qualifications has been one of decline over the recent past, but as Table 4 indicates the number of awards at Level 3 and above has been increasing and the rate of increase has been particularly strong at Level 5+. Over time there has been particularly strong growth at Levels 6 and 7, though the number of awards at these levels is still relatively small. In 2019/20, there were around 17,000 awards at Level 6 and 8,500 awards at Level 7 compared with 1.4 million at Level 3.

[2] Note that in England that polytechnics, which were vocationally oriented tertiary level institutions, became universities and in doing so lost much of their vocational identify.

Table 4: Trends in the award of vocational qualifications at tertiary level in England

	% Level 3 and 4	% Level 5+	Number of awards
2005	98	2	681550
2010	96	4	1220900
2015	96	4	1472300
2020	95	5	1602000

Source: Ofqual Vocational Statistics, various years

Policy has sought to address two issues:

- create a sizeable vocational element to tertiary education.
- provide a vocational pathway through upper secondary education and into tertiary education (i.e. something which is comparable to the general track; and

Historically vocational qualifications at higher levels have been provided through:

- sub-degree qualifications (such as Higher National Diplomas at Level 5); and
- foundation degrees.

Sub-bachelor qualifications are not readily defined in the statistics but they have a long history. Higher National Diplomas (HNDs) and Higher National Certificates (HNCs) date back to the 1920s. The most recent incarnation is the Foundation Degree; a work-focused qualification. A number of features are apparent:

Many people studying sub-bachelor qualifications continue into higher education to complete a degree, as well as providing qualifications in their own right which prepare a person for work. For some sub-bachelor qualifications, such as the HNC, the arrival of qualifications frameworks has been an important influence on their redefinition as an exit and transfer award. Awards tended to be accorded lower status and reflect social attitudes that value academic over vocational education.

Education at this level suffered a steep decline during the 1980s. The funding crisis which affected higher education in the 1990s led to the rediscovery of sub-bachelor qualifications (cf. the Dearing Committee) and to the creation of Foundation Degrees.

Foundation Degrees were to be:

- designed to be highly valued in the job market
- vocational (delivering specialist knowledge underpinned by rigorous and broad based academic learning) with key skills 'developed through work experience and accredited
- of high quality, designed to appeal to a wide range of abilities including the most able, and drawing on and developing best practice
- developed through collaboration between universities, colleges and employers, including the leaders in their field

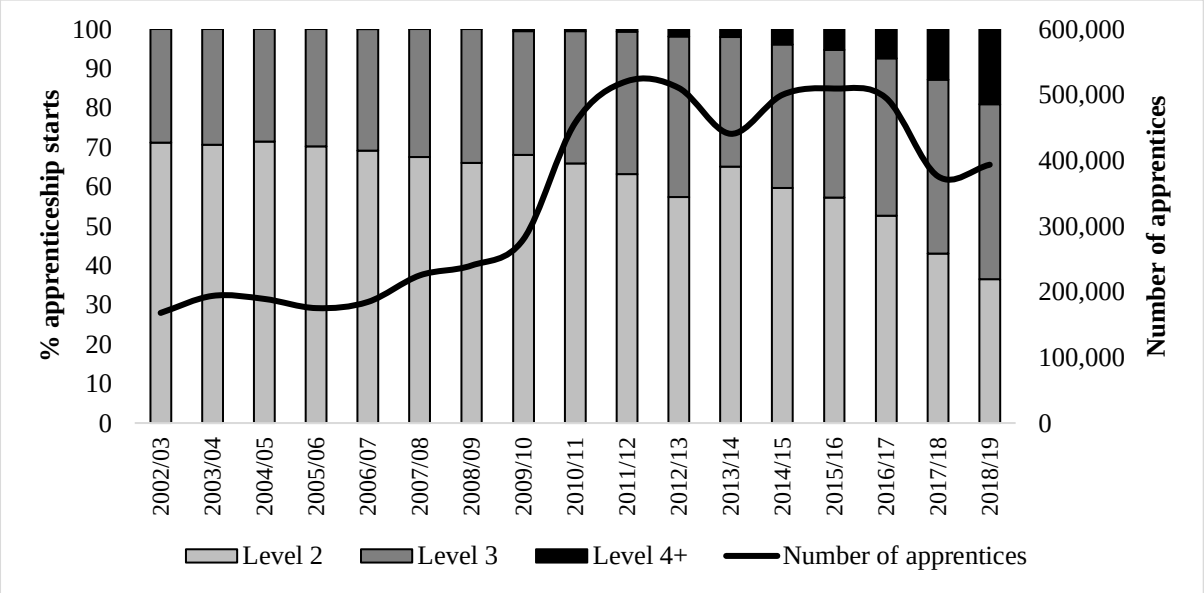
- focus on identifying and developing the key skills and knowledge which graduates need in order to contribute their full potential to all sectors of the labour market, so meeting the needs of employers
- be capable of being delivered on both a part-time and full-time basis, with flexible delivery to suit the needs of people of combining study with a job' (with credits for appropriate qualifications and experience)
- be a widely recognised qualification in its own right' but with 'guaranteed arrangements for articulation to honours degree courses' (with only one and a third extra years of study) and
- stimulate lifelong learning, including through clearly defined credit accumulation and transfer schemes' (DfEE, 2000).

Here was another effort by government to redress the historic 'skills deficit' at the intermediate levels of employment. By involving employers in its design and operation, by enabling students to apply their learning to specific workplace situations, and by ensuring smooth progression to the bachelor degree or higher level training, the Foundation Degree would raise the value of work-focused qualifications. Foundation degrees faced relatively weak demand. In an attempt to further develop vocational skills at higher levels the government sought to expand the apprenticeship system to higher levels. There were various reasons for doing this:

- apprenticeships were seen to be effective in matching skills to the needs of the labour market;
- from the government perspective they were relatively cost-effective compared with funding either bachelor or sub-bachelor education.

This led to creation of Higher and degree apprenticeships at levels 4 to 7. Higher apprenticeships go from level 4 to 7 and are equivalent to a foundation degree and above e.g. a professional qualification. They were mentioned in policy documents from 2008 onwards. Degree apprenticeships are available at levels 6 and 7 (full bachelor’s and Master’s) and came on line in 2015. Figure 5 shows the take-up of higher level apprenticeships over time to reveal the extent to which they have contributed to the overall level of apprenticeship take-up.

Figure 5: Take of higher level apprenticeships in England



Source: Department for Education Apprenticeship Statistics

Potentially, higher level apprenticeships provide a track from Level 2 to a post-graduate level of education designed at every stage to meet employer demand. There are a number of interesting features related to:

- the content of apprenticeships. Standards are meant to simplify the design of apprenticeship programmes and do not necessarily need to include a qualification. By definition a degree level qualification leads to a qualification – i.e. a degree and thereby needs to comply with university regulations concerning the content of a degree;
- their interaction with the skills funding system.

This latter point has implications for apprenticeships (and thereby IVET) at lower levels. All apprenticeships are meant to be funded from Levy revenues. In general, apprenticeships at higher levels receive more funding from government to cover the costs of training delivered by a training provider. For example, a Level 6 engineering apprenticeship (Electrical / Electronic Technical Support Engineer) will attract £27,000 of government funding compared with £18,000 at Level 3 for an Installation Electrician / Maintenance Electrician. There is prima facie evidence that employers are investing more in higher level apprenticeships thereby reducing the amount of funding available at Level 3 and below.

A cohort study tracked students entering apprenticeships in different years (Joslin and Smith, 2015). It reveals that over a seven year period the percentage of apprenticeships entering higher education has been more or less static: of the 2006/17 cohort 19.3 per cent progressed in to higher education compared with 18.8 per cent of the 2005/06 cohort. It is apparent that the transition into HE can take time (i.e. apprentices do complete at Level 3 and then the next year enter HE). When looking at the three-year transition rate, the same data shows that the progression rate has dipped from 11.2 per cent in the 2006/07 cohort to 8.8 per cent in the 2009/10 one.

5. Institutions

The major institutional changes which have taken place over the past 20 years are so include:

- changes in the responsibility for vocational education and training;
- moves to increase diversity of supply and increasing VET provision at higher levels;
- granting employers more influence over the content of VET (i.e. via T-levels and apprenticeship standards).

5.1 Responsibility for VET

Much of the debate about vocational education and training is framed with debate about the respective roles of further education (FE) and higher education (HE). The former refers, for the most part, to education delivered to those aged 16 years and above leading qualification at below tertiary level, though in practice some tertiary education is delivered in FE. HE, in contrast, is education typically delivered to those aged 18 years and older – mainly through universities but not exclusively so – leading to a tertiary level qualification.

Further education has been subject to much organisational change since the 1990s (Panchamia, 2014). Before the 1990s, FE received institutions received a block grant from local government based on the number of expected enrolments. This was reformed in the early 1990s with the creation of Training and Enterprise Councils (TECs) at a regional level which funded work-based training, and the national Further Education Funding Council which would fund FECs. In essence, these organisations funded providers to successfully deliver a number of training / education units. TECs and FECs were given a degree of autonomy regarding what they delivered and how so that they could flex provision to meet local demand. In 2000, both TECs and the FEFC were abolished. Learning and Skills Councils were established, initially at the local level, but then with more central control, which were given responsibility for planning all FE provision. Its responsibilities were, amongst other things, to:

- stimulate demand for learning among young people and adults;
- make provision more responsive to local employer and learner needs
- raise quality standards.

At the same time Individual Learning Accounts (ILAs) were introduced to give individual learners more control and responsibility for their training, but these were quickly withdrawn due to fraud and the low quality of training provision it funded. In 2009, the LSC was abolished. This resulted from the Leitch Review that mandated less planning in FE and more reliance upon responding to market signals. The LSC was replaced by two funding institutions responsible for those aged 16-19 and those aged 19+ respectively. These were further reformed in 2010 with the establishment of the Education and Skills Funding Agency responsible for the education of all those aged three to 19, and the Adult Skills Budget for those aged over 19 years (except for apprenticeships). These agencies were responsible for funding education and training at the post-16 level for which there was a demand. The Adult Skills Budget is now under the control of the Education and Skills Funding Agency and the mayoral authorities and London. The above relates to funding. The content of training has

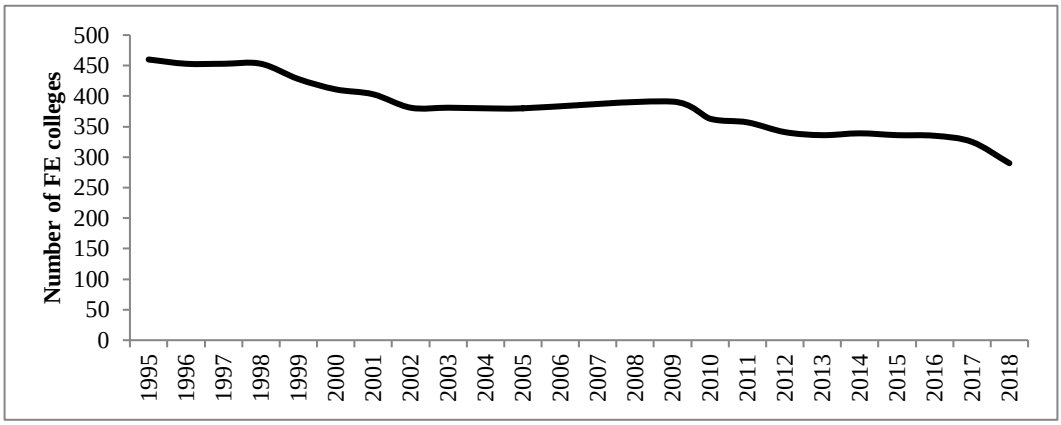
tended to be centrally determined either by AOs or by the Institute for Apprenticeships and Technical Education for apprenticeships and T-levels (in 2017).

The role of the State is seen as central to the operation of the E&T system. It sets goals which employers may welcome but will not implement if they do not deliver a return to them. So the goal to increase the level of skills supply is regarded as laudable by employer organisations and their members but individual employers will not upskill their workers if they do not see a need for it in their own organisation. Ewart Keep, perhaps the most pre-eminent commentator on England's VET system, summed up the situation as follows: "The English state's long-standing commitment to free-market neo-liberalism and relative deregulationist tenets renders unavailable a host of potential policy interventions used in other countries—for example, training levies, strong trade unions and statutory rights to collective bargaining on skills, strong forms of social partnership arrangement, regulated labour and product markets (such as extensive licence to practice requirements), or an industrial policy that might favour higher skill sectors" (Keep, 2006, p.52). The state has therefore needed to intervene - often in a detailed manner with respect to the curriculum - and fund the provision of skills training. The situation may have changed as a consequence of austerity, hence the introduction of the apprenticeship levy on employers in return for which employer have more influence over the setting of standards. But to date there is relatively little evidence to indicate the extent to which, say, the process of setting apprenticeship standards is any different with respect to the past in the sense that employers are being directed to do as the State requires. At the moment the evidence is simply not there to state with any degree of certainty that much has changed at all in this regard.

5.2. Diversity of provision

Historically, publicly funded further education colleges (FEC) dominated the FE sector, but reforms introduced from the 1980s onwards encouraged a range of private providers to enter what became the FE market. The number of FEC has been in gradual decline in England over time such that by 2017 there were nearly 40 per cent fewer FECs (see Figure 6). There are a relatively large number of private providers. During the 1990s the authority then responsible for vocational education (the Learning and Skills Council) introduced Minimum Levels of Performance criteria designed to weed out those providers which were considered to be relatively weak (i.e. the number of learners successfully completing a course was relatively low). This mainly reduced the number of private training providers. In 2017, there were 1,097 independent private providers delivering publicly funded training in FE.

Figure 6: Change in the number of FECs in England, 1995 – 2017



Source: UK Education and Training Statistics – various years

Over the past 30 years or so, one can observe the following changes in the FE landscape in England:

- removal of direct local authority control over FECs from 1992;
- introduction of new forms of vocational skills supply; and
- increased experimentation with alternative institutional supply.

Following the election of a Conservative government in 1979, the UK underwent a period of economic reorganisation which saw the privatisation of many nationalised industries and public utilities. Where privatisation was seen as more politically sensitive, in areas such as health and education, quasi market principles were introduced to improve the efficiency of their organisation. Local authorities were seen as inefficient and, in certain areas, a political obstacle to the government's plans being implemented. This saw local authority control of further education colleges removed (following the 1992 Further and Higher Education Act) with it passed to central government through a range of agencies such that by 2020 control over the FE colleges is principally through the way they are funded (Simmons, 2014). One analysis points to changes being introduced where colleges became business led, students were customers, and 'funding streams' replaced what had been previously been referred to as classes and courses' (Lucas and Crowther, 2016).

Alongside policies which affected the standing of FECs there was the influx of many new entrants into the training market from the 1980s onwards. Private training providers became much more visible in the FE sector. Whilst FECs may still account for the majority of learners, the number of private providers far outnumbers that of FECs. In many respects the private providers delivered parts of what FEC already provided and some worked with – and continue to do so – with FECs in, for instance, the delivery of apprenticeships. But there have also been other attempts to change the way in which vocational education is delivered with the emergence of new types of institutions. Key changes have included changes in the compulsory school sector where technology education is given a special emphasis such as City Technology College initiative in the early 1990s and more recently the creation of studio schools – part of the free school movement encouraged by the Department for Education (2016).

Studio schools and UTCs both recruit students at age 14 years which is a break with the existing lower secondary / upper secondary divide in the education system in England where transitions are at ages 11 and 16 years. Studio schools are designed to provide students with practical skills and given them greater access to vocational programmes and qualifications. The schools have close links to local employers which are expected to play a role through mentoring, etc. UTCs are led by a university sponsor and have strong ties to local businesses. They have been promoted by the government as an important vehicle for providing more pupils with the technical skills needed to prepare them for entry into higher education and the labour market (Thornley, 2017). Studio Schools deliver vocational education in addition to mathematics, English and science subjects to 14-19 year olds, all designed to deliver national recognised qualifications. A new curriculum was developed specifically for Studio Schools entitled CREATE (Communication, Relating to people, Enterprise, Applied skills, Thinking skills and Emotional intelligence). An initial assessment of Studio Schools indicated no particular problems with them, other than the number of pupils they had been able to attract was limited with many schools have spare places (NARIC, 2014). Since then many have closed. In general, the new types of institution have not fared well and remain fairly small in number: in 2020 there were 48 UTC and 24 studio schools. The general view is that they have not been a success insofar as they have failed to attract sufficient pupils resulting in several of them closing. The invention of these type of institutions can be interpreted as a frustration with existing structures. By creating new ones the perceived forces of conservatism which block reform can be circumvented, but it seems to be the case that parents are wary of sending their children to new, untried institutions especially where places are available in nearby existing secondary schools.[3] There are also implications for the diversity of supply with respect to higher level vocational qualifications (see Section 4).

5.3 Qualifications

An important element of the market is that there should be competition in the supply of vocational qualifications and in the organisations delivering them. It is recognised that the growth in the number of qualifications and the number of organisations delivering them over time may have produced a complex market which employers and leaners struggle to navigate (Frontier Economics, 2017). That said, there is a view that one strength of the system in England is that the system of independent awarding bodies allows for multiple direct links between qualification development, the labour market and higher education. It is not so much so much the principle of having a large number of AOs and qualifications which is aberrant but the way in which the system has been managed by successive governments (Wolf, 2011).

An evaluation of the market for vocational qualifications indicated that:

- there is a tendency for training providers to select AOs and qualifications that are easier to pass;

[3] In some areas there is competition to obtain a place at secondary schools. Places are, for the most part, determined by the distance from home to school. Pupils, or their parents on their behalf, may prefer to send their children to a school other than the nearest one for various reasons, such as its position in the school examination league table or its latest Ofsted report. It is not unusual for pupils to be denied a place at their first choice school. Alternative providers may prove to be an attract alternative where nearby schools are deemed unsuitable by parents.

- high barriers to training providers switching between AOs;
- smaller providers do not have the means to select AOs and qualifications which best meet the needs of employers and learners;
- despite a growth in the number of AOs and qualifications there are segments of the marker where there is relatively little head-to-head competition at the level of individual qualifications (Frontier Economics, 2017).

Looking to the degree of competition between FE providers, a complementary analysis of the market revealed, amongst other things, the following (Frontier Economics, 2015).

- Providers offering a limited range of courses is a common feature of the FE market and it is these providers which tend not to have the flexibility to changing employer and learner demands.
- Providers find it costly to switch AOs which may inhibit their capacity to respond to change.
- Short-term funding hinders longer-term planning, innovation and investment which is further complicated by uncertainty related to future policy shifts.

Table 5 provides information on the how the number of qualifications has changed over time. The qualification system in England has developed at arms-length from government. Organisations responsible for delivering qualifications have been independent upon government and an important strand of policy has been to encourage competition between awarding bodies. This has resulted in a large amount of qualifications including vocational ones. The structure of qualifications has been governed successively by the National Qualifications Framework, the Qualification and Curriculum Framework (QCF) and now the Regulated Qualifications Framework (RQF). In essence these provide rules regarding the content of qualifications to be accredited at a certain level. In part the shift to the RQF in 2017 was an attempt to place the onus on the awarding body to ensure that the qualification met the RQF rules rather than Ofqual, the government agency responsible for the RQF, needing to vet every qualification. The large number of qualifications is regarded by some as making the market for qualifications too complicated with the result that there have been attempts to periodically cull a number of them. Despite successive attempts to reduce their number, they tend to grow back. It has been said that the employers are clear about the qualifications they recognise as conferring value but are confused by government attempts to reform the system of vocational qualifications (Wolf, 2011)

Table 5: Available qualifications where an award made, 2014 to 2018

	Available qualifications				
Qualification Type	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**
Advanced Extension Award	1	1	1	1	1
End-Point Assessment	0	0	0	5	6
English For Speakers of Other Languages	279	231	209	208	229
Entry Level	57	52	37	32	16
Functional Skills	209	209	203	179	166
GCE A Level	224	221	271	228	201
GCE AS Level	226	279	294	247	189
GCSE (9 to 1)	0	0	12	96	138
GCSE (A* to G)	340	340	335	180	12
Key Skills	25	13	1	0	0
Occupational Qualification	2,316	2,690	2,980	3,219	3,268
Other General Qualification	334	376	440	430	436
Other Life Skills Qualification	1,132	1,121	1,152	1,210	1,268
Other Qualifications	103	40	21	10	0
Other Vocational Qualification	315	345	388	509	512
Performing Arts Graded Examination	321	337	351	348	371
Project	12	12	12	13	13
QCF	3,449	2,555	1,634	726	172
Vocationally-Related Qualification	3,934	4,231	4,614	5,112	5,254
Total	**13,277**	**13,053**	**12,955**	**12,753**	**12,252**
Total vocational or vocational related	6,565	7,266	7,982	8,840	9,034

Source: Ofqual Annual Qualifications Market Report 2018 to 2019 academic year

6. Conclusion: Harmonisation, diversification, pluralisation, academic/vocational drift

Over the past 25 years or so there have been many changes which affected the structure and content of VET in England. At different points one can identify particular policy preoccupations, such as localism, but in 2020 the VET system it is difficult to say with any surely whether the

VET system looks very much different from that in 1995, other than the disarray which has been wrought by austerity and successive cuts to FE spending. For example:

- it is not clear that the supply of productivity enhancing skills has been increased in the VET system;
- whether or not the general education element designed to provide the underpinning knowledge associated with particular skills has improved or not is a moot point. In the apprenticeship system it is largely down to employer groups to decide what is to be delivered other than functional maths and English;
- there remain a large number of qualifications on offer. For some this means there is choice which meets the complex skill needs of the labour market, for others it creates an overly complicated system which employers and would-be learners struggle to navigate. Despite periodic attempts to reduce their number, they always seem to grow back again;
- VET policy is still largely determined centrally. While the Adult Skills Budget (ASB) has been devolved to local areas in some cases, the ASB is a relatively small share of the overall spend on VET;
- providers have more autonomy to deliver courses and programmes required in local labour markets – their funding forces them to do this - but those programmes and courses are designed nationally;
- there are examples of new types of provider entering the VET 'market' (cf. studio schools and UTCs but these have not been an overwhelming policy success);
- the voice of the employer is to the fore in the design of VET programmes (i.e. apprenticeships and T-levels) but it has always been so and the extent to which employers want to be involved in the design of VET is again moot (Hogarth et al., 2014);
- IVET and CVET are intertwined but then they always have been in the post-1995 period;
- VET at higher level is, perhaps, more visible with the introduction of higher and degree level apprenticeships but there has been experimentation in the past with VET at higher levels which have not produced the results policy makers might have wanted (i.e. participation levels have not been large).

Where there has been substantial change is with respect to assessment and the introduction of T-levels. End point assessment, carried out by end point assessment organisations, is the means by which completion of an apprenticeship will be determined. This replaces the previous system which was a mix of completing a qualification and on-going assessment of competence. T-levels mark another attempt to create a vocational pathway with parity to the general one at upper secondary level and which will comprise a substantial general element. These will be introduced from 2020 onwards. It should be noted that we have been here before with GNVQs and Diplomas, but T-levels nonetheless have the capacity to transform VET at upper secondary level and a means to continue into tertiary education given that a T-level is equivalent to three A-levels. It is a case of watch this space.

Perhaps the problem is the one Keep (2006) alluded to some years ago. The policy goal is to create something for which there is relatively little demand. In many respects VET commenced in earnest in the early 1990s with the creation of a publicly funded apprenticeship programme. The intention was always that of developing skills at an intermediate level to the same extent as the country's European competitors. The relatively strong economic performance of

Germany, for example, was seen to be at least partially dependent upon there being a strong VET system. But whether the level of demand for skills at an intermediate level was ever that strong is open to question. Employment growth has been dependent upon the creation of many relatively low paid, low skilled jobs which require on average qualification at Level 2. It seems to have an uphill struggle from the start to persuade a sufficiently large number of employers to provide apprenticeships, especially at Level 3, which indicates that skills demand is not that strong (though the way apprenticeships are funded may have a role to play here too). The introduction of higher level and degree level of apprenticeships is a response to employer concerns that people exiting university are not sufficiently well prepared for the world of work. The evidence base for these assertions is uncertain. In some cases, employers may simply expect too much from their graduate in-take and are reluctant to provide the training which might have been in place in the past (in many respects this a rationale response to creating a more mobile labour market where people move between employers). What impact this will have upon the numbers of those taking the general pathway through tertiary education is yet to be seen; while growth in the numbers taking higher / degree apprenticeships is relatively high the number of apprentices is small. And some higher apprenticeships are a form of CVET.

The constant remake, remodel policy approach to VET in England arguably sends, at best, mixed signals to young people and employers. There are large sections of the VET system which are seen to work well, such as various Level 3 qualifications linked to skills needed in engineering and manufacturing, which tend to have a long history and sometimes retain the link to a longstanding qualification. But demand here is not that large. It is the policy goal of extending VET to new occupations and sectors which has proved to be most challenging. Funding, historically, has been used to produce the volumes of training needed but governments during the 2000s wanted dependence on state funding for VET to be reduced. This was accelerated in the post-financial crisis period with the introduction of the Apprenticeship Levy, to be paid by employers, the revenue from which has had to fund all apprenticeships not just those of levy payers, with the result that the number of apprentices has fallen.

In summary, one can point to the following key findings. England has a relatively large number of vocational qualifications. Despite periodic reforms which have sought to cull the number of qualifications, the number remains large (last year the government announced that it was reviewing the number of qualifications at Level 3).[4] With the introduction of apprenticeship standards, it is possible that the number of standards (a quasi-form of qualification) will increase as employers look to develop an apprenticeship for a new occupation. Time will tell. It is also apparent that the policy debate about the balance between general versus vocational education appears to have been largely settled with the emphasis, over time, being increasingly on the specific skills required to be competent in an occupation. This will vary according to the occupation. It is clear that some apprenticeships standards have a substantial general element (especially at Level 3+). But the policy debate would appear to have been largely settled – there is a system in place which allows the content of an apprenticeship to be shaped by the requirements of the occupation (notwithstanding the requirement that Level 2 in English and maths is attained). As noted in the main body of this report, the balance between general versus academic content has been robustly critiqued, but the policy discourse seems to have side-stepped this issue. The determinant of the above

[4] https://www.gov.uk/government/news/next-stage-of-post-16-qualifications-overhaul-gets-under-way

trend, arguably, has been the primacy of the labour market perspective in the design of policy – i.e. that vocational education and training must be closely tied to the needs of the labour market (cf. the creation of a demand led system); hence the primacy given to employers (or employer groups) in the specification of VET content. A range of changes have been made to the structure of VET provision but many of these are of limited scale (UTC, studio schools, etc.). The major structural changes have been the creation of external training market (comprising further education colleges and private providers) in the late 1980s and, increasingly so over recent years, the use of funding to ensure that training providers are responsive to the market. Whether the reforms have worked remains moot. There would appear to be a responsive system in place but it satisfies demand at a level that would appear below that considered desirable by policy makers. At the time of writing (October 2020) there are plans afoot to once again revamp the technical and vocational education in England. At the moment the precise details are unknown but there has been press coverage reporting on the need to create a further education system qua technical and vocational education and training system that would compare favourably with countries such as Germany.[5] There a sense of déjà vu here. Whether the planned reforms achieve this goal only time will tell.

[5] The Education Minister is quoted as saying: "For decades, we have failed to give further education the investment it deserves. Our universities have an important role to play in our economy, society and culture, but there are limits to what we can achieve by sending ever more people into higher education, which is not always what the individual and nation needs. That's why this autumn I will be publishing a White Paper that will set out our plans to build a world-class, German-style further education system in Britain, and level up skills and opportunities" (Source: https://feweek.co.uk/2020/07/09/government-to-reveal-plans-this-autumn-to-create-an-employer-led-german-style-fe-system/)

References

Ainley, P. (1988) *From School to YTS: Education and training in England and Wales 1944 – 1987*. Milton Keynes: Open University Press

Beaumont, G. (1995). *Review of 100 NVQs and SVQs*. London: NCVQ/SCOTVEC.

Brockmann, M, Clarke, L. and Winch, C. (2010) 'The Apprenticeship Framework in England: A new beginning or a continuing sham?' *Journal of Education and Work* 23(2):111-127

BCC (2006) *Building a Skilled Nation: The Business Perspective on Education and Skills*, British Chambers of Commerce, London

DfE (2016) *Educational Excellence Everywhere* London; Department for Education

Evans, B. (1992) *The Politics of the Training Market: From Manpower Services Commission to Training and Enterprise Councils*. London: Routledge

Frontier Economics (2017) *Assessing the Vocational Qualifications Market in England*. London: Department for Education Research Report

Gambin, L. and Hogarth, T. (2017). '*Employers and apprenticeships in England: costs, risks and policy reforms*.' *Empirical Research in Vocational Education and Training*, 9, 16.

Green, A. (1998) 'Core Skills, key skills and general culture: In search of a common foundation for vocational education'. *Evaluation and Research in Education*, 12 (1), 23- 43

Hasluck, C. and Hogarth, T. (2008) *The Net Costs of Training to Employers*. London: Department for Education and Skills

Hogarth, T., Adams, L., Gambin, L., Garnett, E. & Winterbotham, M. (2014). *Employer Routed Funding: Employer Responses to Funding Reform*. BIS RP 161. London: Department for Business, Innovation and Skills.

Hogarth. T., et al. (2012) *The Fifth Net Costs of Training to Employers Study*. London: Department for Business Innovation and Skills Research Report No. 76

Hogarth, T. et al. (1996) The Net Costs of Training to Employers. London: Stationery Office

House of Lords (HoL) (2007) *Apprenticeship: a key route to skills: Volume I - Report*, House of Lords Select Committee on Economic Affairs, London: TSO

Institute for Fiscal Studies (2019) *2019 annual report on education spending in England*. London: Institute for Fiscal Studies

Jenkins, B. (2018) 'Adult learning and qualifications in Britain', *Journal of Education and Work*, 30:4

Jessup, G. (1991). *Outcomes: NVQs and the Emerging Model of Education and Training*. London: Falmer Press

Keep, E. (2006) 'State control of the English education and training system—playing with the biggest train set in the world', *Journal of Vocational Education and Training*, 58:1, 47-64

Leitch Review (2006) *Prosperity for all in the global economy - world class skills*. London: HM Treasury

London Economics (2011) *Returns to Intermediate and Low Level Vocational Qualifications - adding to the existing evidence base*. London: Department for Business Innovation and Skills Research Paper No.53

Lucas, N. and Crowther. N. (2016) 'The logic of the Incorporation of further education colleges in England 1993–2015: towards an understanding of marketisation, change and instability' *Journal of Education Policy*, 31:5, 583-597

Marsden, D. (1995) A phoenix from the ashes of apprenticeship? Vocational training in Britain. *International Contributions to Labour Studies* (1995) *5,* 87-114

NARIC (2014) *Innovation in VET: United Kingdom Report for CEDEFOP Refernet*. Cheltenham: NARIC

OECD (2013) *PIAAC Country Note: England and Northern Ireland*. Paris: OECD Publishing

Payne, J. (2000) 'The unbearable lightness of skill: the changing meaning of skill in UK policy discourses and some implications for education and training' *Journal of Education Policy, 15(3) pp.*, 353 – 369

Panchamia, N. (2014) *Choice and Competition in Further Education*. London: Institute for Government.

QCA (2002) *Technical Certificates and the Modern Apprenticeships Reforms*, Qualifications and Curriculum Authority, London

Raggatt, P. and Williams, S. (1999). *Government, Markets and Vocational Qualifications: An Anatomy of Policy*. London: Falmer.

Richard, D. (2013) *Review of Apprenticeships*. London: Department for Education

Richardson W and Wiborg S (2010) *English technical and vocational education in historical and comparative perspective: Considerations for University Technical Colleges*, Baker Dearing Educational Trust. http://www.edge.co.uk/media/16991/considerations_for_university_technical_colleges.pdf

Senker, P. (1996). 'The development and implementation of National Vocational Qualifications: an engineering case study'. *New Technology, Work and Employment*, 11, 83–95.

Simmons, R. (2014) 'Further education outside the jurisdiction of local education authorities in post-war England' *Journal of Educational Administration and History*, 46:1, 57-73

Smith, S., Joslin, H., and Jameson, J. (2015). *Progression of Apprentices to Higher Education – 2nd Cohort Update*. London: Department for Business and Innovation Research Paper 240

Smithers, A. (1993). *All our Futures*. London: Channel 4 Television.

Snelson, S. and Deyes, K. (2016) *Understanding the Further Education Market in England* London: Department for Business Innovation and Skills Research Report No.296

Stasz, C. (2001) The Purposes and Validity of Vocational Qualifications. University of Cardiff: SKOPE Research Paper No. 105

Steedman, H. (2001) *Benchmarking Apprenticeship: UK and Continental Europe Compared*. London: Centre for Economic Performance

Thornley, C. (2017) *Tech Transitions: UTCs, studio schools, and technical and vocational education in England's schools*. London: Institute for Public Policy Research

Wolf, A. (2015) *Heading for the precipice: can further and higher education funding policies be sustained?* London: Policy Institute, King's College

Wolf, A. (2011) *Review of Vocational Education and Training*. London: Department for Education

Annex 1: Example of an apprenticeship standard

ELECTRICAL, ELECTRONIC PRODUCT SERVICE AND INSTALLATION ENGINEER

Reference Number: ST0150

Details of standard

Profile:

The engineer will install and service a range of domestic and/or commercial equipment from washing machines and micro-wave ovens in the kitchen, laundrette or restaurant to television and audio equipment in the living room. The influence of computers in controlling washing machines and providing television, have brought the installation and service requirements of these products together. In the near future, the 'smart home' will give wireless control of these products and link their requirements still closer.

To meet the needs of these 'smart' products, it is essential that the engineer is I.T. literate and has an understanding of all aspects of connectivity, with the ability to make and troubleshoot I.P. connections to routers, Bluetooth and Wi-Fi connections, in both domestic and commercial situations. The engineer must also be capable in the usage of "Apps". Technology is developing at a rapid rate and the range of products requiring the engineers skills will expand and require the engineer to maintain and update their knowledge and skills to meet these future needs. Many products will be integrated into the 'smart home' in the future and talk to each other through the "Internet of Things" giving the engineer a secure and profitable future.

As most of the work is carried out in the customer's home or business, the engineer has to be polite, well dressed and have appropriate customer facing skills. The work will be interesting and varied giving the opportunity to work with a wide range of people in differing environments. The engineer should have an enquiring mind and be able to follow a logical sequence of mechanical events or electrical tests. Following the Apprenticeship, the engineer will have additional training if they are working on gas appliances or working in specific commercial premises, they may also have the opportunity to take additional qualifications to further develop their skills and extend their prospects into management, training or development.

Generic job titles recognised across the industry: Installer / Service engineer / Service technician.

Behaviours	**What is required**
Demeanour	Giving a good impression of their employer and themselves by being polite and appropriately dressed
Friendly manner	Having a friendly greeting and manner to colleagues and customers
Showing respect	Showing respect for customer's property and possessions
Having concern	Having concern for the safety of colleagues, customers, their family and pets
Willingness to continue learning	Continuing 'personal professional development' in an industry that is changing rapidly
Honesty and integrity	Developing a trusting relationship with customers and colleagues
Knowledge	**What is required – the engineer will need to know and understand:**

Health and safety	Health & safety regulations and practices relevant to the role / Testing to EU/BS Product Standards (oven internal temperature & surface temperature tests) / PAT (Portable Appliance Testing)
Customer Care Procedures & Techniques	Customer care techniques including any particular company policies
Environmental Legislation	Environmental legislation i.e.WEEE (Waste Electrical & Electronic Equipment) Directive.
Transporting & Protecting Electrical & Electronic Products	Health and safety regulations and practices including waste carriage regulations and Electrostatic Discharge (ESD).
Installing, Testing & Handing Over Electrical & Electronic Products	Electrical services, utility services, signal requirements and network connections / Manufacturer's installation requirements e.g.: Ventilation, building strength, viewing distance and other site requirements
Diagnosing Faults and Repairing Electrical & Electronic Products	The operating principles and products operating sequence / The function of software in the operation of the product / Manufacturer's service manuals as appropriate / The importance of van stock maintenance.
Principles of Servicing Electrical & Electronic Products	The principles by which the product operates to help diagnose the faulty area and component or software
Skills	**What is required – the engineer will be able to:**
Health and safety	Observe health and safety regulations and procedures including: Apply electrical safety tests; avoid the hazard left by residual energy / Ensure all tools and equipment are safe and fit for purpose / Understand and apply EU/BS product standards / Apply Portable Appliance Testing
Customer Care Procedures & Techniques	Identify and use the appropriate mode of communication and be able to deal with and listen to customers / Comply with health and safety procedures to protect colleagues customers and their family / Resolve disputes and know who to report to in case of problems
Environmental legislation	Research and apply environmental legislation that is current and appropriate to installations and repairs / Advise customers on energy saving practices and choosing environmentally friendly purchases in the future
Transporting & Protecting Electrical & Electronic Products	Use the correct lifting techniques / Apply safe stowing procedures / Fit or remove safety bolts / Deliver product

Installing, Testing & Handing Over Electrical & Electronic Products	Agree suitable site, with customer, for installation / Carry out electrical safety tests / Install product to manufacturer's regulations / Make network connections including WiFi, Internet and blue tooth / Demonstrate product to customer's satisfaction ensuring customer can operate product / Complete paperwork including re-call registration if agreed with customer
Principles of Electrical & Electronic Products	Select, use and apply diagnostic tools and aids to locate fault / Ensure that there is not a primary reason for fault occurring / Ensure replacement components are correct and meet specification / Replace components or reinstate software using correct sequence, appropriate tools and techniques / Ensure no damage to other components / Ensure product is working properly, test it for electrical safety, EU/BS Standards and demonstrate it to the customer / Communicate technical findings and product / claim investigations, both verbally and in writing / Observe and adhere to the principals of Electrostatic Discharge (ESD) when handling spare parts and open products
Connectivity	Understand and apply the principles behind product connectivity / Understand and complete Network & Router set-up / Relate performance to speed and/or set-up of the customer network / Understand Apps and use them in product function & troubleshooting

On completion the Apprentice will be eligible to apply for an ECS (Electrotechnical Certification Scheme) card.

Entry requirements:

Individual employers will set any relevant entry requirements. Apprentices without Level 2 English and maths will need to achieve this level prior to taking their end-point assessment.

Duration:

Typically three years.

Level:

This is a Level 3 Apprenticeship.

Source: Institute for Apprenticeships and Technical Education

Annex 2: Example of T-level general content

Provided below is an excerpt of some of the core knowledge which has to be obtained in Engineering and Manufacturing - Manufacturing, Processing and Control pathway

- Engineering representations - An understanding of how to accurately produce, interpret, and amend engineering representations, drawings, and graphical information, how best to calculate and apply the rules and principles of dimensioning, tolerancing and sizing within engineering and manufacturing contexts.
- Essential mathematics for engineering and manufacturing
    - Mathematical theory and applications - A Level 3 knowledge and understanding of mathematics for engineering and manufacturing
    - Number systems used in engineering and manufacturing - Numbering systems and their applications e.g. decimal, binary, octal and hexadecimal.
- Essential science for engineering and manufacturing
    - Scientific methods - An understanding of scientific methods and effective approaches to scientific inquiry and research
    - Measurement - Techniques for making appropriate and accurate measurements along with use of a range of measurement instruments, technologies, tools and equipment, the principal behaviours and effects of chemical interactions in straightforward engineering and manufacturing contexts
    - Chemical composition and behaviours - Atomic and chemical structures of matter,
    - Physical forces and behaviours - An understanding of work, efficiency, energy, and power The principal behaviours and effects of physical forces (static and dynamic) in straightforward engineering and manufacturing contexts, etc.
- Materials and their properties - The properties, structures, and classification of materials, material processing techniques and their effects on materials, material quality, the condition of materials, how these are managed, and materials testing methods and techniques, etc.
- Mechanical principles - The fundamentals of motion and mechanics (static and dynamic) underpinning engineering and manufacturing systems, storage and transfer of forces and energy in operation,
- Electrical and electronic principles - An understanding of the basic principles of electricity and electronics, the fundamentals of electric circuit theory and its applications, the basic principles of analogue and digital electronics and their applications, how to apply knowledge of theories, laws and relevant representations to investigate and solve straightforward problems relating to voltage, current, and resistance in engineering context, etc.
- Mechatronics - An understanding of the key components of integrated mechanical and electrical systems; their design, operation, and applications