BEYOND THE MISSING MIDDLE: DEVELOPING HIGHER TECHNICAL EDUCATION

A report to the Gatsby Foundation

SIMON FIELD

November 2020

GATSBY

GATSBY IS A FOUNDATION SET UP
BY DAVID SAINSBURY
TO REALISE HIS CHARITABLE OBJECTIVES.
WE FOCUS OUR SUPPORT ON A LIMITED
NUMBER OF AREAS:

PLANT SCIENCE RESEARCH

NEUROSCIENCE RESEARCH

SCIENCE AND ENGINEERING EDUCATION

ECONOMIC DEVELOPMENT IN AFRICA

PUBLIC POLICY RESEARCH AND ADVICE

THE ARTS

WE ARE PROACTIVE IN DEVISING PROJECTS
TO ACHIEVE OUR AIMS. WE ARE ENTHUSIASTIC
ABOUT SUPPORTING INNOVATION. WE ARE
ANALYTICAL AS WE BELIEVE IT IS IMPORTANT
TO UNDERSTAND THE OPPORTUNITIES
AND PROBLEMS WE TACKLE. WE TAKE A
LONG-TERM VIEW AS WE DO NOT THINK MUCH
CAN BE ACHIEVED BY SHORT, ONE-OFF
PROJECTS. WE ARE ALWAYS EAGER TO FORM
PARTNERSHIPS WITH ORGANISATIONS WHO
SHARE OUR GOALS.

The Gatsby Charitable Foundation
The Peak, 5 Wilton Road, London SW1V 1AP
T +44 (0)20 7410 0330 F +44 (0)20 7410 0332
www.gatsby.org.uk

CONTENTS

ACKNOWLEDGEMENTS

The author is very grateful to the Gatsby Charitable Foundation for funding the work which led to this paper. The paper is indebted to Ginny Page and other colleagues at the Gatsby Charitable Foundation for many very helpful and constructive comments and contributions. The remaining faults are those of the author.

'THE MISSING MIDDLE' A 2018 REPORT TO THE GATSBY FOUNDATION ON HIGHER TECHNICAL EDUCATION.

This report was commissioned by the Gatsby Foundation as a means of informing the government's review of level 4 and 5 technical education in England. It looked at the development of higher technical education in England since the 1944 Education Act, and at how this compares with the experience of other countries. It was published in December 2018.

It concludes that a sequence of factors has resulted in a very small higher technical sector by international standards – the 'missing middle'. In the 1960s and 70s, the rapid expansion in university education following the Robbins report privileged full-time degree level study, while many professions increasingly expected degree-level qualifications from new entrants. More recent initiatives, such as the creation of Foundation Degrees, have sought to fill the gap, but have had limited success. The recent collapse in part-time student numbers has heavily affected higher technical enrolments.

The report describes other countries that have found a larger role for higher technical education, and the report argues that England can learn from international experience in developing its own higher technical system. Hence Gatsby commissioned a follow-up report to explore in more detail the ways in which other countries have built successful systems of higher technical education.

Source: Field, S. (2018b), The Missing Middle: Higher Technical Education in England. A report to the Gatsby Foundation. Gatsby Charitable Foundation, London. http://www.gatsby.org.uk/uploads/education/the-missing-middle-higher-technical-education-in-england.pdf

DISCLAIMER

The views and opinions expressed in this report are those of the author and do not necessarily state or reflect those of the Gatsby Charitable Foundation.

SUMMARY AND RECOMMENDATIONS

INTRODUCTION

Higher technical education is small in scale in England

There is a striking absence at the heart of the English education system, a missing middle. This refers to the lack of students enrolled in higher technical education (HTE) in programmes that sit just below the level of bachelor's degrees at levels 4 and 5 in the English qualifications system. But research shows that we need skills at this level; not all occupations require the three years of degree study which have become the norm in English post-secondary education; many successful advanced economies make extensive use of HTE. So England needs a stronger, larger HTE system. This report looks at what we can learn from other countries to make this happen.

New government proposals address this challenge

In response, government proposals were announced in July 2020 (DfE, 2020), following a consultation (DfE, 2019). A new system for approving higher technical qualifications will be introduced from September 2022, with the objective of supporting high quality qualifications that are seen as valuable by employers. Approved HTE qualifications will be aligned with occupational standards and therefore with other technical qualifications in 15 technical routes, simplifying and clarifying career pathways. There will be local flexibility in relation to labour market needs. A single 'higher technical qualification' brand will be established. Employer support will be a clear precondition for HTE qualifications to be approved. These proposals are backed by other initiatives to support the provider infrastructure, including the creation of the Institutes for Technical Education. In all these key respects, higher technical education in England has taken a step forward, in keeping with international experience of the strongest higher technical education systems.

This is an opportunity to go further

This context offers the opportunity, building on the government's proposals, to go further. Drawing on the experience and evidence of the strongest HTE systems internationally, and the best domestic examples, this report will argue for further development in the higher technical system – allowing for recognition of prior learning, drawing on workbased learning, and built from modular components. The framework would offer alternative routes, tailored to the needs of different students, to occupational competence. Not only would this approach be well-adapted to the needs of adults who are already the prime candidates for HTE qualifications, it would also compete very effectively with most higher education degrees, which rarely offer these flexibilities.

RECOGNITION OF PRIOR LEARNING

Formal recognition of informally acquired skills has many benefits

Many adults entering HTE programmes are already equipped with valuable knowledge and skills, often as a result of work experience. This is a huge, but too-often ignored, potential resource, and is particularly important in England where many HTE students are adults. Recognition of prior learning (RPL) increases the visibility of skills, and so makes the labour market work better; it allows those with limited formal education or qualifications to have their skills recognised, and encourages individuals to develop their knowledge and skills during working life. While many countries have sought to develop special procedures for assessing and granting credit for prior learning, these procedures can be cumbersome. An alternative approach, used extensively in different countries, is to grant adults with relevant work experience direct access to the final examinations for a qualification without going through a required programme of study. This allows students themselves to prepare for the examination in a manner tailored to their existing knowledge and skills.

RECOMMENDATION 1.

Recognise Prior Learning

There are strong grounds for the higher technical education system in England to capitalise on existing skills by offering a means whereby adults can have their prior work experience recognised. International evidence suggests that measures to allow experienced adults direct access to a final examination or assessment may offer a successful model.

WORKBASED LEARNING

A key element in technical education is practical experience, particularly in a real-world work environment. Work placements, as a formal part of programmes, are often a required element in the strongest higher technical systems — for example, Switzerland, Singapore, France and Sweden among many others. In England, new government proposals encourage work placements in HTE but do not make them mandatory (DfE, 2020). An expectation of work experience needs adaptation to reflect the different circumstances of those students with relevant work experience, who may already be working in the field. For these adults, work experience may, partially or fully, substitute for the requirements of a work placement.

RECOMMENDATION 2.

Ensure HTE students benefit from workbased learning

Much evidence suggests that workbased learning is a key means of acquiring occupational skills. In many countries, this principle is reflected in the requirement for a substantial work placement in HTE programmes for full-time students. This same principle may be embodied in HTE programmes, adjusted to reflect the different circumstances of full- and part-time students with and without relevant work experience. In England, the government's 2020 proposals strongly encourage, but do not mandate, work placements. Thus:

- *Students without relevant previous or current work experience, whether studying full or part-time, should normally be expected to undertake a substantial placement with a relevant employer, involving workbased learning.*
- *Students with relevant previous or current work experience should be able to count this towards the workbased learning requirement of any qualification, as set out in recommendation 1 on recognition of prior learning.*

MODULARISATION

Modularisation – breaking down programmes and qualifications into sub-components – can allow for more flexible learning and teaching. It permits students to learn at their own pace, and sometimes grants partial certification to those who only complete part of a programme. Identifying separate modules can facilitate credit transfer, and make it easier to update individual modules in response to technological change. It allows core requirements to be distinguished from optional specialities. As a result, modularisation is increasingly common in many European programmes. It allows identified modules of a qualification to be obtained through recognition of prior learning, or through a work placement.

RECOMMENDATION 3.

Take advantage of modularisation

Modularisation has extensive benefits, particularly for adults, but it also involves costs for the creators and providers of programmes and qualifications. Options for more systematic modularisation should be explored and pursued by those developing and delivering HTE qualifications, and encouraged by regulators.

USING END POINT ASSESSMENTS TO ANCHOR HIGHER TECHNICAL QUALIFICATIONS

Higher technical qualifications will need to be articulated with higher technical apprenticeships on the basis of common apprenticeship-occupational standards, and a common set of knowledge, skills and behaviours which form those standards and are linked to occupational competence. To demonstrate their adherence to apprenticeship-occupational standards, higher technical qualifications, when proposed to the Institute for Apprenticeship and Technical Education for approval, might usefully take advantage of the existing end point assessments already available in the apprenticeship-occupational standard. This would, in many respects, follow the successful model of the many countries that allow experienced workers direct access to the final assessments of apprenticeship programmes, bypassing the apprenticeship programmes.

RECOMMENDATION 4.

Extend the use of end point assessments to non-apprenticeship programmes

New approved higher technical qualifications will need to demonstrate their alignment with agreed occupational and apprenticeship standards. A simple way of achieving this alignment would be to apply the end point assessments developed for apprenticeship (with suitable modification) to other higher technical routes. This would ensure adherence of multiple programmes and qualifications to a common occupational standard, and allow for different higher technical qualifications, and recognition of prior learning, to be tailored to the needs of adults and others with different needs. This same model (applied to apprenticeship generally) might also have immediate application to those who have had their learning and working disrupted by the COVID-19 crisis.

ENGAGING EMPLOYERS IN QUALITY WORK PLACEMENTS

The successful experience of many countries suggests that it is both feasible and desirable to expect quality work placements for full-time young students as part of many HTE programmes. Realising this outcome in England from the current low baseline will be demanding. It means building the principle of partnership with employers deeply into the culture of HTE, so that employers see the programmes and qualifications as 'their' programmes, rather than something created by training providers, to which they are being asked to contribute.

RECOMMENDATION 5.

Ensure that HTE work placements are good quality, and that employers and providers receive the support and encouragement they need to offer placements.

Good quality work placements in higher technical education should involve clear learning objectives and be sufficiently long to provide substantial learning opportunities. The workplaces should offer a quality learning environment, where trainees have the opportunity to acquire a range of occupational skills under the guidance of skilled trainer-practitioners. Placements should be effectively integrated into the wider HTE programme, and HTE training providers should take the lead in establishing the partnerships with employers that facilitate the offer of work placements to students.

Support should be offered to employers in developing their capacity to offer work placements. To this end, effective programmes to train employer-based trainers would be very useful. Such training would have many spin-off benefits for employers, since those so-trained could also train other staff, outside the framework of the HTE programme, and play a role in apprenticeship training (at all levels), and help to professionalise the employer role in technical training.

EMPLOYER ENGAGEMENT IN PROGRAMMES AND QUALIFICATIONS

Employer support for HTE programmes is a precondition for their success. Across countries, employers are fully involved in many of the strongest HTE programmes and qualifications, sometimes because they lead the creation of the qualification, and sometimes because employers offer substantive work placements. In England, this type of very full engagement of employers is less common, although employers are now directly involved in the creation of apprenticeship standards. International experience suggests some ways in which employer engagement can be encouraged in England.

RECOMMENDATION 6.

Identify criteria to demonstrate employer engagement in HTE programmes and qualifications

The government has proposed, rightly, that employer engagement in, and support for, higher technical qualifications should be demonstrated if those programmes are to be approved. But employer engagement is hard to measure. In support of the government's proposal, the following criteria, typically in combination, might be used to grade the level of employer engagement:

- *where programmes and qualifications are employer-led, specifically in higher technical apprenticeships, and in HTE qualifications closely linked to an occupational standard developed by employers as in the government's new proposals; or by involving individual employers as partners in the establishment of local HTE programmes;*
- *following international experience, and existing proposals in England, through the inclusion, within the qualification, of an element which is locally negotiated with employers. This element would support the engagement of local employers and the offer of work placements;*
- *through a requirement in the qualification or programme for substantive work placements for full-time students in HTE programmes or relevant work experience (see recommendation 2).*

MANAGING FRAGMENTATION IN QUALIFICATIONS AND PROVIDERS

Relative to other countries, the English landscape of HTE providers and qualifications is marked by diversity. Many different types of provider are involved in delivering HTE, there are multiple qualification types, ranging from higher national diplomas (HNDs) to apprenticeships, and more individual qualifications than most comparable countries, despite the fact that the HTE sector is a relatively small part of the English education and training system. This diversity may best be described as fragmentation, as students and employers find it confusing, and it has been an obstacle to the sector relative to a much more homogeneous competing sector of three-year degrees. Experience from other countries suggests some ways in which diversity in provision might be managed.

RECOMMENDATION 7.

Limit and manage fragmentation in qualifications and providers

- *Nomenclature could be simplified and the government's plan to name all qualifications at this level as 'higher technical qualifications' is to be welcomed.*
- *Duplication should be addressed in decisions taken by the Department for Education (DfE) and the Institute for Apprenticeships and Technical Education (IfATE) to approve HTE qualifications. It will not, for example, assist students for them to have a choice between an HND, a Diploma in Higher Education, a Foundation Degree and a level 5 apprenticeship all with the same occupational target, without any real guidance about the distinctions between these options or their relative value.*
- *Effective targeted funding, and associated regulation, can make a difference. In Sweden, higher vocational education has flourished despite multiple types of training provider because it is supported by a dedicated funding stream.*
- *Effective career information, as recommended in UCAS (2017) can help to guide students towards good quality programmes with strong career prospects. It can, in particular, draw on recent findings regarding the types of HTE with the best returns (see Box 1.1).*

BASIC SKILLS

Strong basic skills – literacy, numeracy and digital skills – are very important for HTE graduates, as they improve immediate labour market outcomes and provide foundation skills that are vital for lifelong learning. But basic skills are a particular challenge for England, as one in three teenagers and one in five HTE graduates have poor basic skills – much higher proportions than in the best-performing countries. While HTE can only address a small part of this large problem, this background underlines the importance of addressing basic skills within HTE programmes.

RECOMMENDATION 8.

Reinforce Literacy, Numeracy and Digital Skills in HTE qualifications

Basic skills of numeracy, literacy, and digital skills are key foundation skills that support further learning. Quality HTE programmes and qualifications should include measures to ensure that those qualified possess an adequate minimum of basic skills, and this may go beyond what the employers directly concerned may demand. Often, basic skills may be taught in the context of technical instruction, through carefully designed programmes and well-prepared instructors.

CHAPTER 1 INTRODUCTION: ADDRESSING THE CHALLENGE OF THE MISSING MIDDLE

1.1 NEW POLICIES FOR A LONGSTANDING CHALLENGE: THE ROLE OF THIS REPORT

Higher technical education is small in scale in England

At the heart of the English education system there is a *missing middle*, in the zone of higher technical education[1] (HTE) just below the level of bachelor's degrees, at level 4 and 5 in the English qualifications system. Relative to other levels of qualification, past history or other countries, surprisingly few students study HTE (Field, 2018b). Yet we need skills at these levels. Recent studies by Conlon and Halterbeck (2017) and Espinoza and Speckesser (2019) show that especially for men and for those pursuing STEM subjects, higher technical qualifications yield good returns – often better than for three-year degrees (see Box 1.1). Self-evidently, not all occupations require the three years of study which have become the norm in English post-secondary education. Many highly successful advanced economies, like Singapore, make extensive use of higher technical education (see Box 2.5).

New government proposals address this challenge

In response to this challenge, government proposals were announced in July 2020 (DfE, 2020), following a consultation (DfE, 2019). A new system for approving higher technical qualifications will be introduced from September 2022, with the objective of supporting high-quality qualifications that are seen as valuable by employers. Starting with digital qualifications, the aim is to roll out the new approval process to all technical qualifications at levels 4 and 5. Providers will also need to be quality assured. This new system will be led by the Institute for Apprenticeships and Technical Education (IfATE), and backed by career guidance. On the critical issue of funding, separate proposals were advanced in the Augar Review (Independent Panel, 2019), and these await a government response.

Box 1.1. Labour market returns from higher technical education in England: new evidence

Two recent studies cast extensive light on the returns from HTE. Conlon and Halterbeck (2017) used labour force survey information to explore returns, and report that the returns to HTE in STEM subjects are substantial – with net lifetime benefits of as much as £100,000 for men with STEM-based HNCs and HNDs.

A new study by Espinoza and Speckesser (2019) used a very full longitudinal data-base to examine those who finished compulsory education at age 16 in 2003 and their earnings by age 30. At age 30, only 2% of the cohort had HTE qualifications as their highest qualification. These graduates had diverse education backgrounds, from Entry Level to level 3, unlike degree graduates, who had mostly taken A-levels. The results for men are particularly striking. Taking account of prior attainment, earnings of male degree graduates in non-Russell group universities were similar to those of HTE male graduates (with higher earnings, unsurprisingly, for male graduates from Russell group

[1] Regulated Qualifications Framework (RQF) level 4 qualifications are reported internationally as International Standard Classification of Education (ISCED) level 5 rather than level 4, but this is anomalous as one criterion of ISCED level 5 is that the programmes should be two years in length.

universities). This is important because, in practice, a student with mid-level school results may face a choice between HTE and a non-Russell group degree programme. Remarkably, in STEM subjects, the earnings of men who had graduated from shorter, cheaper HTE programmes were actually higher than for their counterparts who had pursued longer, more expensive degree programmes, after taking account of background factors, including prior attainment. Conversely for women, earnings were higher for graduates of degree programmes regardless of the type of university.

Source: Conlon and Halterbeck (2017); Espinoza and Speckesser (2019).

These government proposals are a clear step forward

These proposals will align approved HTE qualifications with occupational standards and therefore with other technical qualifications in fifteen technical routes, simplifying and clarifying career pathways. There will be local flexibility in relation to labour market needs. A single 'higher technical education' brand has been established. Employer support will be a precondition for HTE qualifications to be approved. These proposals are backed by other initiatives to support the provider infrastructure, including the creation of Institutes of Technology. In all these respects, higher technical education in England has taken a large step forward, in keeping with international experience of the strongest higher technical education systems.

This is an opportunity to go further

This context offers the opportunity, building on the government's proposals, to go further. Drawing on the experience and evidence of the strongest HTE systems internationally, and the best domestic examples, this report will argue for further development in the higher technical system – allowing for recognition of prior learning, drawing on workbased learning, and built from modular components. The framework would offer alternative routes, tailored to the needs of different students, to occupational competence. Not only would this approach be well-adapted to the needs of adults who are already the prime candidates for HTE qualifications, it would also compete very effectively with most higher education degrees, which rarely offer these flexibilities.

This report will underline the role of adults in HTE

Well before the COVID-19 crisis, the world of work was changing fast. Automation has been 'hollowing out' labour markets, as routine tasks are increasingly undertaken by machines; globalisation and outsourcing is disrupting some industrial sectors (Berger and Frey, 2016). The COVID-19 crisis has rapidly accelerated some existing trends, such as a shift to online provision of goods and services. Responding to climate change will have a massive impact on many sectors. Following Brexit, it may become harder to fill skills gaps with migrant workers. One safe prediction is that adults will increasingly need to upskill and reskill in the course of their working lives (OECD, 2019), so technical education will need to give increased attention to the needs of adults.

HTE in England is already serving many adults and part-timers

In 2016/17 the median age of learners undertaking level 4 and 5 qualifications was 30 (Zaidi, Beadle and Hannah, 2019), and in 2015/16, just under half (48%) of all HTE learners in England (level 4 and 5 learners on technical routes) were studying part time (Boniface, Whalley and Goodwin, 2018). The implication is that the HTE

system must be able to address the needs of adults and part-timers, in particular through the recognition of their work experience, as well as defining expectations on young and full-time students. This report therefore gives extensive attention to the need to sustain and reinforce an 'adult-friendly' HTE system. In the immediate future, efforts will be needed to support young school-leavers, given the immediate disruption to their working and learning that will have already occurred through the COVID-19 lockdown, and the medium-term risk of high youth unemployment. But this should not eclipse the longer term need to give attention to adults.

Some key features of English HTE are distinctive, and guide the focus of this report

This report will focus on those areas in the higher technical system where there is most to learn from other countries. Such learning needs to take account of some distinctive features of English HTE. Thus:

- Unlike three-year degree programmes, a large proportion of HTE students in England are adults, and many study part-time. (This contrasts, for example, with France and Korea, where most HTE students are young full-timers, but is more similar to the US). The needs of adults are addressed throughout this report, and especially in Chapter 2;
- HTE programmes in other countries often include a substantial and mandatory work placement, and this is less often the case in England. Given evidence of the value of such placements, their potential for England is examined in section 2.3 of Chapter 2, and Chapter 3;
- Relative to other countries, HTE provision in England is highly fragmented, in respect of providers, programmes and qualifications. This issue is examined in Chapter 4, particularly in 4.3.
- Some other points are relevant. England has relatively weak measures in place to support recognition of prior learning compared with at least some other countries – this issue is examined in section 2.2. Section 2.4 explores how, although modularisation of programmes is a live issue in England, as it is in other countries, it has rarely been systematically pursued. Section 4.3 looks at how England faces significant challenges in basic skills, both generally and among HTE students.

The evidence base will be published material from different countries relevant to England

The study draws on published material from different countries with good quality HTE systems, programmes and qualifications, including material from the International Standard Classification of Education (ISCED level 6). 'Good quality' in programmes and qualifications reflects characteristics such as: good labour market outcomes, established high status, employer recognition and engagement, innovation, and strong quality control. Country coverage (and therefore coverage of programmes and qualifications) is determined primarily by these criteria for good quality systems and qualifications. This includes France, Ireland, Scotland, Singapore, Switzerland, Germany, Austria, Denmark, Singapore, Sweden. For example Singapore is an example of a country where HTE programmes play a large and successful role in the skills system (see Box 2.5). The study also includes other countries with more mixed experience, including Canada, US, Australia, the Netherlands and Belgium-Flanders. Individual strong programmes from other countries are mentioned where relevant.

CHAPTER 2 ALTERNATIVE ROUTES IN HIGHER TECHNICAL EDUCATION

2.1 INTRODUCTION

Most existing higher technical qualifications take a conventional approach

Setting aside the special case of apprenticeships, most (although not all) existing HTE qualifications take a common form. The qualification defines target knowledge and skills, and is associated with a standard programme of study, over a fixed period of time, leading to a standard assessment. Sometimes, although not that often, a period of work placement is involved. This is the same model as a bachelor's level degree, so HTE qualifications typically compete with degree qualifications by offering a smaller version of the same thing. While some HTE qualifications have enjoyed modest success, the competition has resulted in a clear win for degree qualifications, which have grown massively over the last half century, while HTE has played a dwindling role in the skills system (Field, 2018b).

This chapter proposes innovation in the routes to qualification

Against that background, this chapter argues that more flexible routes to HTE qualifications are needed. Such flexibility would address the needs of the adults who form such a large part of the HTE student population, while continuing to address the requirements of young school-leavers. Key elements would include recognition of prior learning (including work experience), selective use of workbased learning as an integrated element of programmes of study, modularisation to promote flexibility, and articulation between provider-based higher technical education and the fast-expanding world of higher technical apprenticeships. All of these elements have intrinsic justifications, and draw on the best international experience. At the same time they serve to differentiate such higher technical qualifications from higher education degrees, offering a different approach and serving different learners, particularly adults..

This approach to HTE draws on an appreciation of patterns of working and learning

Usually, the main way in which people learn how to do a job is through practical experience – formal qualifications are often just part of the supporting architecture. This is illustrated by one survey in England: when recruiting, two-thirds of employers said that relevant work experience was critical or significant; only half said the same thing about academic qualifications (UKCES, 2014). For HTE students, work experience takes several forms. For some it is obtained through formal work placements which are part of their HTE programmes. For adults it emerges from a history of work experience, or from the job which they continue to pursue while studying. All these forms of work experience provide opportunities for workbased learning, of both a formal and informal variety – they are represented diagrammatically in Figure 2.1.

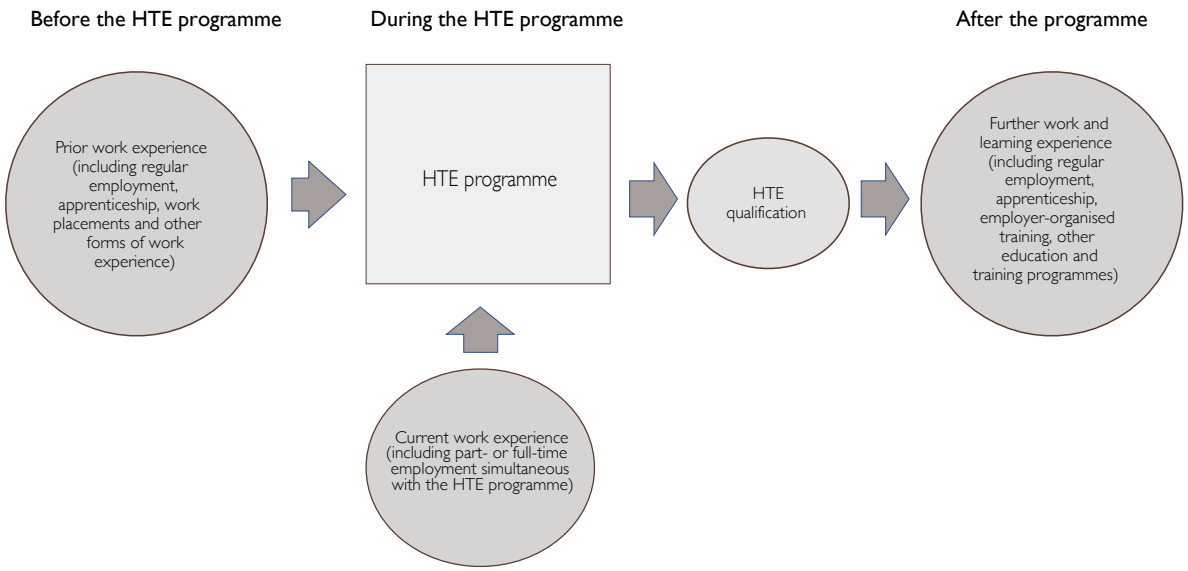


Figure 2.1. Work experience before, during and after an HTE programme

Recognition of prior learning and work placements will be examined

This chapter looks at two key issues associated with work experience. First, HTE programmes should build on and make use of the existing skills of their adult students, recognising that many of them will have extensive work experience. Section 2.2 of this chapter looks at how this might be achieved. Second, given the importance of practical work experience, those who graduate from HTE programmes should have had the opportunity to benefit from such experience. Section 2.3 looks at how this principle can be applied to different groups of HTE students, recognising that some students can benefit from organised work placements, while others may already have the required work experience or be in jobs that offer that possibility. Section 2.4 then looks at modularisation in higher technical qualifications, and how it can be used in support of both recognition of prior learning and workbased learning. Section 2.5 draws the threads together, arguing that a modularised qualification, involving recognition of prior learning (RPL) and taking advantage of workbased learning, can be closely articulated with higher technical apprenticeships.

2.2 RECOGNISING THE PRIOR LEARNING OF ADULT STUDENTS

Many adults enter HTE programmes with existing knowledge and skills, often as a result of work experience. This is a huge, but too-often ignored, potential resource, and is particularly important in England where many HTE students are adults. An effective HTE system should be able to build on this resource. This section looks at how HTE programmes and qualifications in different countries do so, and how this can inform the development of HTE qualifications and programmes in England.

INTERNATIONAL EXPERIENCE: TWO APPROACHES TO THE RECOGNITION OF PRIOR LEARNING (RPL)

Recognition of informally acquired skills has many benefits

When uncertified knowledge and skills are recognised, the benefits are both extensive and diverse:

- There is a **direct benefit**, because increasing the visibility of skills makes the labour market work better, allowing individuals to obtain work that uses and rewards their skills, and helping employers to recruit more efficiently and allocate workers to more appropriate job roles. Training that duplicates existing knowledge and skills can be avoided in favour of training which efficiently fills the gaps.
- The **indirect benefit** arises when the potential of recognition encourages individuals to develop their knowledge and skills during working life. It encourages further upskilling, because an upskilling programme may package further training alongside the recognition of some skills obtained through work experience.
- RPL often has **equity benefits**, as it allows those who may have limited formal education or qualifications, or migrants with experience and qualifications not recognised in the country of settlement, to have their skills recognised, granting access to a wider range of job opportunities. In Sweden, which has experienced a large influx of recent migrants, the RPL system has been reconfigured so as to address this particular challenge (Sandberg, 2016).

Many countries have sought to develop procedures for recognising prior learning

RPL procedures are usually based in education institutions (CEDEFOP and European Commission, 2017) and often supported by national frameworks. Sometimes this becomes a standard element in HTE programmes (for example see Box 2.1). But outside national frameworks, RPL is widely used in the United States (CAEL, 2010), in Australia (Wheelahan et al., 2003), and in many other countries. When recognition occurs, it may yield one or more of three types of outcome:

- entry to a desired education or training programme (bypassing normal entry qualification requirements);
- exemption from individual courses or modules in programmes;
- full qualifications realised entirely through recognition of existing skills and knowledge.

Box 2.1. The associate degree in the Netherlands: different student groups and different modes of study

The Dutch associate degree (AD) programme is a two-year programme at a university of applied science at ISCED level 5. It was designed first, to improve the transition for young people between the higher-level vocational education and training (VET) programmes at level 4 and four-year degree programmes; second, to help working adults reskill and upskill; and third, to meet labour market needs for higher-level technical skills. Initially, ADs had to be part of a bachelor programme, so that AD graduates could articulate seamlessly into the associated bachelor programme, but since January 2018 the AD has become a self-standing qualification. Enrolments grew from 4700 in 2012 to 7100 in 2016 – still a very small fraction of the roughly half a million students following four-year bachelor's programmes in 2016.

The associate degree programmes can be full-time, part-time or 'dual' full-time programmes combining learning and working, in which about half the students are enrolled. About two-thirds of the ADs awarded each year are to full-time students. All providers have course exemption systems in place to let students enrol in tailor-made programmes based on prior experience, learning and certifications.

Source: Broek, (2019).

RPL procedures sometimes have limited take-up

Several European countries including Estonia and Finland (see Box 2.9) make the offer of recognition of prior learning a requirement for HTE providers. But countries have struggled to develop RPL as a substantial part of the skills system (CEDEFOP and European Commission, 2017). In France for example, VAE (*validation des acquis de l'expérience*) grants a right to those with informally acquired knowledge and skills to obtain a formal qualification equivalent to that obtained through formal education and training. The costs are shared between regional councils, employment services, the state, employers and the candidates themselves. The candidate must show evidence of required competencies by way of a written description, and candidates usually get help from training providers or professional associations to develop their portfolio. But the average process lasts 16 months and only 2.4% of professional diplomas awarded in 2017 came through the VAE process (Ministere de l'Education Nationale et de la Jeunesse: France, 2018; Inspection General des Affaires Sociales: France, 2016; CEDEFOP, 2016). The obstacles to RPL procedures include:

- **Weak support from employers**, who do not necessarily wish the skills of their employees to be more visible to competing employers, who might poach their services;
- **Resistance from HTE providers,** as it is easier to deliver a standard training programme than to tailor it to individual needs, and to have in place the assessment arrangements to identify and recognise existing skills;
- **Demanding assessment processes**. Although guidelines are available (CEDEFOP, 2015a), the assessment of occupational skills is a demanding and resource-intensive task, both for the individual seeking to demonstrate their skillset, and for the body undertaking the assessment.

Box 2.2. Professional examinations in Switzerland

In Switzerland, professional examinations provide skilled workers holding an initial technical qualification with the opportunity to develop their skills, knowledge and specialisation. The examination for the Federal Professional Education and Training (PET) Diploma provides skilled workers who have an initial VET qualification with the opportunity of initial in-depth study and specialisation. This Diploma is usually a requirement for admission to the higher level 'Advanced' Federal PET Diploma examination which qualifies holders as sectoral experts, for executive positions and to manage a business. There are currently about 400 different national professional examinations and around 16,000 Federal PET Diplomas are issued each year.

Examinations, and the associated qualification, are created on the initiative of a professional organisation or employer organisation, which approaches government through the Federal Office for Professional Education and Technology (OPET) with a proposal for an examination. OPET will only approve the examination/qualification if it commands the support of most of the relevant professional/industrial sector, and does not overlap or compete with existing examinations/qualifications. The examinations themselves are conducted by the professional or employer organisation, but under the supervision of OPET, which also issues the corresponding diploma. Successfully passing the exam leads to either a Federal PET Diploma or an Advanced Federal PET Diploma.

The distinctive feature of professional examinations, relative to conventional education programmes, is the lack of mandatory requirements on preparation for those examinations. The examination regulations specify the rules for admission, examination method, examination content and assessment. Admission requirements are usually an (upper secondary) VET Diploma in a relevant field, and a specified amount of professional experience. It is left to the candidates to decide how they prepare for the examination. Preparation usually takes place alongside usual working activities, typically through part-time preparatory courses, offered by public and private providers in the evenings or at weekends. From 1 January 2018, the federal government has offered financial support for these preparatory courses.

Source: Fazekas and Field (2013a), Federal Department for Economic Affairs, Education and Research (2017).

Professional examinations offer an alternative 'direct access' route to recognition

In the face of obstacles to RPL procedures, professional examination systems offer an alternative means of recognising prior learning. Such examinations are not usually described as recognition of prior learning, as they involve no special recognition arrangements, but in practice they do so, as students can prepare for the examinations by taking account of their existing skills while preparing for the parts of the examination which are less familiar. Such examinations are common several countries, including Germany, Austria and Switzerland (see Box 2.2) and are discussed in Field (2018b). In this 'direct access' model the default arrangement is to pursue no standard training programme, but in practice some preparatory courses, tailored to gaps in an individual skillset, are usually pursued. This means that the cost and complexity, both for HTE provider and individual, of special RPL procedures are avoided. Since such 'direct access' systems require no specific programme of study, they are best adapted for adult students already working in the relevant field, where professional knowledge allows informed choices about the preparatory courses needed to fill in the gaps in knowledge and skills.

RECOGNISING THE PRIOR LEARNING OF ADULT STUDENTS : IMPLICATIONS FOR ENGLAND

Given the large number of adults making use of the English HTE system, and the need to make use of their existing skills, there are compelling arguments for including some form of RPL in the HTE system. Looked at across countries, while RPL procedures have many attractions, their development has faced multiple obstacles. This experience also provides an argument for looking hard at the alternative route to recognition of prior learning, through professional examinations offering a direct access route to a qualification without any fixed programme of learning.

RECOMMENDATION 1.

Recognise Prior Learning

There are strong grounds for the higher technical education system in England to capitalise on existing skills by offering a means whereby adults can have their prior work experience recognised. International evidence suggests that measures to allow experienced adults direct access to a final examination or assessment may offer a successful model.

2.3 WORK EXPERIENCE AND WORK PLACEMENTS IN HIGHER TECHNICAL EDUCATION

This section looks at how practical working experience and workbased learning play a role, together with higher technical programmes, in the development of occupational skills. In many countries formal work placements, often of some months, are a common, and often required, feature of HTE programmes. There are different student groups in HTE, ranging from young full-time students with no work experience to part-time adult students with extensive and continuing work experience. This section argues that a common principle, reflecting the value of workbased learning and work experience, can underpin the treatment of these different groups, and could be implemented flexibly in relation to their different needs.

WHY WORK PLACEMENTS ARE IMPORTANT

Theory suggests an important role for work placements

OECD (2014), Sweet (2014), and the European Commission (2013) among others, have argued that formal work placements, as part of technical programmes, are an effective way, and indeed sometimes the only way, to acquire hard technical skills under the guidance of those with relevant experience. In addition, they are a powerful means of acquiring the many soft and employability skills such as teamwork, communication skills and handling conflict that are much harder to learn in a classroom or workshop (see Box 2.3). Work placements allow students to gain first-hand experience of potential jobs, workplaces and careers, and gain the experience with a specific employer that could lead to a job offer. Employers use placements not only to gain from the productive contributions of trainees, but also to test them out as potential recruits. Research in Sweden suggests that staff involved in training students during work placements benefit from increased motivation (Karlson and Persson, 2014). From a societal point of view, work placements may also have the advantage of improving the balance of skills supply and labour market demand, as signalled by the employer offer of work placements. When qualifications and programmes make work placements a requirement, HTE providers are obliged to reach out to employers, cementing local employer-provider partnerships, linking the qualification and programme more firmly to employer needs.

Box 2.3. Automation, interpersonal skills and workbased learning

Much recent research has demonstrated how automation is changing the shape of the labour market. In the UK and other countries, many medium-skilled routine jobs have been, and are being eliminated in a 'hollowing out' of the labour market, and a wide range of jobs are likely to be transformed in the future, (OECD, 2019; Berger and Frey, 2016).

As the more routine tasks in jobs are automated, job roles are transformed and the human skills that are harder to automate become relatively more important. Among these hard-to-automate skills, the interpersonal social and emotional skills are prominent. A recent UK study looked at changes in the use of three types of skill – physical, analytical, and interpersonal – over the period 2006-2019. It showed that in all nine occupational sectors the importance of interpersonal skills, relative to physical and analytical skills, increased over the period, even in elementary occupations (Adecco, 2019).

Interpersonal skills are hard to teach in a traditional classroom setting, because so much work is individual – although project-based teaching may have some impact. It has been argued that workbased learning is a much more effective learning environment for such skills, as so much activity is social (Skills Development Scotland and Centre for Workbased Learning, 2018).

Empirical evidence is also positive

Empirical evidence in support of HTE work placements is limited, although there is good research on the costs and benefits of apprenticeship to employers (see section 2.4). There is evidence that work placements in the form of what are commonly called 'internships', as part of post-secondary education and training programmes, have positive effects on labour market outcomes. For example, in the United States, 63 per cent of college graduates who completed a paid internship/work placement received a job offer, compared with 35 per cent of those who never entered an internship/work placement (Carnevale et al., 2015). According to one survey of employers in the US, the completion of an internship was the single most important factor in recruitment decisions, weightier in the eyes of employers than academic qualifications, and slightly more important than relevant work experience (Chronicle of Higher Education, 2012). Similarly, in Europe, O'Higgins and Pinedo (2018) report that paid internships yield better labour market outcomes than unpaid internships.

Box 2.4. Work placements in higher technical programmes in France

In France, over the last 30 years, HTE programmes have given increasing emphasis to work placements, notably through the Diplôme Universitaire de Technologie (DUT) and Brevet de Technicien Supérieur (BTS) programmes, both at ISCED level 5.

Around 120,000 students study for the two-year 'DUT'. These programmes were launched in 1966 to provide mid-level skills, and are delivered by Instituts Universitaires de Technologie (IUTs), which are often closely linked to a university; and a DUT usually offers the opportunity to continue into a university programme. The programmes for each DUT specialty are worked out by national pedagogical commissions including employers, practising professionals, teaching faculties and officials from the Ministry of Higher Education and Research. DUT programmes have to include a work placement. Around 40% of first-year students obtain a work placement and 90% of those in the second year. Placements usually last less than two months in the first year, and in the second year three-quarters of the placements last two months or more. Some students may also obtain their qualification through an alternance arrangement which is more like an apprenticeship, with students alternating periods of study with periods in the workplace. For students who already have three years of relevant work experience, a DUT qualification can be acquired fully or partially through recognition of prior learning.

More than 240,000 students are enrolled in BTS programmes, usually pursued in a lycée professionnelle over a two-year period. The content of the training in each field is developed by an advisory committee including employers, employees and government. The curriculum is built on a common base of vocational, technological, and general skills deemed essential for successful performance in a given occupation. The institutions that offer BTS programmes organise work placements of 14 to 18 weeks each year usually with employers that may subsequently recruit graduates.

Source Field, 2018b, European Commission, 2013; CEDEFOP, 2014, 2019.

Other countries commonly insist on work placements

Work placements are a requirement in many countries with a strong HTE sector: in the BTS and DUT programmes in France (see Box 2.4), polytechnic programmes in Singapore (see Box 2.5), HTE programmes in Estonia, academy programmes in Denmark, higher vocational education in Sweden, professional college programmes in Switzerland (see Box 2.2), polytechnic programmes in Korea, and associate degrees in Belgium-Flanders (OECD, 2014; CEDEFOP, 2017). In English-speaking countries, including the United States, Canada and Australia, work placements are less often a formal requirement. The pattern is also less clear when HTE is delivered through higher education institutions, where the culture of employer partnerships is less deeply embedded. CEDEFOP (2019) reports that in higher levels of technical education (at ISCED levels 5-6), there is little sign, in Europe, of a systematic approach to work placements.

Box 2.5. Technical education in Singapore

In Singapore's advanced economy, nearly two-thirds of young people enter technical programmes with extensive elements of workbased learning, following completion of a four- or five-year programme leading to examinations at N-level, or often after a fifth year at O-level (GCE –similar to UK GCSEs) at age 16 or 17. 40% enrol in one of five polytechnics, while 20% enrol in the Institute of Technical Education (ITE). Lower secondary education is tracked, so that those who enter ITE have often pursued lower secondary education just to N-level, and have often pursued more technical subjects in lower secondary education. Most of the remainder proceed via A-levels to university, often starting in a Junior College.

The Institute of Technical Education (ITE) takes in students in the bottom quarter of the GCE grade distribution. For those with the lowest prior attainment coming into the ITE, specialised schools with additional resources provide extra support to improve their chances of success at the ITE. The ITE aims for its students to gain relevant technical skills. Participation in internship programmes, industry projects and overseas exchanges give students exposure to industry, and facilitates subsequent entry into the job market. ITE students are either pursuing a Nitec (National ITE Certificate), a Higher Nitec, a Master Nitec or a Diploma. The Nitec and Higher Nitec are two-year programmes which correspond to an ISCED level 4 qualification. After graduating, 90% of leavers (on average) receive job offers within 6 months of graduation. Within 10 years of leaving ITE, half of the graduates return to education, mostly to a polytechnic to get a diploma.

Polytechnic students come mostly from secondary schools with relatively strong GCEs, some from junior colleges with A-levels, and some from the ITE. Students at the polytechnics usually pursue a three-year diploma programme. The first year corresponds to ISCED level 4, the second and third to ISCED level 5. Polytechnic education includes industry internships of between six weeks and six years. For example, at Ngee Ann Polytechnic, internships are obligatory: usually undertaken in the third year, for two to six months in duration. The intern will be graded by a mentor/ supervisor, must deliver a project, and will follow a clear plan as set out by their mentor/ supervisor. The Master Nitec consists of a regular Nitec with three additional years

of relevant work experience, and is run alongside participating employers. Curricula are both textbook and project-based, and assessments include final exams and coursework projects. Many polytechnic graduates later enrol in university.

The government also provides everyone 25 and older with a S$500 (£290) credit to pursue further learning, alongside other financial support. In an apprenticeship programme for recent ITE and Polytechnic graduates, 'Earn and Learn' students get S$5,000 (£2,900) for signing on, and companies get S$15,000 (£8,600) to offset training costs. Singapore spends over £500 million annually on continuous education and training, which includes these programmes and others (see www.singaporebudget.gov.sg/budget_2019/about-budget/look-back-at-recent-budgets).

Sources; Tucker, 2016; Singapore Ministry of Education, 2018.

REQUIREMENTS FOR WORK PLACEMENTS AND WORK EXPERIENCE: IMPLICATIONS FOR ENGLAND

In England, work placements are used variably

There are limited data on the use of work placements in technical programmes in English HTE (outside apprenticeships), although the Higher Education Statistics Agency has started a data collection. A 2014 employers' survey provides some useful pointers, but does not specifically address HTE (see Box 2.6). Musset and Field (2013) and Field (2018b) argue that the use of work placements in HTE is patchy. The Independent Panel on Technical Education, (2016), looking across the entire technical education field, conclude that technical programmes have often involved no more than short work experience placements of a week or two. A recent literature review, and small set of case studies, looks at good practice in the delivery of level 4 and 5 in England. It refers to a range of desirable qualities in programmes cited by stakeholders, but touches on work placements only very briefly – reflecting the low profile of this issue in England (CooperGibson Research, 2018). In the responses to the consultation on HTE reform, some very mixed views emerged. While some respondents (including many training providers) saw advantages in workbased learning, others were more concerned about the challenges involved in work placements, and argued that they should not be mandatory (Wilson et al., 2020).

Box 2.6. Evidence on the employer offer of work placements in England: the 2014 Employer Perspectives Survey

The 2014 sweep of the UK Employers Perspectives Survey used a sample of 18,000 employers across the UK. 38% of the 10,000 employers surveyed in England offered some type of work placement in the previous year. The data do not separate out HTE placements, but 12% of employers in England offered work placements for 'college' students (FE and sixth form colleges) and 12% also offered placements for students at university. About half the employers in the UK who offered college placements reported that the placements were typically over a month, and around a quarter typically more than three months. Placements for university students were longer, with about two-thirds of employers reporting them as typically over a month, and nearly a third reporting them as typically over three months.

Employers offering work placements mostly (71% in England) cited altruistic motives for doing so, such as giving the trainees experience and corporate social responsibility. Well under half (38%) cited potential benefits to the employer, notably as a means of recruitment (cited by 28%). These figures cover all types of work placement, including short placements for school students.

Source: UKCES (2014).

The argument for work placements has been accepted at levels 2 and 3

The government's Post-16 Skills Plan proposed an entitlement to work placements for 16-18 year olds in level 2 and 3 programmes, and funding is now being provided to support these placements (Departments of Business, Innovation and Skills and Department for Education, 2016; ESFA, 2018). So the argument in principle for work placements has been accepted for young full-timers. Some of the funding to support these work placements should help to develop the capacity of employers to offer work placements in HTE. The government's newly announced plans 'encourage awarding bodies to incorporate it [workbased learning] into their qualifications where this is practical...'; but noting that many students will already have relevant work experience, the plans indicate that approval of a qualification will not depend on meeting any requirements for work-based learning (DfE, 2020). It is the argument of this report that those developing and delivering HTE qualifications should generally include work placements for young full-time students without relevant work experience.

An employer's offer of work placements signals support for HTE programmes

In England, the government has rightly emphasised the key role of employers in the development and delivery of HTE. The government has therefore proposed that qualifications should only be approved by the IfATE when linked to employer-created occupational standards, and approved providers of HTE qualifications will need to demonstrate their links with employer networks (DfE, 2019). Enforcing those requirements will be challenging, as measuring employer engagement is hard. But one clear indication of employer support for a programme and qualification lies in the willingness of employers to offer work placements as part of the programme.

Box 2.7. Work experience and workbased learning: requirements for full and part-timers in Swiss professional colleges

Professional colleges are, alongside professional examinations (see Box 2.2), one of two main parts of the Swiss professional education and training system.

Professional colleges provide specialised training programmes, regulated by the Confederation (federal government), leading to a Diploma. They are based on a curriculum established in consultation with the corresponding professional organisation. The number of professional college qualifications has greatly increased in recent years. Around a third of the diplomas are in the health care sector – in particular the programmes for registered nurses. Graduates receive a federally recognised qualification (eidgenössisch anerkanntes Diplom). Professional colleges use 33 core syllabuses to deliver around 450 different programmes. Since the 2015/2016 school year, public funding for professional college programmes has been provided by the cantons, usually up to a maximum of 50% of the average costs of each programme. For some key professions, such as nursing and other healthcare professions, cantonal contributions can be as high as 90% of average costs.

Work experience plays a key role for all students, but operates differently for different student groups. Around one-third of enrolments are full-time and concentrated in the healthcare fields. Full-time programmes last two years, with 20% of the time devoted to a trainee work placement. Part-time programmes last at least three years and require the student to be working at least 50% in a relevant field.

Sources: Conférence Suisse des Ecoles supérieures (undated); Fazekas, M. and S. Field (2013a); Federal Department for Economic Affairs, Education and Research (2017); Wettstein, E., Schmid, E. and P. Gonon. (2017).

For multiple reasons, HTE programmes can profit from providing work placements to full-time students

In conclusion, there are several reasons why full-time students in HTE programmes in England will benefit from work placements as an integrated part of their programme. First, there are many potential benefits of such placements, and empirical evidence in support. Second, the European countries with some of the strongest higher technical education programmes often make work placements mandatory. Third, the argument in principle for mandatory work placements has already been accepted in respect of young full-time students in level 2 and 3 technical programmes. Fourth, work placements provide a powerful means of testing and ensuring employer engagement in funded HTE programmes. A clear role for workbased learning, alongside recognition of prior learning and modularisation, offers a unique selling point for HTE qualifications. Outside degree apprenticeships and some forms of sandwich programmes, few higher education degrees offer a systematic role for workbased learning, and it is rarely adjusted to the circumstances of different student groups, including adult students where existing work experience, recognised as prior learning, offers the workbased learning element.

Work placements have to be good quality

Work experience is only valuable if it meets a number of demanding standards, in terms of the relevance of the work to the skills being developed; the quality of the training delivered in the workplace in terms of feedback and guidance; and the integration of the work experience into the classroom teaching. Section 3.2 below looks further into the criteria for quality in work placements.

Box 2.8. Working while studying

While formal work placements are a less regular part of higher technical programmes in England than in some European countries, it is quite common for students to work part-time while studying. In fact, working while learning is nearly as common in England as it is in countries where technical education is more prominent in the skills system. In England, around 90% of the young people who combine work and study are doing so outside formal vocational programmes. Conversely, in Germany and France, around half of those young people combining work and study are apprentices (Quintini, 2015). These figures cover students at all levels of education, including first degrees. But if HTE follows a similar pattern, the mix of working and studying may also be common among HTE students, particularly among part-time students. In England many 'full-time' students also work part time, recognising that patterns of full-time study are diverse and can make room for such study. Some evidence suggests that a moderate amount of work while learning can improve labour market outcomes without compromising school achievement (Dundes and Marx, 2006).

A requirement for work experience can be applied to both full- and part-timers

International experience suggests how a principle of expected work experience might be adapted to the needs of different groups. For adults, especially part-time students, work experience through current or past employment may serve some of the same functions as formal work placements. Those working in a relevant field may be able to put into practice, and therefore entrench and refine, the new skills and knowledge they acquire in an HTE programme. In this respect, the expectation for work experience therefore overlaps with arrangements for recognising prior learning discussed in the previous section. Work experience would need to be in a relevant field, recognising that students in the UK often work in some capacity or other while studying (see Box 2.8). Beffy et al. (2009) show that, in France, such work experience only improves labour market outcomes if it is related to the student's field of study (although there is also some countervailing evidence in Dundes and Marx, 2006). Table 2.1 sets out some of the expectations which might fall on different groups of HTE students.

This approach is consistent both with international and some domestic practice

In Swiss professional colleges, full-time students have mandatory work placements, while part-time students are free of this obligation, but instead need to be working at least 50% in a field closely related to the programme (see Box 2.7). In France, a full time DUT programme requires a work placement, but a DUT may also be obtained through recognition of prior learning for those who can demonstrate extensive relevant work experience (see Box 2.4). Implicitly at least, a form of this principle is already at work in England. Gallacher, Ingram and Reeve (2009) note that a part-time Foundation Degree in Early Years required students to be in

employment before starting the programme, with at least 30% of the programme linked to their work. At the same time, full-time students on an HNC in Early Years are offered a 14-week placement (about 39% of the annual programme time), with placements secured by the course, and a 'placement supervisor' identified for students. Students are expected to demonstrate, in the workplace, learning outcomes which are associated with preceding classroom units.

Table 2.1. How requirements on students for work placements can be adapted in response to work experience

Current or previous work experience		
No relevant previous or current work experience	Current work is relevant to target occupation	Previous relevant work experience
Needs a work placement	May not need, or in the case of full time workers have time for, an additional work placement. Needs opportunities to relate classroom learning to work experience.	May not need an additional work placement, although it would be helpful. Needs opportunities to relate classroom learning to previous work experience – for example by being invited to reflect on this experience in written or oral work as part of the HTE programme. May also need to have informally acquired skills and knowledge recognised and validated.

RECOMMENDATION 2.

Ensure HTE students benefit from workbased learning

Much evidence suggests that workbased learning is a key means of acquiring occupational skills. In many countries, this principle is reflected in the requirement for a substantial work placement in HTE programmes for full-time students. This same principle may be embodied in HTE programmes, adjusted to reflect the different circumstances of full- and part-time students with and without relevant work experience. Thus:

- *Students without relevant previous or current work experience, whether studying full- or part-time, should normally be expected to undertake a substantial placement with a relevant employer, involving workbased learning.*
- *Students with relevant previous or current work experience should be able to count this towards the workbased learning requirement of any qualification, as set out in recommendation 1 on recognition of prior learning.*

2.4 THE MODULARISATION OF QUALIFICATIONS AND PROGRAMMES

This section looks at modularisation in higher technical qualifications. Modularisation complements both recognition of prior learning and workbased learning, by making it easier to separate out, as modular components, learning outcomes that can be recognised as the result of prior learning, or that can be realised through workbased learning. This section describes different forms of modularisation and their potential benefits in terms of more flexible programmes that can be adapted to the needs of different students, and can be easily changed over time. Such flexibilities have particular benefits for adult students, although they may not be convenient or without cost to providers.

THE ADVANTAGES OF MODULARISATION

Modularisation is associated with different degrees of flexibility

'Modularisation' refers to the way in which programmes and qualifications may be broken down into separate building blocks. The terminology of 'units' and 'unitisation' is also sometimes used (CEDEFOP, 2015b). Different forms of modularisation are associated with different degrees of flexibility granted to students and providers in putting these building blocks together. At the most flexible end of the spectrum, building blocks might be pursued and certificated in any order as separate mini-qualifications. At the least flexible end of the spectrum, each module of a programme might have to be pursued in a set sequence leading to a single final qualification. There are intermediate possibilities. CEDEFOP (2015b) classifies the degree of modularisation across three dimensions according to; a) the flexibility permitted to students in sequencing modules; b) the extent of separate modular assessment and certification c) the freedom given to different providers to offer different modules.

In Europe modularisation has increased

In Europe there has been a gradual tendency for modularisation in vocational programmes and qualifications to increase, even while recognising that some long-standing occupations tend to be defined by a single objective – such as care for the patient in the case of nursing – which is consistent with an evolving (potentially modularised) range of knowledge and techniques to that end (Stanwick, 2009). Some of these occupations, as in the case of nursing may also require a full qualification as a license to practice, but this is not always so. The approach of Finland is described in Box 2.9. The benefits of modularisation include:

- **For adult students**, it can allow students to learn at their own pace, mastering a qualification module by module; it facilitates recognition of prior learning by identifying the sub-components where skills have already been acquired (see section 2.2 and Box 2.9). It may grant certification to those who only complete part of the programme. The identification of common modules in different programmes can also make it easier to transfer credits from one HTE provider and programme to another.
- **For students and HTE providers**, it allows for a common core of required modules alongside optional modules. This permits a balance between a well-defined professional identity in the core modules, and other elements which are not essential to that identity. For example, in France the DUT programme in management includes nine core common competences (such as communication skills and additional languages). Three specialisation options include finance and accounting, the management of small and medium organisations, and human resource management.
- **For those developing and delivering HTE**, modularisation allows for an easier updating of qualifications when changes – particularly technological developments – affect only part of the qualification.
- **Locally**, modularisation allows a qualification aligned with a national occupational standard to include modular additions that are designed to meet local employer needs.

Box 2.9. Flexible acquisition of modularised technical qualifications in Finland

In Finland, legislation provides a framework for modularised technical qualifications, with recognition of prior learning as one of the core principles. This means that, in principle, all competence-based qualifications may be obtained without any formal training at all.

Each competence-based qualification is broken down into a set of modules. For the completion of a qualification (or parts of it, i.e. modules) a 'personal study plan' is prepared in cooperation with the authorised provider of the qualification and the candidate. It must contain detailed descriptions of how, when and where the candidate will demonstrate required vocational competences. The technical training provider has the responsibility for the implementation of the personal study plan. A candidate demonstrates vocational skills through competence tests, involving practical work assignments and activities. Each module is assessed separately, and competence tests are arranged in accordance with a student's 'personal study plan' for the completion of the desired qualification and according to an approved plan for arranging competence tests.

Source: European Commission (2016).

THE MODULARISATION OF QUALIFICATIONS AND PROGRAMMES: IMPLICATIONS FOR ENGLAND

Given many adult HTE students, the arguments for modularisation are strong

In England, many adult HTE students could potentially benefit from modularisation, either because it facilitates recognition of prior learning, or because it allows for a flexible pace of learning. For providers, modularisation itself may be manageable, but flexible, tailored delivery linked to modularisation may be costly relative to standardised forms of provision. So realisation of the benefits of modularisation may require some regulatory encouragement.

RECOMMENDATION 3.

Take advantage of modularisation

Modularisation has extensive benefits, particularly for adults, but it also involves costs for the creators and providers of programmes and qualifications. Options for more systematic modularisation should be explored and pursued by those developing and delivering HTE qualifications, and encouraged by regulators.

2.5 USING END POINT ASSESSMENTS TO ANCHOR HIGHER TECHNICAL QUALIFICATIONS IN OCCUPATIONAL AND APPRENTICESHIP STANDARDS

Following the recent government proposals on HTE (DfE, 2020), higher technical qualifications will need to be articulated with level 4 and 5 apprenticeships, so that the respective roles of the two types of higher technical qualification can be understood by stakeholders. This section looks at how the end point assessments (EPAs) already used in apprenticeship qualifications may provide one means of making this connection, and linking higher technical qualifications to occupational standards. The end point assessment for each apprenticeship standard sets out, with some degree of detail, exactly how occupational competence is to be tested at the end of the apprenticeship programme.

Articulation between higher technical apprenticeships and other HTE qualifications is important

In July 2020, there were 117 apprenticeship standards at level 4 and 5 approved for delivery, and 34 further standards and proposals for standards in development (Institute for Apprenticeships and Technical Education, 2020a). Apprenticeships represented nearly one quarter of all HTE students in 2018 (Boniface, Whalley and Goodwin, 2018) and the number of apprenticeships at this level has been growing fast.

New 'approved' higher technical qualifications will need to follow existing apprenticeship standards

Under the government's proposals, 'approved' higher technical qualifications will have to be aligned with level 4 and 5 'occupational' standards (DfE, 2020). The IfATE make clear, in their commentary on the HTE approval process (Institute for Apprenticeships and Technical Education, 2020b), that these 'occupational' standards will be apprenticeship occupational standards. Under the government proposals, approved higher technical qualifications will need to "cover all the knowledge, skills, and behaviours described in the relevant occupational standard as may reasonably be expected to be attained by undertaking a course of education (for example, in a classroom-setting)", but the flexibility granted by the expression "as may reasonably be expected" is limited, because all approved qualifications will need to "equip the learner to get a job in the relevant occupation" (DfE, 2020). This means that all approved higher technical qualifications will need to demonstrate that they include all, or nearly all of the knowledge, skills and behaviours associated with an existing apprenticeship occupational standard.

Adherence to an occupational standard could be demonstrated by making use of the existing end point assessment

For an HTE qualification submitted by an awarding body to IfATE for approval, one way of demonstrating conformity with a connected occupational-apprenticeship standard would be to use the EPA already in place for that standard. It might require some small adaptation (for example to remove the employer appraisal of an apprentice), but in most respects the EPA is a purpose-built approved procedure specifically designed to assess exactly the knowledge skills and behaviours required by the occupational standard. In fact, taking it further, the commitment to assessment using the EPA would mean that within wide limits, all other features of the proposed higher technical qualification and associated programme would be difficult to challenge for failing to match the occupational standard. Provided they succeed in preparing students adequately for the EPA, the construction of the proposed higher technical qualification would presumably be very much up to the awarding body. It could, for example, include large elements of recognition of prior learning. These characteristics would make use of the EPA, for good reasons hugely attractive to awarding bodies.

Use of the EPA would make the task of regulation far easier for the IfATE

From the viewpoint of the IfATE as a regulatory body, use of the EPA for higher technical qualifications also has many attractions. Rather than having to evaluate whether the experience of students in a higher technical programme in relation to a different assessment procedure corresponds to occupational competence and the occupational standard, use of the EPA would provide a far simpler test of the quality of a higher technical qualification and the capacity of providers to deliver, through the qualification and programme, occupational competence. For these

reasons, the IfATE will have very good reasons to strongly encourage those seeking approval for higher technical qualifications to make use of the EPA.

It has been argued that the end point assessment should be utilised to recognise prior learning

More generally, if England were to follow the example of many other leading apprenticeship countries (e.g. Germany, Switzerland, Norway and others), those with relevant work experience could be permitted to proceed directly to the end point assessment, thus gaining the professional qualification associated with an apprenticeship standard without an apprenticeship programme, a point argued in (Field, 2018a, 2018b). In fact, by international standards, the lack of such a route within English apprenticeship is an anomaly. At the higher technical level, one way of realising such a route would be through the construction of approved higher technical qualifications, including large elements of recognition of prior learning alongside tailored preparation for the EPA as the assessment.

The end point assessment could therefore be used to support flexible routes to occupational competence

These considerations argue for the use of the EPA, initially developed for an apprenticeship, to be used much more widely as the end point for alternative routes to occupational competence. Such routes could include, alongside apprenticeship, flexible HTE qualifications, suitable for adults, which allow prior work experience to be recognised. The proposed model has some similarity to the system of occupational 'qualifications' in Estonia (see Box 2.10). In Estonia, occupational qualifications are developed in employer-led groups – akin to the Trailblazer groups — and these qualifications, tested through an examination, form the common end point of different types of vocational programme — a college-based programme, an apprenticeship, or recognition of prior learning.

Box 2.10. The Estonian occupational qualifications system

In Estonia, an occupational qualifications system provides a unifying framework, linked to employer needs, for all vocational qualifications. Occupational qualifications are developed by employer groups in the relevant industry sector at ISCED levels 2 to 8. Required competences and activities are defined for each occupation and used as a basis for study programmes and curricula. Occupational qualifications can be acquired through validation of non-formal and informal learning, as well as through an education programme or through an apprenticeship. An occupational qualification certificate is mandatory to work in some occupations.

Source: European Commission (2016); EQAVET (undated).

Those thrown out of work by the COVID-19 crisis may have need of RPL

One effect of the COVID-19 crisis is that some people with valuable working experience, but without associated qualifications, may lose their jobs. These may include some apprentices part-way through their programmes. These individuals will be searching for work, or may wish to build on their experience with further study, but will lack the formal qualifications that would provide the foundation for either avenue. In this context, a flexible programme to top up relevant skills and knowledge might lead to the end point assessment, and an HTE qualification. This could be achieved quickly by opening up the end point assessments of higher technical (and other) apprenticeships to those with relevant experience and prior learning, rather than reserving them for apprentices. Given the need for speed in such arrangements, this would have to work on a separate track to the development of approved higher technical qualifications, but it would constitute a closely-related development.

RECOMMENDATION 4.

Extend the use of end point assessments to non-apprenticeship programmes

New approved higher technical qualifications will need to demonstrate their alignment with agreed occupational and apprenticeship standards. A simple way of achieving this alignment would be to apply the end point assessments developed for apprenticeship (with suitable modification) to other higher technical routes. This would ensure adherence of multiple programmes and qualifications to a common occupational standard, and allow for different higher technical qualifications, and recognition of prior learning to be tailored to the needs of adults and others with different needs. This same model (applied to apprenticeship generally) might also have immediate application to those who have had their learning and working disrupted by the COVID-19 crisis.

CHAPTER 3 DELIVERING QUALITY WORK PLACEMENTS

Chapter 2 of this report argued that work placements are a valuable part of HTE programmes, and benefit students if they lack relevant previous or current work experience. To deliver quality work placements, employers need to see the advantages of offering work placements, while at the same time quality needs to be ensured. This chapter looks at how these objectives can both be achieved. Section 3.1 looks at the incentives on employers to engage with HTE, and suggests how HTE programmes can be adapted to encourage employer engagement and the offer of work placements. Section 3.2 proposes six quality criteria for HTE. Section 3.3 draws conclusions and makes recommendations.

3.1 ENSURING EMPLOYER WILLINGNESS TO OFFER WORK PLACEMENTS

This section looks at a necessary condition for quality work placements – employer support. It looks first at the economic incentives, in terms of costs and benefits, for employers to offer work placements. It then explains other types of incentive and suggests tools for encouraging employer engagement.

Table 3.1 The costs and benefits for employers of work placements and how they apply to HTE in England

Costs and benefits for employers of work placements	How these costs and benefits might fall on employers in England offering work placements to HTE students
Employers gain a production benefit, in that trainees undertake productive work for the employers. This benefit is greater if the trainees are relatively skilled – i.e. towards the end of their training, when they may substitute for expensive skilled workers.	In HTE, many students will be older, and will already have relevant knowledge and/or relevant work experience, so that it may be possible for employers to obtain production benefits even from relatively short work placements. In England, only 5% of those employers who had offered work placements as part of technical programmes reported that they had done so to contribute to production (UKCES, 2014).
Employers gain a recruitment benefit, in that they can try out the trainee as a potential employee, and subsequent recruitment is then based on solid knowledge of the individual's performance potential. This benefit is greater where employers can immediately recruit graduates of the programme.	Given that HTE programmes prepare workers for high-skilled occupations, recruitment benefits may be significant. In England, 28% of those employers who had offered work placements as part of technical programmes, reported that they had done so to help with recruitment (UKCES, 2014).
Set against these benefits are the costs. In the case of apprenticeships, the biggest cost is wages, but it also includes the time of skilled supervisors and trainers of apprentices, and some equipment and materials.	The costs to an employer of offering a work placement as part of an HTE programme will sometimes be lower than for apprenticeships, as employers do not normally offer substantial compensation to trainees on HTE work placements of just a few months in length.

Source: the first column is documented for apprenticeships in Kuczera (2017). The second column involves an assessment of how these costs and benefits might bear on HTE work placements.

Work placements depend on employer support

Work placements, as an integral part of HTE, depend on the willingness of employers to offer them, as well as factors like the geographical accessibility of employers for students. The quality of placements depends on the form and intensity of employer engagement, as it makes the difference between students being offered 'something to do' in a more or less relevant area, and those who experience a structured programme familiarising them with different aspects of the job, and receiving guidance and feedback from skilled practitioners. While there is, as yet, little or no direct research on the costs and benefits to employers of offering HTE programmes, some guidance emerges from studies of apprenticeship (see Kuczera, 2017). These studies suggest that employers provide placements because the trainees are productive, and offer a pool of potential recruits. The implications for HTE programmes are assessed in Table 3.1.

The COVID-19 crisis may make employers less willing to offer placements

In the short and medium term, the COVID-19 crisis may limit the offer of work placements. Immediately, this may be because social distancing is challenging in the workplace, and taking on inexperienced trainees may add to the challenges. In the medium term, the economic fallout from the crisis may cause some firms to cut back on the recruitment that might have been facilitated by taking on HTE trainees on placements. Over the medium and longer term, the nature of a work placement may also have to be rethought to take account of virtual workplaces, with many employees working from home or remotely. While these developments raise significant short- and longer-term challenges, they do not change the fundamental value of learning occupational skills through immersion in occupational practice. One alternative model of workbased learning is project-based learning, which, while quite different from conventional work placements, may also be used creatively in HTE programmes (see Box 3.4).

If work placements are built into qualifications, there are powerful incentives on providers and employers to cooperate

If work placements are built into individual HTE qualifications and programmes, HTE providers have compelling incentives to build the partnerships with employers that will support placements. Partly this will involve building relationships, but providers may also need to adjust the content of programmes and qualifications to meet local employer needs, or in other ways structure the workbased element so that it becomes more attractive to employers. So the willingness of providers to accommodate employer interests should encourage employers to offer placements.

Other incentives for employer engagement can be found

In the Swedish higher vocational education (HVE) system it is left to the initiative of local providers (including a mix of public and private providers), in partnership with employers, to propose programmes to a National Agency, which may then be funded for a limited period, subject to renewal. All HVE programmes include workbased learning, with a minimum of 25% in the two-year programmes. Each programme in every institution has a steering group including employers (Field, 2018b; Swedish National Agency for Higher Vocational Education, undated). In Swedish HTE the full engagement of employers, and workbased learning, is therefore built into the programme, rather than being something that has to be established at a later stage. One striking feature is that in Sweden there was previously a very weak history of employer engagement in the provision of technical programmes – so this programme successfully built on a very weak cultural and historical base.

3.2 QUALITY OF WORK PLACEMENTS: SIX CRITERIA

Six criteria of quality are proposed here

The European Commission (2017) has advanced 20 guiding principles of quality in work-based learning, but many of these concern the wider context of the relevant vocational qualification (such as, for example, the possibility of learning progression following graduation). The UK Standing Committee for Quality Assessment (2018), DfE (undated) and ESFA (2018) guidance related to funded industry placements in T-levels provide more direct suggestions. The ESFA guidance indicates that they expect the industry placement to offer a "real-life learning environment" of sufficient length to ensure that students have a good opportunity to learn, and that they contribute to the business. The placement should ensure a "clear structure and learning objectives" (ESFA, 2018). Here, drawing on international experience and UK, six criteria of quality in work placements as part of HTE are proposed and discussed in the paragraphs that follow:

- *clear learning objectives for the work placement;*
- *sufficiently long placements, well-located within the HTE programme schedule;*
- *a quality learning environment with the employer;*
- *at the employer, skilled trainer-practitioners to guide students on work placements;*
- *effective integration into the wider HTE programme;*
- *a clear provider role in facilitating and supporting the placement.*

Work placements should be associated with clear learning objectives

Clear learning objectives, as now required by the ESFA for the industry placements associated with T-levels, are an essential element in quality placements. Such objectives allow the trainee, and their workplace mentors and vocational teachers for the classroom part of the programme, to have a common understanding of what the trainee is expected to learn during the placement, and how it should be assessed. One example is the Danish arrangement set out in Box 3.1.

Sufficiently long placements may bring greater benefits

There is some evidence that longer work placements – a few months rather than a few weeks – bring greater benefits both to students and to employers. For students, recent research in the US suggests that longer internships, often more than 3 months, are more likely to be seen as useful by students (Grasgreen, 2012). For employers, a study in Sweden (at upper secondary level) suggests that placements of more than 20 weeks, as part of school-based VET, facilitates future recruitment and lowers its cost. Providing training to students also increases the skills and motivation of company staff, especially for those employees who supervise students.

Box 3.1. The quality assurance of workbased learning in Denmark

In **Denmark**, all post-secondary academy profession programmes (usually involving two years of full-time study) include a minimum of three months of work-based learning. Each student has a workplace supervisor – a practitioner-trainer who works for their employer – who understands the theoretical content of the student's course and has the time and resources to offer guidance. Quality assurance has three main features.

- Work placement arrangements are a decisive factor in the accreditation of new post-secondary academy programmes.
- Attention is given to making these placements as useful as possible for both students and employers.
- During work placements, students apply concepts learned in the study programme at the workplace, linking theory to practice. After their placement, students report back to their HTE provider and are assessed to see if they have met their learning objectives.

Source. Field et al. (2012).

Arrangements for sequencing work placements are diverse

Work placements often take place in the middle of a college programme, and sometimes over a summer (when there is a natural break in a school-based programme). In other cases they are broken into multiple shorter placements. They may also be on a weekly basis, sometimes one day a week. The arrangements need to be workable for employers (who may, for example, find it helpful to have extra pairs of hands at particularly busy times of the year). They need to cohere with the off-the-job parts of the programme, and should be practical in terms of transport – it may be feasible to spend a few months with an employer in another part of the country, but not to travel there on a weekly basis. A placement right at the end of the HTE programme offers the employer a nearly fully qualified trainee, who can, if they perform well, be seamlessly recruited at the end of the work placement. In a Swedish study, Karlson and Persson (2014) found that students who take their work placement in the third (last) year of the programme contribute more to production than those who take their traineeships earlier in the programme.

Employers must be able to offer a quality learning environment

In some countries, for vocational programmes at upper secondary level, employers offering work placements have to meet minimum requirements, related to the kind of workplace experience and training on offer, whether there is adequate workspace for trainees, and to the kind of support, supervision and feedback which trainees will receive. At its best, such accreditation is not only a control to ensure minimum standards, but also a measure that assists the employer to provide the best quality placement. In Denmark, it is not the employer that is accredited, it is the HTE programme, but on the basis of satisfactory work placement arrangements with employers (see Box 3.1).

Skilled trainer-practitioners are needed to guide trainees in work placements
Often the quality of work placements will depend on the kind of support, mentoring, guidance, training, and feedback offered to trainees in the workplace. This can be a demanding pedagogical task. Box 3.2 describes the kind of training that is available to develop workplace trainers in Sweden and Finland.

The development of the apprenticeship system could, in principle, encourage the development of skilled workplace trainers
Within apprenticeship, in England, there is not the same expectation as one might find in countries in continental Europe that employers will, through qualified trainers among their staff, deliver the bulk of the training associated with apprenticeship. Instead, this is seen as something which will typically be outsourced to a training provider (Field, 2018a). This means that employers in England often lack the skilled trainers who might be able to provide effective guidance to HTE students during work placements. Hopefully, continued improvement in the apprenticeship system, alongside the development of industry placements linked to T-levels, may increase in-house capacity, at least in larger employers.

Box 3.2. Training for workplace trainers in Sweden and Finland

In Sweden, an online programme, developed and funded by the National Agency for Education, is designed for trainers in enterprises offering work placements as part of technical programmes, and for technical education teachers. It involves the equivalent of two days coursework and includes four general modules and a supplementary module addressing apprenticeship. Each module contains short filmed scenes and interactive exercises. It can be followed online in a flexible way, on smartphones, tablets and computers. As of January 2018, 2800 technical education teachers (about one-third of the total), and more than 18,000 employer-based trainers had completed the programme.

In Finland, a programme for workplace instructor training, developed by the National Board of Education, covers how training content is covered and studied, and involves about three weeks of training. It covers the planning of training, instruction, and assessment. While this training is not obligatory, education providers who engage with firms on work placements can recommend the training programme to workplace instructors. Education providers that collaborate with enterprises can arrange the training themselves or deliver the training in collaboration with other bodies. The programme has yielded positive results and helped to ensure consistency of training across firms. Funding sources for the training can be varied, and tend to include education providers, firms, and government.

Source: Kuczera and Jeon (2019).

There should be effective integration of work placements with classroom teaching
For work placements to be of most value, they need to be integrated into the broader HTE programme of which they are part. Clear learning objectives for work placements underpin this integration, as they establish the role of work placements relative to other forms of learning. Vocational teachers therefore need to have a close awareness of different workplaces and the kind of workbased learning opportunities they offer (typically acquired by visiting students and employers during work placements) so that they can take full advantage of the practical experience of students. Box 3.1 described how some of these connections are made in Denmark. Students themselves can help to ensure complementarity between the work placements and classroom learning contexts; one method is to encourage debriefing sessions following work placements with the provider, allowing a reflection on what has been learnt relative to the objectives of the work placement (see Box 3.3).

Box 3.3. Two examples from Austria of how workbased learning is integrated into technical education programme

Prior to their work placements, trainees (at ISCED levels 3-5) in Austrian VET Colleges of Tourism participate in briefing sessions about how to get the most out of work placements. After their placements, trainees have systematic debriefing sessions, through a meeting between the trainee and the college teacher. The briefings review the educational objectives of the work placement, which typically the professional knowledge to be acquired; that the student should implement skills acquired in college in a relevant work context; gain comprehensive insight into the organisation of a company; learn the duties and rights of an employee and check the job situation against these criteria; conduct themselves in a friendly, accurate, confident and effective manner towards supervisors and co-workers; and gain a positive attitude both towards work in general and towards their specific professional environment.

Dual study programmes at Bachelor and Master level offered at the University of Applied Science (UAS) (FH Joanneum) integrate the learning that emerges from work placements into the programme using different tools.

- Modular system: The company must agree to deliver specific learning modules during the practical learning phase at the company. These modules are part of the curriculum.
- Diary and reports on work placements: Students have to keep a diary during the work placement and summarise its contents in a report on completion of the placement. These reports support an assessment of the development of their competence.
- Lectures at UAS: Experience during the practical training is discussed in lectures and in seminars. This aims to encourage exchange between students, but it also offers feedback that can be used for further development of the study programme.

Source: European Commission (2013; 2017).

There should be a clear provider role in developing the relationships with employers that facilitate individual work placements

Usually, in HTE programmes, providers take the lead in identifying workbased learning opportunities. The provider is in a strong position to judge the suitability of an employer, and to have established a partnership with the employer prior to the placement. Such a partnership will then underpin individual placements (confirmed bilaterally between the student and the employer) as personal and institutional links will facilitate quality assurance, and the capacity to resolve problems if they arise. This will require close cooperation at multiple levels between the employer and staff in the provider. However more comprehensive reliance on the initiative of students to find work placements has several problems. First, students are not always in the best position to judge the suitability of an employer. Second, there are significant equity problems when internships depend on the social contacts of a student (and often their parents); more disadvantaged students often lack the necessary contacts with employers. Third, if providers have less responsibility for work placements then they lose the incentive to work closely with employers in designing the programme to reflect employer needs, so as to facilitate the offer of work placements.

Box 3.4. Project-based learning as an alternative form of work-related learning

Project-based learning can offer a form of workbased learning different from regular work placements, and is relatively common in HTE (as opposed to lower level) programmes because it sometimes presupposes mastery of basic professional skills. Often, projects will take the form of a research and development project, designed to develop a tool or process that will assist the employer. For example, in German Fachschulen HTE programmes, student projects are normally a requirement, pursued towards the end of the programme. Either individually, or in small groups, students are expected to devise solutions to practically relevant problems. The projects are typically completed in collaboration with an employer, where students receive guidance. In return, the employers can keep and use the final product for their own purposes.

While the efficacy of project-based learning has been widely promoted, the general evidence is that it is 'promising but unproven'. In the HTE context, the project is often undertaken in the HTE provider rather than in the workplace, so that the scope for learning from a busy, challenging workplace is less. While this may not be critical for those who already have extensive experience of such an environment, it will be important for those wishing to enter a profession as novices. This suggests that while project-based learning is a potentially useful learning device, it serves different purposes from a regular work placement.

Source: Fazekas and Field, 2013b; Condliffe et al., 2017.

3.3 ENGAGING EMPLOYERS IN QUALITY WORK PLACEMENTS: IMPLICATIONS FOR ENGLAND

International experience suggests that quality work placements are achievable

The experience of many countries suggests that it is possible to successfully include quality work placements as part of HTE programmes. Realising this outcome in England from the current low baseline, particularly in the context of the COVID-19 crisis, will be demanding, but the prize of success, in building distinctive HTE qualifications and programmes linked firmly to employer needs, is a large one. It calls for an approach to quality which is supportive, seeking to improve the quality of work placements, often also in the interests of the employer. It also means building partnerships with employers deeply into the substance of HTE, so that employers see the programmes and qualifications as 'their' programmes designed to meet their needs. In England, the evidence suggests that employers tend to offer work placements primarily on grounds of social responsibility (see UKCES, 2014). While this is commendable, it does not offer a solid foundation for scaling up work placements in response to student needs, as such an expansion would need to be driven by employer need.

Work placements need to meet employer as well as student needs

For HTE providers, this means working with employers to establish what is convenient and desirable for them, as well as fitting in with the classroom-based part of the programme. Experience has shown, in the case of apprenticeship, that cost-benefit analysis can be a powerful way of persuading employers of the benefits of participation – recognising that only some types of employer, in certain sectors, will obtain net benefits from participation. Recent studies in Spain and England pursue this approach (Wolter and Joho, 2018; Wolter and Mühlemann, 2015). It could therefore be helpful to use a similar costing framework and apply the same principles to HTE in England. In this way guidance would be provided for employers on the potential benefits to them from the offer of work placements.

HTE providers also need support

Individual HTE providers may need support in developing their links with employers and their capacity to foster effective learning through work placements. Sometimes this support may come from organised bodies, such as the SBB in the Netherlands (see www.s-bb.nl/en, and Hoftijzer, Stronkowski and Rozenbaum 2018). It will often be helpful for providers to find a way to share their experience and learn from each other. One systematic support for this form of sharing is provided in Finland in the shape of a manual fostered by the Finnish National Board of Education (see Box 3.5).

Box 3.5. Sharing experience and innovation in work placements in Finland

In Finland, a manual prepared by the National Board of Education is made available to providers, colleges, training centres and employers, with the aim of helping them to share innovative work-based learning practices. The manual encourages providers to carry out a needs assessment, using measures such as a SWOT analysis and peer review, to identify what needs improvement. It encourages providers to identify good practice in other providers by identifying those aspects which are not context-dependent and can therefore be transferred. It also offers practical examples of how a provider can identify where improvements to work placements are required, and how to plan and implement such improvements.

Source: European Commission, 2013.

RECOMMENDATION 5.

Ensure that HTE work placements are good quality and that employers and providers receive the support and encouragement they need to offer placements.

Good quality work placements in higher technical education should involve clear learning objectives and be sufficiently long to provide substantial learning opportunities. The workplaces should offer a quality learning environment, where trainees have the opportunity to acquire a range of occupational skills under the guidance of skilled trainer-practitioners. Placements should be effectively integrated into the wider HTE programme, and HTE training providers should take the lead in establishing the partnerships with employers that facilitate the offer of work placements to students.

Support should be offered to employers in developing their capacity to offer work placements. To this end, effective programmes to train employer-based trainers would be very useful. Such training would have many spin-off benefits for employers, since those so trained could also train other staff, outside the frame of the HTE programme, and play a role in apprenticeship training (at all levels), and help to professionalise the employer role in technical training.

CHAPTER 4 TACKLING KEY CHALLENGES IN THE DEVELOPMENT OF HTE QUALIFICATIONS

This chapter examines four issues critical to the quality and success of HTE programmes and qualifications. Section 4.1 looks at the extent to which employers are involved in the creation of qualifications, how England compares with other countries in this respect, and what might be done to strengthen employer engagement. Section 4.2 explores evidence that HTE institutional providers, programmes and qualifications are all more diverse in England than in other countries, and makes proposals for how this fragmentation might best be managed. Section 4.3 looks at how well HTE qualifications prepare students for further learning opportunities. It describes the challenges of basic skills – in numeracy, literacy, and digital skills – in England and argues that HTE needs to foster these skills systematically, often by seeking to develop these skills in the context of technical education.

4.1 LINKING HTE QUALIFICATIONS TO EMPLOYER NEEDS

A key requirement for good quality HTE qualifications is that they should be closely linked to employer requirements. The government proposes that approved higher technical qualifications should "be understood and recognised as high quality by employers" (DfE, 2020). This section looks at this issue.

HOW HTE QUALIFICATIONS ARE LINKED TO EMPLOYER NEEDS IN DIFFERENT COUNTRIES

HTE qualifications can be classified according to the lead institution involved in their creation

Most technical qualifications, and the associated programmes, are created, for good reasons, through consultation between different interested bodies. Qualifications can be categorised according to the institution that takes the initiative in establishing them, as follows:

- **Led by employers**. These would include, for example, professional examinations in Switzerland, where employers come together to propose the examination, and apprenticeship standards in England, initiated by employers in Trailblazer Groups. In both these cases government and/or its agencies must agree to the qualifications, but the initiative lies with employers.
- **Led by provider institutions**. These would include, for example, foundation degrees in England developed by universities and colleges, and certificate programmes in the United States developed in community colleges.
- **Led by government agencies** (normally in consultation with employers and other stakeholders). These would include higher national qualifications in Scotland (where the qualification is designed by the Scottish Qualifications Authority – see Box 4.2), and DUT programmes in France.
- **Led by independent non-profit and for-profit bodies** (other than those led by independent education institutions such as universities). In England, this would include the HNC and HND programmes owned by Pearson, and examinations created by professional bodies such as in accountancy, and IT certifications.

In England 'awarding bodies' can include any of these categories

In England, 'awarding bodies', which means bodies that are granted the authority to develop and award qualifications, can include any of these categories.

There are both local and national dimensions to qualifications and programmes

Government and employer-led qualifications are typically national, usually reflecting national consultations. Provider-led qualifications may aim to meet national requirements for an occupation, but they are local in the sense that the qualification – for example, a foundation degree – is typically only available through one provider institution in one part of the country. Provider-led qualifications may reflect a specialism of the institution (following a 'university' model), or alternatively involve some negotiation with local employers to reflect local labour market requirements.

There are three main ways in which employers are involved in the creation of HTE qualifications

Looked at across countries, the strongest HTE qualifications are closely linked with employer needs. This linkage comes about in some combination of three main ways:

- when employer bodies initiate the qualifications. For example in Switzerland professional examinations are only established following an initiative by an employer body, endorsed and supported by the government, once the examination is supported by a sufficiently wide range of employers (see Box 2.2). Employers may also be involved as full partners in creating programmes and qualifications. For example in Swedish higher vocational education, programmes and qualifications are only created following a request to the relevant government agency by an HTE provider in partnership with local employers (see Field 2018b);
- when the qualification and/or programmes anticipate that a proportion of content should be negotiated locally with employers by provider institutions. This point is further discussed below;
- when work placements are integrated components of technical programmes. Such integration encourages providers to work closely with employers in the development of HTE qualifications and programmes, and as a result employers will see them as relevant to their needs. This point was developed in section 3.2.

LINKING HTE QUALIFICATIONS TO EMPLOYER NEEDS: IMPLICATIONS FOR ENGLAND

Employers role in higher technical education has weakened

Historically, England's HTE system was led by government and employers together – for example in the context of the development of HNCs and HNDs from the 1920s onwards. More recently the development of Foundation Degrees, and Diplomas and Certificates in Higher Education has given providers, in particular higher education institutions which have their own awarding powers, a strong role, while HNDs and HNCs now fall under Pearson as an independent commercial body. Over decades therefore, the role of employers has tended to weaken, although most recently, the development and growth of apprenticeship standards at level 4 and 5 has shifted the balance, given the leading role of employers, through Trailblazer groups, in establishing these standards (see Field, 2018b for a fuller discussion of this history).

Often in England, none of these three routes of employer influence apply
In many HTE programmes and qualifications, employers in England are not engaged in any of the three ways described above. As a result, the link between qualification development and employer needs comes down to an expectation of 'consultation' with employers. The significance of such consultation depends on which employers have been consulted, how fully, and how much influence was granted to employers. This is a serious challenge in England, underlined by the very proper emphasis in new policy proposals from the government that strong employer support will be necessary for HTE qualifications to be approved by the IfATE (DfE, 2020).

Qualifications can include a locally negotiated element
As argued in Field (2018b) a national technical qualification, including a core of requirements, can also allow for a locally negotiated element. In the HTE programmes offered in German Fachschulen, while most of the qualification is determined at regional level, around 20 per cent of the curriculum is determined by individual Fachschulen in consultation with local employers (Fazekas and Field, 2013b). In England, this same approach of allowing a proportion of the curriculum to be negotiated locally has already been proposed by the Commission on Adult Vocational Teaching and Learning.

> 'We need a core and tailored approach to the design of vocational qualifications and curricula – a nationally specified core with a tailored element to meet local demand. This approach would be underpinned by the two-way street, with colleges, training providers and employers working together to develop local elements of qualifications and curricula to meet the specific needs of employers and learners – giving employers a direct influence in shaping skills programmes and qualifications. (Learning and Skills Improvement Service, 2013).'

This would imply linking approval of qualifications to local flexibility
The government's new proposals support this approach. An HTE qualification proposed for approval by the IfATE must be aligned with national occupational standards in their 'core', but they may also include elements tailored to local needs. The new Skills Advisory Panels will play a role in guiding such a development (DfE, 2020). In the case of local/institutional qualifications this might be built into the qualification. In the case of a national qualification, the qualification might allow flexibility for a local provider to develop an element that would have to be locally negotiated with employers.

RECOMMENDATION 6.

Identify criteria to demonstrate employer engagement in HTE programmes and qualifications

The government has proposed, rightly, that employer engagement in, and support for, higher technical qualifications should be demonstrated if those programmes are to be approved. But employer engagement is hard to measure. In support of the government's proposal, the following criteria, typically in combination, might be used to grade the level of employer engagement:

- *where programmes and qualifications are employer-led, specifically in higher technical apprenticeships, and in HTE qualifications closely linked to an occupational standard developed by employers as in the government's new proposals; or by involving individual employers as partners in the establishment of local HTE programmes;*
- *following international experience, and existing proposals in England, through the inclusion, within the qualification, of an element which is locally negotiated with employers. This element would support the engagement of local employers and the offer of work placements;*
- *through a requirement in the qualification or programme for substantive work placements for full-time students in HTE programmes or relevant work experience (see recommendation 2).*

4.2 MANAGING FRAGMENTATION AND DIVERSITY

This section argues that England, by international standards, has an unusually diverse set of HTE providers and an unusually large number of both qualification types, and individual qualifications in HTE. This tends to create confusion for both students and employers. Recognising the obstacles to any immediate change in this landscape, it proposes measures, drawn from the experience of other countries, to manage diversity.

Table 4.1. Types of HTE providers and country examples

Type of provider	Country example
Higher education institutions delivering bachelor's degrees, also delivering ISCED level 5 (and sometimes level 4). For example Dutch universities of applied science offering associate degrees; universities in England offering foundation degrees.	In the Netherlands, academic universities are distinguished from universities of applied science. The 36 universities of applied science (hogescholen) offer applied professional programmes up to master's level and serve nearly half a million students. A large proportion undertake four-year bachelor's degrees. In the last decade, the UAS system has been developing its offer of two-year associate degrees (Broek, 2019).
Primarily upper secondary vocational institutions/schools, that also offer HTE. For example lycées professionelles in France for BTS, Fachschulen in Germany. In Sweden some upper secondary vocational schools also offer higher vocational education.	In France, the lycées professionnelles have, as their main task, the delivery of upper secondary baccalaureats professionelles (allowing entry to tertiary education) as well as technical qualifications in a chosen field. Lycées professionnels also offer the HTE programme Brevet de Technicien Supérieur (BTS), although some BTS programmes are delivered through distance learning or an alternance apprenticeship). https://eduscol.education.fr/pid23177/lycee-professionnel.html
Institutions dedicated to, or primarily dedicated to HTE provision. For example professional colleges in Switzerland, polytechnics in Singapore. Arguably FE colleges in Scotland.	In Switzerland, there were slightly less than 170 professional colleges listed on the website of the professional colleges organisation in March 2018 (https://www.c-es.ch/ecoles-superieures/membres-mitglieder-membri). Professional colleges provide specialised training programmes, regulated by the Confederation, leading to a Diploma. They are based on a curriculum established in consultation with the corresponding professional organisation and should therefore be based on the needs of the market. Full-time programmes last two years.
Mixed function institutions. For example TAFEs in Australia, FE colleges in England, community colleges in the US. Many private providers.	In Australia 59 Technical and Further Education (TAFE) institutions serve more than one million students, and provide a diverse set of technical training programmes. They are largely owned by the governments of the Australian states and territories. They provide qualifications at Diploma and Advanced Diploma level (1-2-year programmes) among many other technical programmes. (See https://tda.edu.au/).

HTE PROVIDERS: HOW ENGLAND COMPARES

For many sectors of education there is a 'natural' category of education provider: thus primary schools deliver virtually all primary education, while universities deliver most doctoral qualifications. Technical education tends to involve a wider range of providers, although in many European countries, upper secondary technical education is delivered by a dedicated set of schools. Higher technical education is even more variable: across countries, it is provided by a mix of four types of institutional provider (see Table 4.1).

Box 4.1. Community Colleges in the United States

Community colleges have two historical roots. One lies in "junior colleges", designed to provide students with the first two years of a four-year bachelor's degree. The second emerges from the two-year technical institutes designed for post-high-school vocational preparation. Most community colleges deliver two-year associate degrees reflecting both functions, alongside workforce training, remedial education, fine and cultural arts, and general education. About 80% of community college students are enrolled to earn an associate degree with about 10% seeking a certificate, and another 10% not seeking a qualification.

Community colleges have open admissions, educate students who lack basic educational or occupational skills or are otherwise not prepared for a four-year degree, focus on teaching rather than research, and award qualifications below bachelor's level. Despite very high rates of drop-out, those who drop out often seem to get some returns from their studies, and those who do graduate with an associate degree or a shorter certificate earn 10-20% more than those with no post-secondary education.

US Department of Education (2013); Kuczera and Field (2013).

The providers of HTE in England are exceptionally diverse

In several countries, HTE is delivered by providers with a primary mission to deliver HTE. For example in the United States, community colleges mainly deliver HTE certificate and associate degree programmes (see Box 4.1). In Scotland, provision of the Scottish 'higher nationals' is concentrated in FE colleges, and HTE plays a larger role in the education system overall (see Box 4.2). In Switzerland, the professional colleges are dedicated to HTE, as are the IUT institutions in France. Conversely in England, HTE plays a marginal role in the activities of multiple institutions. While in principle, FE colleges might appear to offer a natural home for HTE provision, HTE is rarely a major part of the offer in any individual college (see Zaidi, Beadle and Hannah, 2019). Unlike many other countries, English HTE has previously lacked a sector of providers primarily dedicated to HTE, and which can therefore champion HTE. Potentially, the providers brought together in partnerships, represented by the new Institutes of Technology, could fill this role. The creation of the Institutes is intended to expand provision of HTE.

QUALIFICATIONS AND QUALIFICATION TYPES: HOW ENGLAND COMPARES

In England, reforms are designed to address excessive numbers of qualifications

In England, concern with excessive numbers of technical qualifications led to the Sainsbury Review recommendation to consolidate level 2 and 3 technical qualifications into a limited number of qualifications organised around fifteen technical pathways (Independent Panel on Technical Education, 2016). The Sainsbury review, following earlier OECD recommendations (Musset and Field, 2013) argued that, at level 2 and 3, there should be only one main qualification for each target occupation.

The 'type' of qualification is distinguished from qualifications themselves.
There is a distinction between the **types** of HTE qualification (such as an HND), and the **qualifications** themselves (such as an HND in Engineering). There can also be sub-types, for example, within the category of professional examinations in Switzerland there are federal diplomas and, separately, advanced federal diplomas. A 'type' is a flexible concept; US 'certificates' include all HTE programmes and qualifications involving less than two years of full-time study, covering a wide variety of certificates. Usually, a type of qualification covers many fields of study, while individual qualifications relate to one field of study and the associated occupational target.

Table 4.2 Main types of higher technical qualifications

Country	Main higher technical qualifications
England	Foundation degree, HND, HNC, Diplomas, Diverse other qualifications. Level 4 and 5 apprenticeships
Denmark	Professional academy programmes
France	DUT, BTS. Post-secondary apprenticeships
Scotland	HNDs, HNCs and apprenticeship at HTE level
Singapore	NITEC diplomas (polytechnics) and Institute of Technical Education qualifications
Sweden	Higher Vocational Education (one and two-year programmes)
Switzerland	Professional examinations (at two levels) Professional college programmes
Germany	Fachschulen qualifications, professional examinations
Ireland	Higher and Advanced Certificates
Israel	Practical engineering programmes
Korea	Junior college technical; polytechnic qualifications
United States	Associate degrees, Certificates

While these comparisons should be treated cautiously, they suggest more types of qualifications in England than in many countries
Table 4.2 shows a comparison of the number of types of HTE qualifications in England and some other countries. Some smaller-scale qualifications are excluded, and, as in the case of US certificates, some systems bundle together many different varieties of qualification under an umbrella heading. That said, Table 4.2 suggests that there are rather more HTE qualification types in England than in many other countries. In particular, the co-existence of foundation degrees, HNDs, level 5 apprenticeships, Diplomas in Higher Education and a variety of other Diplomas represents a more complicated mix than in most countries. This reflects labelling as well as substance, but the attractiveness and status of qualifications, for both students and employers, is often a matter of labels and perception, so this matters. In Scotland, the centrally managed 'higher nationals' play a much larger role in the skills system than HTE in England (see Box 4.2).

Box 4.2. Higher National Qualifications in Scotland

In Scotland, (unlike other parts of the UK which tend to use Pearson HNCs and HNDs) Higher National Diplomas and Certificates are designed and awarded by the Scottish Qualifications Authority (SQA). Established by this government agency, they have also been formally supported by the government in Scotland for many decades. This support is reflected in the large numbers of students, with around 25 to 30% of higher education students pursuing either an HNC or an HND. This means that HTE overall in Scotland plays a larger role in Scotland than in England. This position so impressed the Dearing Inquiry two decades ago that their report endorsed an expansion of HNCs and HNDs in England, based on the Scottish experience.

Starting in the mid-2000s the SQA has reviewed and updated HNCs and HNDs to rationalise provision and remove duplication, while maintaining comprehensive provision across occupational and educational sectors. Articulation to a full degree is part of Scottish Government policy.

Source: UCAS, 2017; Field, 2018b; NCIHE, (1997).

The number of HTE qualifications may be greater in England

There are no international standardised data sets on the numbers of qualifications in different countries, and what counts as a single qualification (as opposed to a specialisation within a qualification) is often unclear, but a rough comparison based on available literature suggests that England again has more qualifications than some comparable countries, as indicated below.

- In England, there were 3368 different level 4 and 5 qualifications available to learners in 2016/17. Of these, 735 were developed by independent awarding organisations and 2633 by higher education Institutions (Zaidi, Beadle and Hannah, 2019).
- In Switzerland, professional examinations offer 220 professions at basic level (Federal PET Diploma), and 170 at advanced level (Advanced Federal PET Diploma). Professional colleges utilise 33 core syllabuses to deliver around 450 different programmes (Swiss Federal Department for Economic Affairs, Education and Research, 2017).
- In Sweden, there were just under 2000 higher vocational education programmes in 2017 (Swedish National Agency for Higher Vocational Education, 2018).
- In France, the BTS qualification allows for study in relation to around 100 occupational categories. The DUT is organised in 25 different industry sectors (the number of qualifications within each sector is less clear), but DUT qualifications, although delivered in tertiary institutions, are developed nationally with employers, and not by individual tertiary institutions (Grelet, Romani and Timoteo, 2010; French Ministry of Higher Education, Research and Innovation, undated).

MANAGING FRAGMENTATION AND DIVERSITY: IMPLICATIONS FOR ENGLAND

England has a wider range of HTE providers and qualifications than most other countries

In conclusion, England has a wider range of providers, delivering more diverse HTE qualification types, and a greater number of qualifications than many other countries with substantial HTE systems. It might be argued that a diverse set of qualifications and providers gives students more choice. In this vein, Zaidi, Beadle and Hannah (2019), in their review of the level 4 and 5 provider market, use some general criteria, derived from the Office of Fair Trading in respect of public sector provider markets, to assess the provider market for HTE. Their overall market-focused framework emphasises the value of diversity, choice, and competition, rather than the simplicity of a small number of key qualifications and dedicated providers. It is therefore not surprising that this report is positive about the state of the English provider market and the qualifications.

The diversity of HTE is better described as fragmentation, given its effects

But, while the report by Zaidi and colleagues provides useful evidence and analysis, their evaluative framework is limited. If diversity and choice were good tests of the health and competitiveness of the sector, then HTE in England would be much more successful in terms of market share than the extraordinarily homogeneous competing offer of three-year full-time degrees from universities. It would also be more successful than other countries, where there are often simple HTE programme choices in a limited set of providers. But HTE in England has not competed effectively against three-year degrees.

This evidence of how fragmentation damages HTE is no surprise

In many markets, diversity of products and services is a strength because it offers choice to consumers. But markets for technical qualifications behave differently for two reasons. First, student-consumers have very weak information about the quality of programmes and qualifications, and unlike other markets, few or no opportunities to make the repeat purchases that reflect and reinforce the experience of quality. Their choices may also be constrained by what is available locally and in a mode of study which is suitable to their circumstances. In such circumstances, clear and simple choices are necessary to avoid confusion. Second, students not only want to develop a useful set of skills through their HTE programme and qualification, they also want a qualification that will be seen as desirable by potential employers. In this respect, deciding on an HTE programme is like choosing a set of clothes to wear at a job interview; such choices, for understandable reasons, tend to converge on a limited range of well-understood and conventional options.

While some diversity is desirable, it has gone too far

This conclusion must be qualified. Students have limited options when entering post-secondary education, and one of the merits of HTE is that it offers an additional option which differs from the three-year degree. (To extend the value of this option, this report argues that HTE should differentiate itself more sharply from such degrees, through workbased learning, recognition of prior learning, and modularisation.) But the contention here is that the proliferation of HTE qualifications and programmes has gone much too far, and has become counter-productive. Direct evidence supports this conclusion. In the business area CooperGibson Research (2018) report that in England "hundreds of qualifications at level 4 and 5" mean that both employers and learners "struggle to differentiate

between qualifications, judge skill levels, and understand the competencies that each pathway may provide." Similarly, a recent study by UCAS (2017) also argues that at HTE level "… the proliferation of different courses and pathways is confusing for students, advisers, and employers". The government's policy review found that the many qualifications available are confusing, such that it is difficult for learners to find the right qualification relative to their occupational target (DfE, 2020). This picture of confusion contrasts starkly with the apparent clarity of the main competing brand — three-year degrees delivered by universities.

RECOMMENDATION 7.

Limit and manage fragmentation in qualifications and providers

Fragmentation is clearly damaging higher technical education in England. The strategic policy objective should therefore be to simplify, as far as possible, the HTE landscape, rather than to offer more choice. Recognising that some degree of complexity in the landscape is inevitable in the short term at least, some emphasis should be given to measures which might allow HTE to flourish despite fragmented providers and a diversity of provider and programme choices. This might be achieved through consolidation of HTE types under appropriate nomenclature, removal of confusing duplication, targeted funding for HTE, the use of professional examinations, and strengthened career guidance. Thus:

- *Nomenclature could be simplified, and the government's plan to name all qualifications at this level as 'higher technical qualifications' is to be welcomed.*
- *Duplication should be addressed in decisions taken by DfE and IfATE to approve HTE qualifications. It will not, for example, assist students for them to have a choice between an HND, a Diploma in Higher Education, a Foundation Degree and a level 5 apprenticeship all with the same occupational target, without any real guidance about the distinctions between these options or their relative value.*
- *Effective targeted funding, and associated regulation, can make a difference. In Sweden, higher vocational education has flourished despite multiple types of training provider because it is supported by a dedicated funding stream.*
- *Effective career information, as recommended in UCAS (2017) can help to guide students towards good quality programmes with strong career prospects. It can, in particular, draw on recent findings regarding the types of HTE with the best returns (see Box 1.1).*

4.3 BASIC SKILLS IN HTE

The value of an HTE qualification depends not only on its capacity to lead directly into a good job, but also on how it opens pathways to a learning and working career. This section looks at how higher technical education needs to address basic skills – numeracy, literacy and digital skills – not only because of their immediate value, but also because of their role as foundation skills for further learning.

THE INCLUSION OF BASIC SKILLS IN HTE PROGRAMMES AND QUALIFICATIONS

For all HTE qualifications, one challenge is how far to include transferable skills

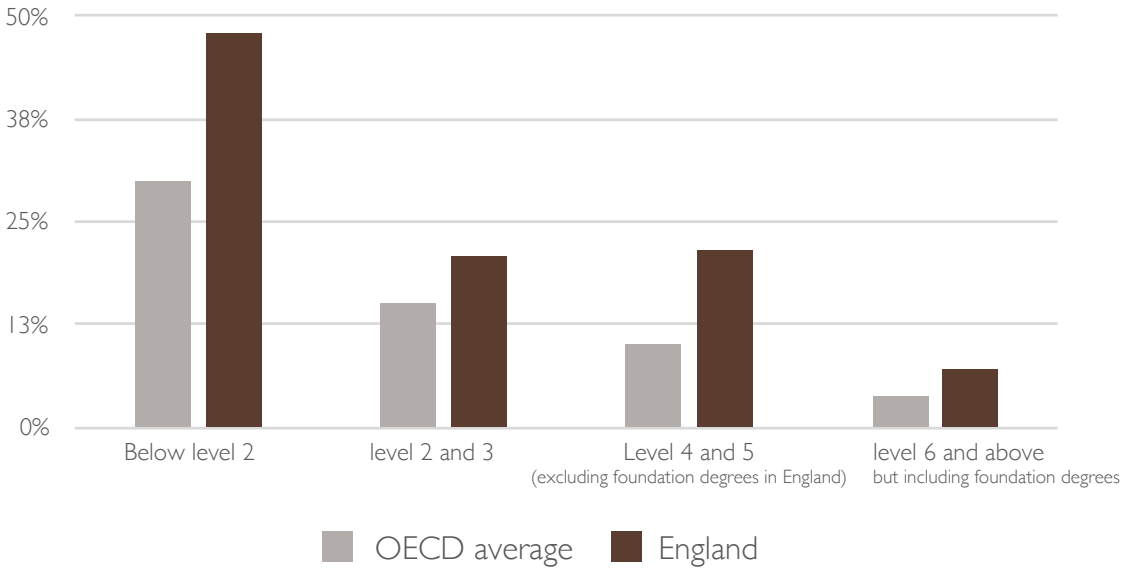
For all vocational programmes and qualifications, the issue arises of how far they should develop general and transferable knowledge and skills, as well as the occupation-specific requirements of the target occupation. At upper secondary level, many countries invest heavily in general education for those pursuing vocational programmes, including in apprenticeships. For example in Germany, apprentices receive 160 hours annually of general education (Hoeckel and Schwartz, 2010). But at the higher technical level, when students are older in all countries, and significantly older in some countries like England, less emphasis is given to general education. The issue of basic skills was considered in the recent consultation on HTE, and received some support from respondents to the consultation, but it is not intended to be a routine requirement for approved status (Wilson et al., 2020; DfE, 2020). However conformity with occupational standards will mean that the basic skills component of each standard will have to be reflected in approved HTE. In practice, this means that in most cases level 2 English and Maths will be a requirement.

Basic skills are a challenge in all countries, but in England more than others

Basic skills, notably literacy, numeracy and digital skills are a major challenge for all countries, and a particular challenge for England. The OECD 2012 Survey of Adult Skills found that one-third of teenagers in England have poor basic skills, meaning scores below level 2 for numeracy, literacy, or both. This result is two or even three times worse than in the best performing countries (Kuczera, Field and Windisch, 2016). Looking specifically at HTE, one in five graduates of level 4 and 5 programmes in England (excluding Foundation degrees) had low skills on the same definition, again more than in most OECD countries (see Figure 4.1). This reflects a wider pattern: at every qualification level, adults in England are more likely to have poorer basic skills than their counterparts at the same qualification level in most other OECD countries which participated in the Adult Skills Survey (see Kuczera, Field and Windisch, 2016, Table 1).

Figure 4.1 At every qualification level, graduates in England are more likely to have weak basic skills than the OECD average

Percentage of respondents aged 16-34, by highest level of qualification, who had either low numeracy or literacy skills or both (low skills = less than level 2 on the scale). OECD Survey of Adult Skills 2012



Source: OECD Survey of Adult Skills 2012. ISCED 1997, Adapted from Kuczera, Field and Windisch (2016).

Too many degree-level students have weak basic skills

A recent OECD study (Kuczera, Field and Windisch, 2016) reports a serious problem of weak basic skills among degree-level students and graduates in England. Moreover, for those graduates with low basic skills, the returns from higher technical education are similar to those from degree education. The report argues that while the challenge of weak basic skills is shared by the higher technical and university degree sectors, universities are not, either in terms of their mission or teaching workforce, well-adapted to remedying basic skills weaknesses. Accordingly, the report argues that students with weak basic skills should, rather than pursuing degree-level programmes, enter higher technical programmes which address basic skills challenges systematically. Moreover a systematic improvement in the basic skills of HTE graduates would, the report shows, improve the returns from HTE programmes. Basic skills may be developed in the context of technical education.

Given a need to enhance the basic skills elements of HTE – how should this be achieved? One possibility is separate programmes, as in the GCSE maths and English requirements which have been associated with lower-level technical qualifications. But adult students may not respond well to traditional classroom maths and English, particularly if they have performed badly in these contexts in the past. The alternative option is to teach numeracy and literacy and digital skills in the context of ordinary technical programmes. There is positive research evidence in support of such an approach (e.g. Jenkins, Zeidenberg and Kienzl, 2009; Kamil, 2003), but the approach is demanding. Stone et al., 2006 identified some keys to success, including sufficient time away from teachers' regular tasks, and effective partnerships between basic skills teachers on the one hand and technical instructors on the other. One successful model is the US I-BEST approach (see Box 4.3).

Box 4.3. Teaching basic skills in the context of higher technical education: a US example

The Integrated Basic Education and Skills Training (I-BEST) was developed to improve entry rates to higher technical programmes in Washington State. The programme blends teaching of literacy and numeracy skills with professional training, targeted at well-paid jobs. I-BEST programmes are available in every community and technical college in Washington State for those with weak basic skills. In the programme, a teacher of basic skills and a teacher of a technical subject share instruction in the same classroom with at least a 50% overlap of instructional time. This increases the cost of provision, and I-BEST students have to be funded at 1.75 times the normal rate. Evaluation shows that I-BEST students earn more credits and are more likely to complete a degree than comparable students not participating. Evidence on the link between participation in I-BEST and earnings is less conclusive.

Source: Kuczera, Bastianić and Field (2018).

BASIC SKILLS IN HTE: IMPLICATIONS FOR ENGLAND

Employers may not recognise basic skills

Employers value basic skills more highly in England than in many other countries, as evidenced by the wage returns from strong numeracy and literacy, after taking account of other factors such as education (Kuczera, Field and Windisch, 2016). Those employers who responded to the government HTE consultation also gave strong support to this. However employers, when developing programmes and qualifications, are normally focused on the immediate requirements of a target occupation, and so may not give much emphasis to basic skills. But the individual student has broader interests, as during a working career they will need to change jobs, while jobs themselves will change, and with them the skills requirements involved. Strong basic skills will provide them with the foundation necessary to learn and adapt. In England, given weak basic skills including among HTE students, there are particularly strong grounds for addressing basic skills needs in the context of HTE programmes.

RECOMMENDATION 8.

Reinforce Literacy, Numeracy and Digital Skills in HTE qualifications

Basic numeracy, literacy, and digital skills are key foundation skills that support further learning. Quality HTE programmes and qualifications should include measures to ensure that those qualified possess an adequate minimum of basic skills, and this may go beyond what the employers directly concerned may demand. Often, basic skills may be taught in the context of technical instruction, through carefully designed programmes and well-prepared instructors.

REFERENCES

Adecco (2019). https://www.economicmodelling.co.uk/2019/11/12/major-new-report-from-emsi-analysing-the-effects-of-automation-in-britain/.

Beffy, M., D. Fougère and A. Maurel (2009), Economie et Statistique, No. 422, Paris.

Berger, T. and C. Frey (2016), "Structural Transformation in the OECD: Digitalisation, Deindustrialisation and the Future of Work", No. 193, OECD Publishing, Paris, https://doi.org/10.1787/5jlr068802f7-en.

Boniface, R., Whalley, G. and Goodwin, D. (2018). http://www.gatsby.org.uk/uploads/education/reports/pdf/mapping-the-higher-technical-landscape-final-version.pdf.

Broek, S. (2019). CEDEFOP. https://www.cedefop.europa.eu/files/the_netherlands_cedefop_changing_nature_of_vet_-_case_study_0.pdf.

Carnevale, A.P.; Smith, N.; Melton, M.; Price, E.W. (2015). Centre on Education and the Workforce, Georgetown University. https://cew.georgetown.edu/cew-reports/workinglearners/.

CEDEFOP (2014). https://www.cedefop.europa.eu/en/publications-and-resources/publications/6123.

CEDEFOP (2015a). Luxembourg: Publications Office. Cedefop reference series; No 104. http://dx.doi.org/10.2801/008370.

CEDEFOP (2015b). Luxembourg: Publications Office. Cedefop working paper; no 26. http://dx.doi.org/10.2801/38475.

CEDEFOP (2016) . https://cumulus.cedefop.europa.eu/files/vetelib/2016/2016_validate_FR.pdf.

CEDEFOP (2019). https://www.cedefop.europa.eu/en/publications-and-resources/publications/5570

CEDEFOP and European Commission (2017). Synthesis report. Luxembourg: Publications Office. https://www.cedefop.europa.eu/en/events-and-projects/projects/validation-non-formal-and-informal-learning/european-inventory

Chronicle of Higher Education. 2012. https://chronicle-assets.s3.amazonaws.com/5/items/biz/pdf/Employers%20Survey.pdf

Commission on Adult Vocational Teaching and Learning (2013). https://www.excellencegateway.org.uk/content/eg5937

Condliffe, B., J. Quint, M. Visher, M. Bangser, S. Drohojowska, L. Saco and E. Nelson (2017). MDRC. https://www.mdrc.org/sites/default/files/Project-Based_Learning-LitRev_Final.pdf

Conférence Suisse des Ecoles supérieures (undated). Conférence Ecoles supérieures, Berne. https://www.c-es.ch/etudiants/le-profil-des-es

Conlon, G., and M. Halterbeck (2017). London Economics. https://www.gatsby.org.uk/uploads/education/reports/pdf/le-gatsby-assessing-the-economic-returns-to-level-4-and-5-stem-based-qualifications-final-07-06-2017.pdf

CooperGibson Research (2018). Research report. DfE. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/733434/Good_practice_in_Level_4_and_5_qualifications.pdf

Council for Adult and Experiential Learning (CAEL) (2010), CAEL, Washington DC. https://files.eric.ed.gov/fulltext/ED524753.pdf

Dundes, L., & Marx, J. (2006). Journal of College Student Retention: Research, Theory and Practice, 8(1), 107–120. https://www.researchgate.net/publication/238448990_Balancing_work_and_academics_in_college_Why_do_students_working_10_to_19_hours_per_week_excel

Departments of Business, Innovation and Skills and Department for Education, (2016). https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/536068/56259_Cm_9280_print.pdf.

DfE (2019b). https://consult.education.gov.uk/higher-technical-level-4-5-review-team/higher-technical-education/supporting_documents/Improving_higher_technical_education%20pdf.pdf

DfE (July 2020). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/899544/Higher_technical_education_government_response_to_the_consulation.pdf

DfE (undated) https://www.aoc.co.uk/sites/default/files/How%20to%20implement%20industry%20placements_5.pdf

Dunkel, T. and I. Le Mouillour (2009), in CEDEFOP (2009), Modernising Vocational Education and Training. Fourth Report on Vocational Training Research in Europe: Background Report, Volume 2, CEDEFOP, Luxembourg, https://www.cedefop.europa.eu/files/3050_II_en.pdf

Education and Skills Funding Agency (ESFA) (2017) updated 2018. https://www.gov.uk/guidance/work-placement-capacity-and-delivery-fund-principles-for-high-quality-work-placements

Espinoza, H. and S. Speckesser (2019). NIESR Discussion Paper No.502. Centre for Vocational Education Research. https://www.niesr.ac.uk/sites/default/files/publications/DP502_0.pdf

EQAVET (undated) https://www.eqavet.eu/EU-Quality-Assurance/Case-Studies/Describing-and-developing-VET-qualifications-using/Estonia-2

European Commission (2013). https://www.skillsforemployment.org/KSP/en/Details/?dn=WCMSTEST4_057845

European Commission (2016). https://publications.europa.eu/en/publication-detail/-/publication/cf35147d-0a60-11e7-8a35-01aa75ed71a1

European Commission (2017). https://publications.europa.eu/en/publication-detail/-/publication/8f010ea2-265b-11e7-ab65-01aa75ed71a1/language-en/format-PDF/source-63634090

Fazekas, M. and Field, S. (2013a). OECD Reviews of Vocational Education and Training, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264062665-en.

Fazekas, M. and Field, S. (2013b). OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, doi: http://dx.doi.org/10.1787/978926420214 6-en.

Federal Department for Economic Affairs, Education and Research (2017). https://www.sbfi.admin.ch/sbfi/en/home/services/publications/data-base-publications/vocational-and-professional-education-and-training-in-switzerland.html

Field, S. (2018a) A report to the Gatsby Foundation. Gatsby Foundation, London. https://www.gatsby.org.uk/uploads/education/final-apprenticeships-and-off-the-job-training-may-2018.pdf

Field, S. (2018b), . A report to the Gatsby Foundation. Gatsby Charitable Foundation, London. http://www.gatsby.org.uk/uploads/education/the-missing-middle-higher-technical-education-in-england.pdf

Field, S. and A. Guez (2018). A UNESCO report. UNESCO, Paris. http://unesdoc.unesco.org/images/0026/002659/265943e.pdf

Field, S., Álvarez-Galván, J-L., Hénard, F., Kis, V., Kuczera, M. and Musset, P. (2012). . OECD Reviews of Vocational Education and Training, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264173668-en

French Ministry of Higher Education, Research and Innovation, (undated) http://www.enseignementsup-recherche.gouv.fr/cid20183/brevet-de-technicien-superieur-b.t.s.html

Gallacher, Jim; Ingram, Robert and Reeve, Fiona (2009). Glasgow Caledonian University and The Open University. http://oro.open.ac.uk/27241/

Grasgreen, A. (2012). Inside Higher Ed. February 2012. https://www.insidehighered.com/news/2012/02/03/growth-short-term-internships-over-academic-breaks

Green, F., Felstead, A., Gallie, D., Inanc, H. and Jewson, N. (2013) , published by the Centre for Learning and Life Chances in Knowledge Economies and Societies at: https://www.llakes.ac.uk/sites/default/files/43.%20Green%20et%20al.pdf

Grelet, Y., C. Romani and J. Timoteo, Net. doc no.65, Céreq, 2010. http://www.cereq.fr/publications/Net.Doc/Les-etudiants-des-STS-et-des-IUT-Comparaison-des-conditions-d-orientation-des-parcours-de-formation-et-d-insertion

Hoeckel, K. and R. Schwartz (2010), , OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, https://doi.org/10.1787/9789264113800-en.

Hoftijzer, M., P. Stronkowski, and J. Rozenbaum. (2018). International Development in Focus. Washington, DC: World Bank. https://elibrary.worldbank.org/doi/abs/10.1596/978-1-4648-1322-1

Independent Panel (2019). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/805127/Review_of_post_18_education_and_funding.pdfIndependent Panel on Technical Education (2016). . http://www.gatsby.org.uk/uploads/education/reports/pdf/report-of-the-independent-panel-on-technical-education1.pdf

Inspection General des Affaires Sociales: France (2016). https://www.modernisation.gouv.fr/sites/default/files/epp/epp_vae_rapport.pdf

Institute for Apprenticeships and Technical Education (2020a). Accessed 22 July 2020. https://www.instituteforapprenticeships.org/apprenticeship-standards/?levelFrom=4&levelTo=5&includeApprovedForDelivery=true

Institute for Apprenticeships and Technical Education (2020b). Accessed 5 August 2020. https://www.instituteforapprenticeships.org/about/higher-technical-qualifications/

Jenkins, D., M. Zeidenberg and G. Kienzl (2009), https://ccrc.tc.columbia.edu/publications/i-best-multivariate-analysis.html

Kamil, M.L. (2003), , Alliance for Excellence in Education. https://all4ed.org/reports-factsheets/adolescents-and-literacy-reading-for-the-21st-century/

Karlson, N. and K. Persson (2014), http://ratio.se/publikationer/working-paper-no-258-effects-of-work-based-learning-on-companies-involved-in-vet-education/.

Kuczera, M. (2017), OECD Education Working Papers, No. 153, OECD Publishing, Paris, https://doi.org/10.1787/995fff01-en.

Kuczera, M. and Field, S. (2013), OECD Reviews of Vocational Education and Training, http://dx.doi.org/10.1787/97892642021 53-en

Kuczera, M. and S. Jeon (2019), OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, https://doi.org/10.1787/g2g9fac5-en.

Kuczera, M., S. Field and H. Windisch, H. (2016). OECD Publishing, Paris. http://www.oecd.org/edu/skills-beyond-school/building-skills-for-all-review-of-england.pdf

Kuczera, M., T. Bastianić and S. Field (2018), OECD Reviews of Vocational Education and Training, OECD Publishing, Paris, https://doi.org/10.1787/9789264302051-en.

Learning and Skills Improvement Service (LSIS), (2013). The summary report of the Commission on Adult Vocational Teaching and Learning. learning and Skills improvement Service. https://www.excellencegateway.org.uk/content/eg5937

Ministere de l'Education Nationale et de La Jeunesse: France (2018). https://cache.media.education.gouv.fr/file/2018/94/5/depp-ni-2018-18-30-Dispositif-academique-validation-acquis-12_700-diplomes-delivres-en-2017_1038945.pdf

Musset, P. and S. Field (2013), OECD Reviews of Vocational Education and Training, OECD Publishing, Paris. doi: http://dx.doi.org/10.1787/9789264203594-en

National Committee of Inquiry into Higher Education (NCIHE) (1997). Higher Education in the Learning Society. (the Dearing report). HMSO. London. http://www.educationengland.org.uk/documents/dearing1997/dearing1997.html

OECD publishing, Paris. doi OECD (2019), https://www.oecd-ilibrary.org/employment/oecd-employment-outlook-2019_9ee00155-en

O'Higgins, N. and L. Pinedo (2018) ILO Employment Working Paper No. 241. https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_637362/lang--en/index.htm

Quintini, G. (2015), OECD Social, Employment and Migration Working Papers, No. 169, OECD Publishing, Paris, https://doi.org/10.1787/5jrw4bz6hl43-en.

Sandberg, F. (2016). CEDEFOP. https://cumulus.cedefop.europa.eu/files/vetelib/2016/2016_validate_SE.pdf

Singapore Ministry of Education (2018). https://www.moe.gov.sg/docs/default-source/document/education/post-secondary/files/post-secondary-brochure.pdf

Skills Development Scotland and Centre for Workbased Learning, (2018). https://www.skillsdevelopmentscotland.co.uk/media/44684/skills-40_a-skills-model.pdf

Stanwick, J. (2009). In R. Maclean and D. Wilson (eds.), International Handbook of Education for the Changing World of Work, DOI 10.1007/978-1-4020-5281-1 chapter XVI.3, Springer.

Stone, J.R., et al. (2006), National Research Center for Career and Technical Education, Columbus, Ohio, https://files.eric.ed.gov/fulltext/ED497344.pdf

Swedish National Agency for Higher Vocational Education (undated). https://www.myh.se/In-English/Swedish-National-Agency-for-Higher-Vocational-Education-/

Sweet, R., (2014). European Training Foundation, ETF, Turin, 2014. https://www.etf.europa.eu/en/publications-and-resources/publications/work-based-learning-handbook-policy-makers-and-social

Swiss Federal Department for Economic Affairs, Education and Research (2017). https://issuu.com/sbfi_sefri_seri/docs/fakten_zahlen_bb2019_en

Tucker, M. (2016). Center on International Education Benchmarking. http://ncee.org/wp-content/uploads/2018/01/THePhoenix2016.pdf

U.S. Department of Education (2013), Prepared for the OECD Post-secondary Vocational Education and Training "Skills Beyond School" Study, Washington, https://nces.ed.gov/surveys/ctes/pdf/PostsecVET.pdf

UCAS (2017). https://www.ucas.com/file/110596/download?token=aVG758ND

UK Standing Committee for Quality Assessment. (2018). https://www.qaa.ac.uk/quality-code/advice-and-guidance/work-based-learning

UKCES (2014). IFF Research – UKCES. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/373769/14.11.11._EPS_2014_-_Main_Report_full_V2.pdf

Wettstein, E., Schmid, E. and P. Gonon. (2017). (VPET): Forms, System, Stakeholders. hep verlag. Kindle Edition.

Wheelahan, L, Miller, P., Newton, D, Dennis, N, Firth, J., Pascoe, S & Veenker, P (2003), report to Australian Qualifications Framework Advisory Board. Southern Cross Business School. https://mafiadoc.com/recognition-of-prior-learning-policy-and-epublicationsscu_59acb5651723ddb8c56150d1.html

Wilson, P., Crosswaite, K., Murphy, L. and S. Elliott. (2020). Higher technical education consultation – analysis. Research report. York Consulting. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/903521/Higher_technical_education_consultation_analysis_York_Consulting.pdf

Wolter, S. C. and E. Joho. (2018). Bertelsmann Stiftung. https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/LL_cost_benefit_study_England.pdf

Wolter, S. C., and S. Mühlemann (2015). Bertelsmann Stiftung. https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/LL_GP_cost_benefit_study_EN_FINAL1.pdf

Zaidi, A., S. Beadle and A. Hannah, (2019). ICF Consulting – Department for Education. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/782160/L4-5_market_study.pdf

The Gatsby Charitable Foundation
The Peak, 5 Wilton Road, London SW1V 1AP
T +44 (0)20 7410 0330 www.gatsby.org.uk
Registered Charity number 251988