Centre for Research in Educational Underachievement

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The Assessment of Vocational Education and Training Qualifications:

a review of European policy and practice

Stephen Bloomer, Noel Purdy, Ken Gibson, Karen Orr

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Table of Contents

Executive Summary

In the last decade a significant body of literature was generated at the national policy level, much of which was informed by a desire for systemic reform and simplification in the vocational and higher education (HE) landscape. In England, recent developments include the Department of Education's Review of post-16 qualifications at level 3 in England (2021), and the Skills for Jobs: Lifelong Learning for Opportunity and Growth White Paper (2021). Currently the Department is consulting on its Review of post-16 qualifications at level 2 and below. In Scotland the Stobart Report (OECD, 2021) reviewed upper-secondary education student assessment in Scotland in comparative perspective, whilst the Muir Report (2022) situated school education in its broadest context, aligning health and wellbeing with outcomes including vocational qualifications.

In Northern Ireland the recent policy landscape includes the Skills Strategy Northern Ireland: Assessment and Recommendations (2020) from the Department for the Economy (DfE) and the Organisation for Economic Co-operation and Development (OECD), which focused on creating a culture of lifelong learning and transforming workplaces to make better use of skills. The DfE's Further Education Review will highlight the role of FE colleges in producing skilled workers for the economy, informed by DfE's 10X Economic Vision and Skills Strategies. In Wales, Qualifications Wales is undertaking a series of sectoral reviews for vocational qualifications focussed on the skills required by employers. In Ireland, government Green papers have addressed the Assessment of Learners and Learning (2018), informed by the work of CEDEFOP[1], and the Qualifications System (2020) which assessed the National Framework of Qualifications.

A review of academic and policy literature highlights a range of key areas of debate: the role of BTECs in widening access, the tension between widening access and educational attainment in HE, the relative equivalence of BTECs and A-Levels, barriers to recruitment and retention of BTEC students in HE, the role of, and challenges for, universities in facilitating the entry and retention of students, comparative student performance in HE, the tensions between vocational and academic qualification pathways, and employment outcomes. The current educational landscape in England reflects the recent introduction of T Levels alongside A Levels.

At assessment level the policy debate has addressed the relative (de) merits of the BTEC assessment system; advocates defending the 'older style' BTEC system in terms of the reliability of internal assessment, progression and employability; critics viewing BTECs as over-valued, in need of re-evaluation, and requiring external assessment to both counter grade inflation, and ensure equivalence with A levels. From 2017 the Department for Education has required external assessment for at least 40% of an Applied General qualification and at least 30% of a Tech Level qualification in order for results to be recognised in performance tables. Evidence suggests that some colleges have been reluctant to switch to the 'newer style' BTECs.

Two European 'Vocational, Education and Training' (VET) models are illustrative when assessing European comparators: the dual-track VET approach found in Germany, Switzerland, the Netherlands, Denmark and the Basque Country; and the school-based model evident in the UK, Ireland and Finland. Dual VET systems combine two learning venues – the company and the vocational school – with stipulated time resources defined for each venue. The dual VET system aims to optimise opportunities to move between academic and vocational studies, and to facilitate the transition from VET to HE.

[1] CEDEFOP is one of the EU's decentralised agencies supporting the development of European vocational education and training (VET) policies: see https://www.cedefop.europa.eu/en/about-cedefop

Significant questions remain around the transferability of particular models which tend to reflect national and/or local conditions.

Aims of the Review

This literature review aims to assess policy developments in vocational education and training, to provide understanding and insight into assessment methodologies used for vocational qualifications and their perceived value. The broad requirements for the review require that it addresses the following areas:

- Different types of assessment and differences in how they are used in vocational qualifications (both levels and products)
- International best practice for assessment in vocational qualifications
- Views on the attractiveness and value of each assessment type
- Benefits or challenges of particular assessment types on progression and preparedness for higher education
- Views on the value or usefulness of different assessment types to determine occupational competence
- Views on the usefulness of different assessment methods to meet employer need and provide confidence in vocational qualifications.

Structure and Overview of the Review

Section 1 considers the development of the policy debate at the national level which includes the four home nations and Ireland. England, which is the main focus in the national level section, has generated a considerable body of literature and policy since the Wolf Report (2011). The review addresses the Richard Review of apprenticeships (2012), the UK Commission for Employment and Skills Review of Adult qualifications in England (UKCES, 2013), the Sainsbury Review of technical education (2016), the Augur Review post-18 education and funding (2019), the Department of Education Review of post-16 qualifications at level 3 and below in England (2019), the Department of Education Review of the Level 4-5 qualification and provider market (2019), the Department of Education Review of post-16 qualifications at level 3 and below in England (2020), and the Department of Education's Skills for Jobs White Paper (2021). In 2022, in a letter to OFQUAL, the Secretary of State for Education Nadhim Zahawi MP outlined current and future direction for the Department of Education. Currently the Department of Education is consulting on its review of post-16 qualifications at Level 2 and below. The final section illustrates best practice from international comparators including Germany, the Netherlands and Switzerland.

In Northern Ireland the debate around skills and rebalancing the economy has been the focus of policy over an extended period of time, from the Department of Employment and Learning (DEL) *Success Through Skills: Transforming Futures* report in 2011. More recently, and tying in to the international dimension, and to support the Northern Ireland Skills Strategy, the Organisation for Economic Co-operation and Development (OECD, 2020) produced recommendations focused on creating a culture of lifelong learning, transforming workplaces to make better use of skills, and strengthening the

governance of skills policies. In turn, the Department for the Economy (DfE) published the *Skills Strategy for Northern Ireland – Skills for a 10x Economy* report, which builds on the OECD's 'Skills Strategy Northern Ireland' report[2], to highlight the key role of Northern Ireland's FE sector in addressing the skills deficit. In 2020 DfE began a Further Education Review (to complete mid-2022), which will highlight the role of FE colleges in producing skilled workers for the economy, and links to the department's new 10X Economic Vision and the draft 10X Skills Strategy.

In Scotland, the last two years have seen numerous reports produced which address the vocational qualifications landscape. In 2021 the Stobart Report (OECD) undertook a comparative review including case studies from New Zealand, Australia, Ireland and France to inform curriculum reform for vocational qualifications. In 2021 the Scottish Audit Office[3] addressed vocational education, followed by the Scottish Government's response to the Stobart Report.[4] This year the Muir Report (March 2022[5]), emphasised the need to improve children's and young people's health and wellbeing and support wider outcomes such as vocational qualifications. In Wales the Donaldson Report (2015) drew on an earlier OECD report[6] to generate a programme of major curriculum reform, followed in 2016 by the Qualifications Wales Vocational Qualifications Strategy which promoted the needs of employers and the role of BTECs for all age groups (14-19). Qualifications Wales is currently undertaking a series of sector reviews of vocational qualifications,[7] designed to focus on qualifications within particular employment sectors. In Ireland the 2018 Green Paper on Assessment of Learners and Learning drew on a review by the European Centre for the Development of Vocational Training (CEDEFOP) certification guidelines in relation to VET policies, assessment, verification and grading, and quality assurance within a European framework. A further Green Paper on the Qualifications System (2020) reviewed the National Framework of Qualifications (NFQ).

Section 2 addresses the literature in the academic and policy arena to highlight a number of key areas of debate: the role of BTECs in widening access, the tension between widening access and educational attainment, the comparability of BTECs and A-Levels, progression barriers to higher education (HE), recruitment and retention issues in HE, the role of, and challenges for, universities in facilitating the entry and retention of students, comparative student performance in HE, vocational and academic qualification pathways, and employment outcomes. The current debate revolves around the new educational landscape defined by A levels and T Levels. Section 3 addresses the assessment level and provides greater focus on the approach to assessment, including the perspectives of the key stakeholders in the vocational education sector, including Pearson, OFQUAL and UCAS, and academic commentary.

Section 4 reviews comparator VET systems in the international context. Elements of international best practice have influenced the UK and Ireland in recent years. At the international level three main sources can be drawn upon to inform country level comparisons – the Eurydice National Education Systems[8] established by the European Commission, the Organisation for Economic Co-operation and

[2] OECD/DfE (2020) OECD Skills Strategy Northern Ireland: Assessment and Recommendations. Available from: http://www.oecd.org/publications/oecd-skills-strategy-northern-ireland-united-kingdom-1857c8af-en.htm
[3] Available at: https://www.audit-scotland.gov.uk/uploads/docs/report/2021/nr_210323_education_outcomes.pdf
[4] Available at: https://www.gov.scot/publications/scotlands-curriculum-future-implementation-framework-oecds-2021-review-curriculum-excellence/documents/
[5] Available at: https://www.gov.scot/publications/putting-learners-centre-towards-future-vision-scottish-education/documents/
[6] OECD (2013) *Synergies for Better Learning: An International Perspective on Evaluation and Assessment* OECD. Paris. See also OECD (2014) *Improving Schools in Wales: An OECD Perspective.* OECD. Paris.
[7] See https://www.qualificationswales.org/english/qualifications/vocational-qualifications/sector-reviews/
[8] See https://eacea.ec.europa.eu/national-policies/eurydice/national-description_en

Development[9] (OECD), and CEDEFOP – the European Centre for the Development of Vocational Training[10]. Drawing on these three sources, the report provides an overview of the VET systems from the comparator countries outlined above. A Vocational Education and Training (VET) model typology from EdventureCo is also reviewed which includes the Dual VET model (Germany, Switzerland and Denmark, plus Austria) and the School-Based VET model (Finland, plus Poland, Slovenia and Lithuania[11]). Finally, a brief review of material on the German model is provided which assesses some of the main features of the German model and its potential transferability. The review notes that in the UK and Ireland context, the Netherlands, Germany and Switzerland tend to be drawn upon as international comparators and best practice.

In Section 5 an overview of the main findings from Sections 1-4 is presented, bringing together the emergent themes from the national level review of vocational qualifications, the academic and policy literature, the debate around BTEC assessment, and the comparator European VET models.

Two relevant factors are noted. The volume of material reviewed, and the short timeframe available for this assignment necessarily means that this report is a preliminary overview of the available literature. A more complete review and synthesis of the literature requires further research.

The section that follows begins the review by addressing the development of the national policy debate within the UK, incorporating the UK's four home nations, and Ireland, followed by an overview of the related policy and academic literature.

[9] https://www.oecd.org/education/innovation-education/vet.htm
[10] See https://www.cedefop.europa.eu/en/themes/vet-knowledge-centre
[11] CEDEFOP defines the UK's VET system as 'predominantly school-based' . More information is available at: https://www.cedefop.europa.eu/files/4168_en_uk.pdf

Section 1: National Level Overview – Major Legislative Developments in Relation to Vocational Education and Training in the UK and Ireland

Introduction

In England, there is a significant body of literature, dating from the Wolf Report in 2011 which addressed the vocational and technical education landscape, and addressed two key concepts – that of the value of external assessment, and the need to simplify the education landscape. The work includes, for example, the Richard Review of apprenticeships (2012), the UKCES (2013) Review of Adult qualifications in England, the Sainsbury Review (2016 – the Independent Panel on Technical Education) which produced the 2016 Department of Business Innovation (BIS) Post-16 Skills Plan, and the 2017 Department for Education report - *Technical and applied qualifications for 14 to 19 year olds* – which brought in the 40% external assessment requirement. More recent work includes the Augur Review (2019), the Department of Education Review of post-16 qualifications at level 3 and below in England (2019), the Department of Education *Review of the Level 4-5 qualification and provider market* (2019), the Department of Education *Review of post-16 qualifications at level 3 and below in England - Government consultation response* (2020), the Department of Education - *Review of post-16 qualifications at level 3 in England - Policy Statement* (2021), and the Department of Education - Skills for Jobs: Lifelong Learning for Opportunity and Growth White Paper (2021). This year the letter to OFQUAL from Secretary of State for Education Nadhim Zahawi MP (2022) outlined current and future direction for the department. In 2022 the Department of Education is consulting on its Review of post-16 qualifications at level 2 and below in England. More generally, government publications have made reference to international examples of good practice, including Germany and the Netherlands (see Section 4).

In Northern Ireland the debate around skills and rebalancing the economy has been the focus of policy over an extended period of time, including the Department of Employment and Learning (DEL) *Success Through Skills – Transforming Futures* (2011) which was allied to the Skills Strategy, and DEL's *Structured to Deliver Success* report (2015) which highlighted links to the Programme for Government and the employer emphasis on a skilled workforce. DEL also produced *Generating our Success: The Northern Ireland Strategy for Youth Training* (2015) which specifically addressed Level 2 qualifications, in the context of developing VET systems in Europe and across the world, with a focus both on the transition from training and education in employment and the transition to higher education, both recognising the importance of employer input. More recently to support the NI Skills Strategy, the OECD (2020) produced recommendations which focused on reducing skill imbalances, creating a culture of lifelong learning, transforming workplaces to make better use of skills, and strengthening the governance of skills policies. In turn, the Department for the Economy (DfE) published the *Skills Strategy for Northern Ireland – Skills for a 10x Economy* report[12], which builds on the OECD's *Skills Strategy Northern Ireland* report[13], highlighting the key role of Northern Ireland's FE sector in addressing the skills deficit. Also in 2021 the DfE announced an investment of £180million in the NI Traineeship, a new vocational education and training programme for people aged 16 and over, developed in partnership with employers, to be delivered by the six further education colleges. The DfE Further Education Review (to complete mid-2022) will highlight the role of FE colleges in producing

[12] Department for the Economy (2021) *Skills Strategy for Northern Ireland – Skills for a 10x economy*. Available at: https://www.economy-ni.gov.uk/consultations/skills-strategy-northern-ireland-skills-10x-economy

[13] OECD/DfE (2020) OECD Skills Strategy Northern Ireland: Assessment and Recommendations. Available from: http://www.oecd.org/publications/oecd-skills-strategy-northern-ireland-united-kingdom-1857c8af-en.htm

skilled workers for the economy, with links to the department's new *10X Economic Vision and the draft 10X Skills Strategy*.

In just the last two years in Scotland, several reports have addressed the vocational qualifications landscape. In 2021 the Stobart Report (OECD) undertook a comparative review[14] to argue that the curriculum should be expanded to include vocational qualifications. The report built on an earlier OECD report in 2020[15] which addressed the need to strengthen the Scottish apprenticeship system. In 2021 the Scottish Audit Office[16] addressed vocational education, and the Scottish Government published its response to the Stobart Report[17]. This year the Muir Report – *Putting Learners at the Centre: Towards a Future Vision for Scottish Education* (March 2022[18]) emphasised the need to improve children's and young people's health and wellbeing and support wider outcomes, including vocational qualifications.

In Wales the Donaldson Report (2015) drew on an earlier OECD report[19] to generate a programme of major curriculum reform. The report outlined the value for 'clear external reference points' in terms of expected levels of student performance across different levels of education. This was followed in 2016 by the Qualifications Wales - Vocational Qualifications Strategy which gave prominence to the needs of employers and the role of BTECs for all age groups from age 14-19. In the Sector Reviews of vocational qualifications,[20] Qualifications Wales noted the value of vocational qualifications reflecting the skills employers need. The sector reviews are designed to focus on vocational qualifications within particular employment sectors.

In Ireland, which operates within a European Union context, the government produced a Green paper on Assessment of Learners and Learning – which included a review of CEDEFOP certification guidelines in relation to VET policies, assessment, verification and grading and quality assurance within a European framework. A further Green Paper on the Qualifications System (2020) reviewed the National Framework of Qualifications (NFQ).

England

In England, there is a considerable and growing body of evidence at the policy level in relation to vocational education reform.

- **Wolf Report (2011)** concluded that many of England's 14-19 year olds failed to progress successfully into either secure employment or higher-level education and training, and noted the 'commonly held view that key skills are in no real sense equivalent to the GCSE grades with which they enjoyed and enjoy formal equivalence' (p.84). To ensure standards, Wolf recommended 'a strong element of external assessment. *This need not, and indeed should not, mean assessment entirely on the basis of examinations,* which in the case of vocational awards will often be quite inappropriate. But we know that, without regular external referencing, assessment standards in

[14] Including case studies from New Zealand, Australia, Ireland and France.
[15] OECD (2020) Review of the Apprenticeship System in Scotland – Strengthening Skills in Scotland. Available at: https://www.oecd.org/skills/centre-for-skills/Strengthening_Skills_in_Scotland.pdf
[16] Available at: https://www.audit-scotland.gov.uk/uploads/docs/report/2021/nr_210323_education_outcomes.pdf
[17] Available at: https://www.gov.scot/publications/scotlands-curriculum-future-implementation-framework-oecds-2021-review-curriculum-excellence/documents/
[18] Available at: https://www.gov.scot/publications/putting-learners-centre-towards-future-vision-scottish-education/documents/
[19] OECD (2013) *Synergies for Better Learning: An International Perspective on Evaluation and Assessment* OECD. Paris. See also OECD (2014) *Improving Schools in Wales: An OECD Perspective.* OECD. Paris.
[20] See https://www.qualificationswales.org/english/qualifications/vocational-qualifications/sector-reviews/

any subject invariably diverge across institutions and assessors' (p.112). The report argued that external assessment would safeguard against downward pressure on standards. Wolf recommended limiting vocational studies to 20% of a pupil's timetable.

- **Richard Review of Apprenticeships (2012)** set out a clear vision for a system that is more rigorous and more responsive to employers' needs. Recommendations aimed at process simplification and on placing employers in the driving seat, and that the testing and validation process should be independent and supported by industry. The review referred to Germany and Switzerland as cases of good practice. Richard stipulated the need for independent and external verification to ensure transparency and trustworthiness of qualifications.
- **Whitehead Review (2013)** reported that the complexity in the further education system produced technical qualifications of inferior quality, with inadequate employer involvement. The review recommended much greater employer involvement in all stages from the development through to the delivery and assessment of vocational qualifications. In line with the Richard Review, Whitehead argued that assessing vocational qualifications for adults 'should be subject to controls that are independent of the learning provider, either by using internal assessments with effective systems of external verification or by using external assessment' (p.36).
- **UK Commission for Employment and Skills (UKCES, 2013)** *Review of Adult qualifications in England* built on the Richard Review of Apprenticeships and the Wolf Review of Vocational Education in relation to the importance of robust, innovative and flexible standards and assessment in vocational education and training. Recommendation 6 stated that Ofqual, Ofsted and the Skills Funding Agency should ensure that arrangements for regulation, inspection and funding provide appropriate incentives and do not inhibit training providers and awarding organisations from using technology in the delivery and assessment of vocational qualifications.
- **Department of Business, Innovation and Skills (BIS) and Department of Education (2015)** - *English Apprenticeships: Our 2020 Vision* outlined government plans to increase the quality and quantity of apprenticeships to reach three million apprenticeship starts by 2020 and a focus on employers.
- **Department of Education (2015)** - *Technical awards for 14 to 16 year olds 2017 and 2018 performance tables: technical guidance for awarding organisations* - Updated March 2015. The document defines Technical Awards as 'broad, high-quality level 1 and level 2 qualifications that equip students with applied knowledge and associated practical skills, not usually acquired through general education. They focus on the applied study of an industry sector or occupational area, or the acquisition of practical and technical skills. Technical Awards will fulfil entry requirements for both academic and vocational study post-16, alongside GCSEs. Qualifications that focus on a particular occupation and, as a result, could limit a 16 year old's progression opportunities, will not be approved as Technical Awards' (p.4). The report built on the Wolf (2011) recommendation that 14-16 year olds were spending too much time studying inferior quality and/or excessively large vocational qualifications at the expense of their general education. Further, Wolf recommended that vocational studies should be limited to 20% of a pupil's timetable; key stage 4 curricula should include practical as well as academic qualifications; and practical qualifications should meet the same overarching standards as academic ones. The document determines various levels of study as follows:

  Key stage 4: Technical Awards

  At key stage 4, students are encouraged to take five academic GCSEs from the list of EBacc subjects. Up to three Technical Awards will count towards Progress 8 and Attainment 8 performance measures in the schools performance tables.

16-19: Level 2 and 3 technical and applied qualifications

At 16, students may choose to study via academic, vocational or combined routes. In addition to academic qualifications, there are three vocational options at key stage 5:

- Applied General qualifications – rigorous advanced (level 3) qualifications that equip students with transferable knowledge and skills. They are for post-16 students who wish to continue their education through applied learning. They fulfil entry requirements for a range of higher education courses, either by meeting entry requirements in their own right or being accepted alongside and adding value to other qualifications at the same level.
    - Tech Levels – level 3 qualifications, on a par with A levels and recognised by employers. They are for post-16 students wishing to specialise in a specific industry, occupation or occupational group. They equip a student with specialist knowledge and skills, enabling entry to an Apprenticeship or other employment, or progression to a related higher education course. In some cases, these qualifications provide a 'licence to practise' or exemption from professional exams. Tech Levels are one of three components of the new Technical Baccalaureate (TechBacc) performance table measure, which was being introduced for courses starting in September 2014 and reported in performance tables from 2016.
    - Technical Certificates – intermediate (level 2) qualifications for post-16 students wishing to specialise in a specific industry, occupation or occupational group. They cover occupations where employers recognise entry at level 2 or where a level 2 qualification is required before students can progress to a Tech Level. They equip students with specialist knowledge and skills, enabling entry to employment, an Apprenticeship or progression to a Tech Level. In some cases, they provide a 'licence to practise' or exemption from professional exams.
- External assessment - a significant proportion of the content of a qualification must be subject to external assessment, to offer a comparable level of challenge to GCSEs. External assessment is defined as a 'form of assessment in which question papers, assignments and tasks are specified by the awarding organisation, then taken under specified conditions (including details of supervision and duration) and marking or assessment judgements are made by the awarding organisation. It does not include moderation or verification of centre-based assessment undertaken by an awarding organisation' (p.18).
- To be recognised in the 2018 performance tables, for all new and redeveloped qualifications, the proportion of the qualification's content that is externally assessed and the associated contribution to the overall grade, must be at least 40%.

Table 1: Percentage of external assessment required by the DfE (2015a; 2015b)

Qualification	Technical Award	Technical Certificate	Tech Level	Applied General
External assessment (%)	25 (2017 tables) 40 (2018 tables)	25	30	40

(Source: Vitello and Williamson, 2017, p.537)

- **Sainsbury Review (2016)** – the Independent Panel on Technical Education emphasised the need for simplification at Levels 4 and 5 and promoted the need for the reform of technical education provision at these levels. There was an emphasis on simplifying the landscape. The review proposed designing qualifications against requirements defined by panels of industry

professionals (convened by the Institute for Apprenticeships) – and ensuring that funding was only made available for qualifications which met independently-set standards that reflected industry need. Sainsbury highlighted the need for clear progression routes from levels 4 and 5 to higher levels of training i.e. to degree apprenticeships and other higher education at levels 6 and 7. Internationally the review drew on Germany, Denmark, Netherlands, Norway and Singapore.

- **Departments of Business, Innovation and Skills (BIS) and Education (2016)** - *Post-16 Skills Plan*. This report commended and accepted the work of the expert panel chaired by Lord Sainsbury which provided advice on reforms to the system. Employers were to be central to the system and take the lead in setting the standards and defining requirements in skilled employment. In line with Sainsbury, the report aimed to streamline the system and create a common framework of 15 routes across all technical education. The routes would group occupations together to reflect shared training requirements – effectively simplifying the crowded landscape of overlapping qualifications. The key aim was to provide high-quality technical qualifications which matched employer-set standards. The new, employer-led Institute for Apprenticeships was to regulate quality across apprenticeships and all aspects of technical education. Routes were to begin with high-quality, two-year, college-based programmes, aligned to apprenticeships. A register of technical qualifications at levels 4 and 5 which meet national standard was to be developed.
- **Higher Education Policy Institute** (**Kelly, 2017)** - *Reforming BTECs: Applied General qualifications as a route to higher education*. Kelly noted that BTEC students were more likely to progress to less selective, lower-tariff higher education institutions, with lower levels of BTEC students accessing Russell Group universities. Kelly also highlighted issues in relation to lower retention rates and lower achievement levels for BTEC students. The report noted that if reforms pushed BTECs further along the path of 'academicisation' they would entrench the idea that they are second best and primarily for the academically less able. The need for universities to adapt to and facilitate BTEC students was reaffirmed. On grade inflation, Kelly supported the need for greater external moderation, noting that the 'rising number of students receiving a Distinction in their BTECs raises questions about the way they are assessed' (p.24).
- **Department for Education** (2017) - *Technical and applied qualifications for 14 to 19 year olds - Key stage 4 and 16 to 18 performance tables from 2020: technical guidance for awarding organisations*. This reaffirmed the following stipulation – 'The proportion of the qualification's content that is externally assessed, and the associated contribution to the overall grade, must be at least 40%. A qualification that was first approved for the 2017 tables on the basis of 25% external assessment, and that has not been amended, is not required to meet the 40% figure' (p.15). In setting a minimum expectation, DfE expected awarding organisations to ensure their chosen methods of assessment were the most suitable, rigorous, and appropriate for their qualifications. Where a greater proportion of external assessment was valid i.e. it represented a more robust approach, DfE expected qualifications to exceed the minimum requirement.
- **Department of Education (2018)** - *Review of Level 4 and 5 Education- Interim Evidence Overview*. Confirming that employers recognised the need for Level 4-5 skills, the report noted that employers faced challenges in identifying provision that consistently best aligns with their skills needs. The qualifications landscape remained complex. The best quality provision was linked to working with employers on development and delivery to ensure labour market relevance. The report noted how, in terms of Level 4-5 provision, 'the market varies depending on whether L4-5 study is focussed on progression to further study, or progression within employment' (p.17).
- **Department of Education (2018)** - *Good practice in Level 4 and 5 qualifications*. The report noted that the take up of level 4 and 5 qualifications has been in decline to the point where they accounted for less than 1% of all qualifications being funded through the adult skills system. The report highlighted the lack of clear information about the range of vocational qualifications,

training routes and progression pathways. Emphasis was placed on the need to be employer-led on the design and delivery of qualifications. Depending on the sector, level 4 and 5 qualifications were either regarded primarily as (1) a 'stepping stone' to higher level learning, rather than into employment or (2) as a learning goal that enabled career progression. On assessment, the report suggested customisation and flexibility as significant factors in the successful delivery and assessment of level 4 and 5 qualifications, ensuring they can be tailored to regional or local employer needs, and to the needs of individual learners.

- **Higher Education Funding Council for England (HEFCE, 2018)** - *Vocational degrees and employment outcomes.* Key point 10 - Analysing the relationship between how vocational a subject is and employment outcomes shows that graduates in more vocational subjects are more likely to be employed in highly skilled roles. This holds even when controlling for individual and institutional characteristics, and when graduates in medicine and dentistry, veterinary sciences and subjects allied to medicine are excluded. HE qualifications can be both highly vocational and highly academic - the characteristics are not mutually exclusive.
- **Higher Education and Policy Institute (HEPI, 2018)** - *Filling in the biggest skills gap: Increasing learning at Levels 4 and 5.* The report highlighted that '… few things are as clear in education policy as the need to reverse the decline in Level 4 and 5 provision' (p.6) and suggested that the decline in numbers in levels 4 and 5 in England was due to the decline in numbers at lower levels. The number of young learners not proceeding from Level 2 to Level 3 was 36.4% and a further 20.9% of all learners did not progress from Level 3, i.e. 57% of young learners do not progress to Level 4 or above. The solution therefore lay in a strong further education offer to enhance Levels 2 and 3 programmes. The most significant declines in Levels 4 and 5 study had been among mature and part-time learners.
- **Department of Education (2019)** *Review of post-16 qualifications at level 3 and below in England: the current system and the case for change*. The rationale for this review built on the findings of the Wolf Review in 2011 and the Report of the Independent Panel on Technical Education ('Sainsbury Review') in 2016. Following these reports, significant action improved the quality of qualifications post-16, including the development of new criteria for inclusion in performance tables and the development of new T Levels. The report concluded that too many qualifications were poorly understood, weakening their currency and value for individuals, employers and the economy as whole. Progression routes remained unclear. Many providers had not adopted the redeveloped qualifications, the report suggesting that this is due to being more familiar with the existing content or because they believe their students will cope less well with the mandatory external assessment in redeveloped qualifications.
- **National Foundation for Educational Research (NFER, 2019)** – *Review of the Value of Vocational Qualifications.* The research covered in this literature review broadly reinforced the findings of the previous NFER study (2015) in noting that there is value for all stakeholders when young people complete vocational qualifications, regardless of the level of study. The research highlighted the positive impact of attainment on the earnings potential or learners – asserting that it pays to take a VTQ - up to Level 3 the financial benefit is equivalent to the academic alternative (i.e. A Levels). In turn, VTQs were growing in importance as a route into higher education, with the use of qualifications including Pearson's BTECs and OCR's Cambridge Technicals (either as a standalone two-year full- time qualification, or increasingly in combination with A Levels proving to be a popular preparation for university. With the introduction of the T level, the report noted the importance for students to have opportunities to combine technical and academic study.
- **Department of Education (2019)** - *Students and qualifications at level 3 and below in England*. 'Pre-existing' qualifications (AS and A Levels) represent most enrolments at level 3 (55%), other Level 3 qualifications represent (25%), and there are over four times as many enrolments on 'pre-

existing' Applied General Qualifications (AGQs) and Tech Levels (17%) as there are on the redeveloped AGQs and Tech Levels (4%).

- **Department of Education (2019)** - *Review of the Level 4-5 qualification and provider market*. The research focused on L4-5 programmes, not delivered as part of an apprenticeship framework or standard. It drew on data for L4-5 provision approved for public funding delivered in 2016/17. The L4-5 market had 3,368 different L4-5 qualifications available to learners in 2016/17, of which 735 were developed by eight independent Awarding Organisations, 2,633 were developed by HEIs and delivered by FE and HE providers. The L4-5 market remained relatively small in comparison to that of the HEIs and FE providers. In 2016/17 there were 111,420 learners studying an AO-accredited L4-5 qualification, comprising 2% of all vocational qualifications awarded. In HE, there were 75,632 learners studying L4-5 qualifications in 2016/17, which accounted for 3% of all HE learners. The estimated overall market value was around £700m-850m a year, distributed evenly between FE and HE providers.
- **Augur Review (2019)** – *Independent Panel report to the Review of Post-18 Education and Funding*. Augur reported that at school level, there had been significant improvements in recent decades, with Level 2 qualifications – which within the academic/school based route is equivalent to 5 'good' (grades A* - C or Level 4 – 9) GCSEs - widely considered the minimum benchmark for employability in a range of productive occupations. Between 2005 and 2017 the percentage of the cohort achieving Level 2 by age 19 rose from 67% to 84% and the percentage achieving Level 2 with English and Maths rose from 46% to 69%.[21] There had also been an increase in the proportion of young people reaching Level 3 by age 19: up from 43% in 2005 to 58% in 2017.[22] For Augur, key to the increase was the rise in the number of people attending university with Level 3 BTEC diplomas, a more practically-taught alternative to A level.[23] The report highlighted that at age 18 progress for learners who do not complete their Level 3 by age 18/19 is minimal or non-existent. The next step after Level 3 is, effectively, a Level 6 (full degree), or nothing, highlighting the 'near-total barrier to progress for people who have achieved a basic level of education at age 18, but do not progress to university or an apprenticeship' (p.23). The report contained 53 recommendations on the future structure of the sector and funding proposals, including:
  The headline recommendations:
    - the reduction of higher education tuition fees to £7,500 per year
    - Government to replace lost fee income by increasing teaching grant
    - extending the student loan repayment period from 30 years to 40 years
    - reducing the interest charged on student loans while students are studying
    - capping the overall amount of repayments on student loans to 1.2 times their loan
    - reducing the income threshold for student loan repayments from £25,000 to £23,000
    - reintroducing maintenance grants of £3,000 for disadvantaged students
    - introducing maintenance support for level 4 and 5 qualifications
    - a first free full level 2 and 3 qualification for all learners

Specifically, recommendation 3.1 - Strengthening technical education - recommended improved funding, a better maintenance offer, and a more coherent suite of higher technical and professional qualifications to level the playing field with degrees. Recommendation 3.6 noted that transfer

[21] DfE (2018) Level 2 and 3 attainment in England: Attainment by age 19 in 2017, Table 6. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/791405/L23_attainment_2018_main_text.pdf

[22] As above.

[23] Kelly, S. (2017) Reforming BTECs: Applied General qualifications as a route to higher education. HEPI. https://www.hepi.ac.uk/wp-content/uploads/2017/02/Hepi_Reforming-BTECs-Report-94-09_02_17-Web.pdf

between different institutions should be facilitated and that there should be greater investment in so-called 'second chance' learning at intermediate levels. Recommendation 3.8 suggested phased withdrawal of financial support for foundation years attached to degree courses after an appropriate notice period. This recommendation was based in part on perceived poor value for money for government and some students, and support for the alternative route into HE for students without the necessary prior attainment provided by Access to HE Diplomas.

- **House of Commons (HOC) Library (2019)** – No.8732 – *Level 4 and 5 Education*. In 2016-17, there were around 190,000 learners studying at Levels 4 and 5 (excluding apprenticeships), with an average age of 30, half of whom studied part-time. The report confirmed the evidence of low take up of Level 4 and 5 qualifications in England when compared internationally. Around 10% of all adults aged 18-65 hold as their highest qualification a level 4-5, compared to around 20% in Germany. Take-up of Level 4 and 5 qualifications was also low compared to other levels of education – approximately 4% of 25 year olds in England held a Level 4 or 5 qualification as their highest qualification, compared to 30% for both Level 3 (e.g. A Levels) and Level 6 (e.g. undergraduate degree). The numbers enrolling on Level 4 and 5 qualifications had declined by 63% between 2009-10 and 2016-17 (circa 510,000 to 190,000). Potential reasons cited for the decline in take-up of L4 and 5 qualifications in England included low student awareness, employer focus on school leavers and graduates, complexity in the qualifications landscape, lack of funding, and lack of incentives for students and providers. The 2019 DfE consultation had argued that higher technical education is "poorly understood and lacks currency both with employers and students, despite increasing demand for skills at this level' (cited p.15).
- **HOC Library (2019)** - *T Levels: Reforms to Technical Education*. The report clarified the planned implementation of the new Level 3 study programme – T Levels – primarily aimed at 16 year olds at the start of technical routes (apart from four apprenticeship only routes). A 'transition year' was to be developed for students not ready to start a T Level at age 16, but who could achieve one by age 19. T Levels would be equivalent to a 3 A Level programme, consisting of an average of 1800 hours studied full-time over two years. This was around 50% more than the current average 16-19 study programme.

  T levels would consist of five components:
  1. A technical qualification
  2. An industry placement with an employer of at least 315 hours (around 45 days)
  3. Maths, English and digital requirements
  4. Any other occupation-specific requirements/qualifications (e.g. a license to practise)
  5. Any further employability, enrichment and pastoral provision

T Levels within the construction, digital, education and childcare routes to be delivered by providers from September 2020.

- **2020** (September) - Three T-Levels at Level 3 introduced:
  - Design, surveying and planning for construction
  - Digital Production, design and development
  - Education and childcare

T levels were introduced as 2-year courses following GCSEs, equivalent to 3 A levels. They are designed to combine classroom theory, practical learning and substantial industry placements (45 days). T Level

courses have been developed with employers and businesses to ensure content meets the needs of industry and prepares students for work.[24]

- **2020** - The second stage consultation of the Review of post-16 qualifications at Level 3 launched (closed January 2021)
- **Department of Education (2020)** - *Review of post-16 qualifications at level 3 and below in England - Government consultation response*. A simplification of the system and improving links to skilled employment or further study remained key aims. Government's reaffirmed position in the second stage consultation proposed three core design principles that all level 3 technical qualifications for adults must adhere to:
    1. Modular delivery of content
    2. Recognition of prior learning
    3. Competence-based assessment

Government noted that respondents found the minimum external assessment level of 40% to be arbitrary, with some suggesting that external assessment and examinations were often not appropriate for some students to demonstrate their learning, for example adults, students with SEND, or those with low prior attainment were mentioned in consultation responses.

- **2021** (September) – Seven additional T LEVELS launched
    - Building services engineering for construction
    - Digital business services
    - Digital support and services
    - Health
    - Healthcare science
    - Onsite construction
    - Science

- **2022 (**additional T LEVELS)
    1. Accounting
    2. Agriculture, land management and production
    3. Animal care and management
    4. Catering
    5. Craft and Design
    6. Design and development for engineering and manufacturing
    7. Finance
    8. Hair, beauty and aesthetics
    9. Human resources
    10. Legal
    11. Maintenance, installation and repair for engineering and manufacturing
    12. Management and administration
    13. Media, broadcast and production
    14. Engineering, manufacturing, processing and control

    - **Department for Education (2021)** - *Review of post-16 qualifications at level 3 in England: Government consultation response*. The report's stated view, based on reviewing international good practice, was that a streamlined system, focused on quality rather than

[24] See https://www.gov.uk/guidance/t-levels-next-steps-for-providers

quantity, offers sufficient variety of options and flexibility to meet students' needs, and to ensure positive outcomes. The report cited the Netherlands, Germany and Switzerland as good practice exemplars,[25] having high performing technical education systems, with around 500 or fewer technical qualifications each at levels equivalent to Level 3 and below compared to England. Regarding principles of technical qualifications for adults, government stated that adult technical qualifications should be taught in a modular way and with prior learning recognised. Respondents to the consultation had raised concerns around the principle of summative assessment. Government noted that that there may be circumstances where this is not appropriate, indicating that it would work with Ofqual, the Institute of Apprenticeships, and relevant stakeholders to ensure the design and content of qualifications are assessed in an appropriate way, reflecting the requirements of different industries and occupations.

- **Department of Education (2021)** - *Review of post-16 qualifications at level 3 in England - Policy Statement*. The stated goal is a slimmed-down, higher quality system. The policy statement elucidates both the value of qualifications that can be taken alongside A levels and T Levels and a range of subjects where it is justified to take specialist alternative options (e.g. performing and creative arts). The review affirms that higher education remains central to the economy, society and culture, whilst rejecting the idea that undergraduate degrees should automatically be the goal of post-16 study. 'Progressing to skilled employment, including via higher apprenticeships, and Higher Technical Qualifications (levels 4-5) needs to be seen as equally valid or better choices for some students' (p.7). This approach, argues the review, underpins high performing countries, such as Germany and the Netherlands, where skills systems are endorsed by employers. In turn employers are confident that technical education and training systems will produce employees ready for work (see the Sainsbury Review 2016). The report notes that to ensure competence, the Department will work with Ofqual and the Institute for Apprenticeships and Technical Education 'to ensure the content of these qualifications is assessed in an appropriate way, and engage with relevant stakeholders, including awarding organisations, providers, and employers, so that qualification design and assessment reflects the requirements of different industries and occupations' (p.20).

Following the Sainsbury Review (2016) and the government's Post-16 Skills Plan, which introduced a common framework of 15 technical education routes, the Institute for Apprenticeships and Technical Education published Occupational Maps to illustrate the common framework, with occupations grouped together to show linkages and potential routes for progression.

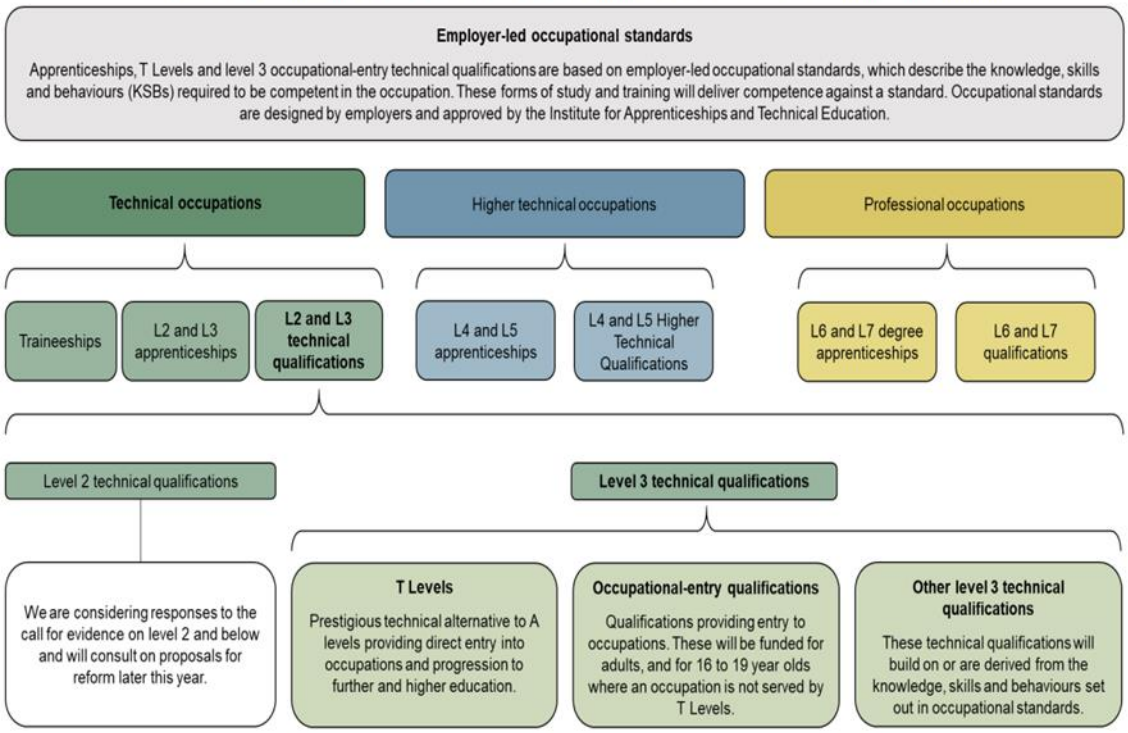
• **Technical** – progression into these occupations will be through T Levels and other level 3 qualifications, level 2 qualifications and level 2 and 3 apprenticeships.

• **Higher Technical** – which will be accessed through Higher Technical Qualifications (HTQs) and other level 4 and 5 qualifications as well as level 4 and 5 apprenticeships.

• **Professional** – which includes level 6 and 7 qualifications as well as degree apprenticeships.

[25] Original source documentation not available in English.

Figure 1: Diagram illustrating the relationship between occupational standards and level 3 technical qualifications



(Source: Department of Education (2021 Review of post-16 qualifications at level 3 in England - Policy Statement, p.10).

T Levels remained the centrepiece of changes at level 3, equivalent to three A levels, designed by employers to support progression directly into skilled employment or to higher technical study or a higher apprenticeship, and also form a path to higher education. Technical qualifications are designed to lead to skilled employment without negating opportunities to progress to higher qualifications. A levels remain central to the study programmes of students taking the academic pathway.

- **Department of Education (2021)** - *Skills for Jobs: Lifelong Learning for Opportunity and Growth*. The White paper noted that in countries with strong employer-led skills systems, such as Germany and the Netherlands, a national network of Chambers of Commerce, representing employers, works in tandem with further education providers to 'co-design and co-deliver curricula' (p.15). The report provided a German case study.
- **Department of Education (March 2022)** - *Review of post-16 qualifications at level 2 and below in England - Government consultation*. Building on the introduction of apprenticeship reforms, T Levels and the T Level Transition Programme, and reforms in higher technical education, the review of qualifications at level 3 and below sought again to simplify the qualifications landscape (citing Wolf and Sainsbury) and to ensure alignment with the Skills for Jobs White Paper, the Skills and Post-16 Education Bill, and the 2021 policy statement[26]. The report cited the Sainsbury Review (2016), the Whitehead Review (2013) and the Augar Review of Post-18 Education and Funding (2019), all of which identified similar concerns in level 2 and below study for adults. The Whitehead Review reported that the complexity in the further education system resulted in technical qualifications that were often of inferior quality, and lacked employer involvement. In turn the Augar Review found that England needed a stronger technical education system at sub-degree levels. As an example of complexity, the

[26] Review of post-16 qualifications at level 3 in England Policy Statement, July 2021

consultation paper noted over 8,000 qualifications approved for funding at level 2 and below, technical or vocational qualifications. In high performing European comparators e.g. the Netherlands there were fewer than 500 technical qualifications equivalent to level 2 and below in England, and fewer than 100 such qualifications in Germany and Switzerland. To ensure clear progression pathways the consultation paper proposed eight distinct groups of qualifications for public funding at level 2 (six groups available to both young people and adults, plus two groups for adults only), alongside GCSEs and Functional Skills Qualifications (FSQs). Qualifications were grouped according to whether they support progression to level 3 study, provide access to sustainable employment at level 2, or deliver English for speakers of other languages (ESOL).

Six groups of qualifications to young people include:

1. Qualifications that support students to progress to level 3 technical qualifications which provide entry to an occupation, including T Levels (group 1)
2. Occupational-entry qualifications supporting progression into employment in an occupation at level 2 (group 2)
3. Specialist qualifications which enable students to build on an employer-led occupational standard and develop specialist skills and knowledge (group 4)
4. Qualifications supporting students to develop cross-sectoral skills that add value across multiple occupational standards, such as stand-alone health and safety qualifications (group 5)
5. Qualifications that have content that is substantially different from GCSEs and that support students to progress to level 3 academic qualifications, such as performing arts qualifications (group 7)
6. English qualifications for speakers of other languages (group 8)

Northern Ireland

The Northern Ireland policy context has a number of key policy directives:

- **Department of Employment and Learning (DEL, 2011)** - *Success Through Skills – Transforming Futures - The Skills Strategy for Northern Ireland* – aimed to enable people to access and progress up the skills ladder, in order to: raise the skills level of the whole workforce; raise productivity; increase levels of social inclusion by enhancing the employability of those currently excluded from the labour market; and to secure Northern Ireland's future in a global marketplace.
- **Department of Employment and Learning (DEL, 2015)** - *Structured to Deliver Success*. The report noted that the Programme for Government and the Northern Ireland Economic Strategy had identified skills as crucial in rebalancing and rebuilding the economy, emphasising the skills that employers need. In turn skills could contribute to addressing social disadvantage, supporting access to job opportunities and ensuring people had the training and development opportunities. The Economic Strategy defined the overarching goal of improving the economic competitiveness of the Northern Ireland economy. In order to achieve this, the Executive committed to strengthening competitiveness through a focus on export-led economic growth. Specific strategic goals were as follows:

Strategic goal 1

- Increase the proportion of those people in employment with Level 2 skills and above to 84-90% by 2020, from a baseline of 71.2% in 2008.
  Strategic goal 2
- Increase the proportion of those people in employment with Level 3 skills and above to 68-76% by 2020, from a baseline of 55.6% in 2008.
  Strategic goal 3
- Increase the proportion of those people in employment with Level 4 - 8 skills and above to 44-52% by 2020, from a baseline of 33.2% in 2008.
  Strategic goal 4
- Increase the proportion of those qualifying from local higher education institutions with graduate and post graduate level courses in Science, Technology, Engineering and Mathematics (STEM) subjects (p.7)

- **DEL (2015)** - *Generating our Success: The Northern Ireland Strategy for Youth Training*. The strategy 'radically transforms existing provision to create a new professional and technical offer at level 2, which provides a high quality parallel route to the traditional academic pathway and gives fresh impetus to skills development for young people in Northern Ireland' (p.19). It recognised that at the European and world levels, the value of strong VET systems had been recognised in the transition of young people from education into employment. The strategy proposed a renewed focus on professional and technical training at level 2 (GCSE level), to facilitate transition into employment and access higher levels of education and training, emphasising apprenticeships. The new youth training system would 'engage young people and employers in structured work-based learning and deliver an industry-focused broad-based baccalaureate-style award at level 2 for all participants' (p.19). The strategy emphasised the active engagement of employers in the new system both in content design and delivery.
- **DEL (2016)** - *Further Education Means Success: The Northern Ireland Strategy for Further Education* – The report suggested that the identification of skills requirements could not be left to government alone; employers needed to be at the heart of identifying the skills they need. It recognised that many of the recommendations in the OECD's 'Skills beyond Schools' review[27] of post-secondary vocational education and training recommended that professional and technical qualifications stand the best chance of being relevant to employers and useful to students when they are developed and delivered through partnership with all relevant labour market stakeholders.
- **Institute for Public Policy Research (IPPR Scotland, 2018)** - *The Skills System in Northern Ireland – Challenges and Opportunities*. IPPR noted that the key goals of the Assured Skills programme in Northern Ireland[28] were to meet the skills needs of companies that invest and operate there, and to increase employment opportunities for participants (DfE, 2012). It further recognised the impact of government budget cuts for further education colleges, resulting in total enrolment decreases. While the total number of apprenticeships increased from 5,202 in 2012/13 to 6,504 in 2016/17, there had been a decline in Training For Success starts from 5,233 in 2012/13 to 3,273 in 2016/17 (DfE, 2018). A Department for the Economy briefing stated that these patterns may have been a consequence of more students staying on at school to study vocational subjects – the figures from the Department of Education

[27] OECD Reviews of Vocational Education and Training: Skills Beyond School Synthesis Report http://www.oecd.org/edu/skillsbeyond-school/Skills-Beyond-School-Synthesis-Report.pdf
[28] Department for the Economy [DfE] (2012) 'Assured Skills Programme'. https://www.economy-ni.gov.uk/articles/assured-skills-programme

showed the percentage of students who continued to stay at school post-GCSEs increased from 59.5% in 2008/09 to 69.8% in 2014/15 (DfE, 2018[29]).

- **Quality Assurance Agency for Higher Education (QAA), Council for the Curriculum, Examinations and Assessment Regulation (CEA) and OFQUAL (2019**) – *Referencing the Qualifications Frameworks of England and Northern Ireland to the European Qualifications Framework*.[30] The 2008 Qualifications and Credit Framework (QCF) was introduced as part of the UK government's reform of vocational qualifications in England, Wales and Northern Ireland. In England and Northern Ireland regulated qualifications are developed and owned by awarding organisations (AOs) that are recognised by the appropriate regulator (Ofqual in England and CCEA Regulation in Northern Ireland). T Levels were being developed for students in the 16-19 age range, covering 25 employment areas, the content of which was being designed by employers. T Levels would offer students a mixture of classroom learning and 45 days of 'on-the-job' experience during an industry placement. Students would take a Technical Qualification during the course, a regulated qualification within the Regulated Qualifications Framework at Level 3.
- **OECD (2020)** - *Skills Strategy Northern Ireland (United Kingdom) – Assessment and Recommendations*. To support the development of the new NI Skills Strategy, the OECD made four key recommendations:
    - Reducing skill imbalances - Northern Ireland should: enhance the provision of career guidance; strengthen the responsiveness and flexibility of the tertiary education and VET systems; reduce economic inactivity to minimise skills shortages; and improve labour mobility to meet skills demand.
    - Creating a culture of lifelong learning - Northern Ireland should: start the development of a culture of lifelong learning early in life; increase motivation of adults to learn; and remove barriers to access adult learning opportunities for individuals and employers.
    - Transforming workplaces to make better use of skills - Northern Ireland should: strengthen management and leadership capabilities; develop engaging and empowering workplaces; and strengthen support structures for businesses.
    - Strengthening the governance of skills policies - Northern Ireland should: effect sustainable funding arrangements and commitment for an overarching strategy for the skills system; increase co-ordination and information distribution across the whole of government; and improve employer engagement in the governance of skills policies
- **Department for the Economy (DfE, 2021)** - *Skills Strategy for Northern Ireland – Skills for a 10x economy.* The report, which builds on the OECD's 'Skills Strategy Northern Ireland' report[31], highlights the key role of Northern Ireland's FE sector in addressing the skills deficit, recognising the FE sector has a 'dual mandate' in the skills system – as the primary provider of education at levels 4 and 5 and vocational qualifications at level 3. Consequently, addressing the mid-level 'skills deficit' had to be 'balanced against the need to provide progression pathways to those who have not reached their potential in school-based

[29] Department for the Economy [DfE] (2018) 'Further Education Activity in Northern Ireland: 2013/14 to 2016/17'. https://www.economy-ni.gov.uk/sites/default/files/publications/economy/FE-Activity-Statistical-Bulletin-1314-to-1617_0.pdf

[30] See https://europa.eu/europass/system/files/2021-05/England%20Northern%20Ireland-%20updated%20referencing%20report.pdf

[31] OECD/DfE (2020) OECD Skills Strategy Northern Ireland: Assessment and Recommendations. Available from: http://www.oecd.org/publications/oecd-skills-strategy-northern-ireland-united-kingdom-1857c8af-en.htm

education' (p.9). As emphasised in Northern Ireland's FE Strategy[32], 'FE Means Success', the sector was central to addressing the changing demands in the labour market.

- **DfE (2021)** – Minister Frew announced[33] an investment of £180million in the NI Traineeship, a new vocational education and training programme (age 16+). The investment would fund almost 20,000 traineeship places, over seven years starting in September 2021. Developed in partnership with employers, the NI Traineeship aimed to combine classroom learning with work-based training, with a view to securing employment in chosen occupations or progress to higher levels of education and training. Delivered by the six further education colleges, the NI Traineeship focussed on a range of employment areas from engineering to retail, hairdressing to joinery, with support for work-based learning provided by local employers. The Traineeship programme provided a full Level 2 qualification (equivalent to five GCSE passes) and included:

    - a main knowledge based qualification in the chosen occupational area
    - vocational skills development
    - transversal and digital skills
    - work placement
    - a Traineeship certificate plus qualifications equivalent to 5 GCSEs including Maths and English Grades A* to C
    - additional qualifications deemed necessary for work within a sector[34]

- **DfE (2022)** – Further Education (FE) Review (to complete mid-2022[35]). The outline for the review notes that FE colleges operate in a rapidly changing environment and need to be able to adapt to meet the evolving needs of learners and of the economy. FE colleges will play a key role in the delivery of the department's new 10X Economic Vision and the draft 10X Skills Strategy. Over recent years, the numbers of learners enrolling in colleges has dropped from 153,088 in 2016/17 to 97,532 in 2020/21. The department recognised that the current six college delivery model has many strengths including the ability to tailor provision to meet the specific needs of learners and employers in local areas. The challenge is to ensure the curriculum can quickly evolve in a coordinated way to focus on those areas where skills are most needed.
- **Northern Ireland Statistics and Research Agency (NISRA) and DfE (2022)** - *Further Education Sector Activity in Northern Ireland: 2016/17 to 2020/21*. FE college enrolments had decreased by a net 36.3%, from 153,088 in 2016/17 to 97,532 in 2020/21, including a 26.3% fall in 2019/20 (132,354). Current trends included a decrease in part-time enrolments, and the lowest level number of 16-19 year-olds since the 1950s. Potential explanatory factors for these trends included the impact of COVID-19, in particular the 'more generous GCSE and GCE grades (leading to school pupils being more likely to progress to sixth form or university) and practical difficulties with organising community-based courses (impacting mainly on adult provision' (p.13). Of the 87,368 FE sector regulated enrolments in 2020/21, over 82% were at Level 2 or above (an increase from 78.4% in 2016/17). Those at Level 1 and below accounted

[32] Department for Employment and Learning (2016) Further Education Means Success: The Northern Ireland Strategy for Further Education. Available from: https://www.economy-ni.gov.uk/sites/default/files/publications/economy/FE-Strategy%20-FE-Means-success.pdf
[33] See https://www.itv.com/news/utv/2021-06-28/frew-announces-180m-investment-in-new-training-pathway
[34] Source: https://www.nidirect.gov.uk/articles/traineeships-explained
[35] See https://www.economy-ni.gov.uk/topics/further-education/review-further-education-delivery-model

for 17.4% (15,224); 40.9% (35,728) at Level 2; 30.2% (26,382) at Level 3; and 11.5% (10,034) at Level 4 and above .

The focus on skills is evident in the 'Draft Programme for Government Framework: 2016-21' (Northern Ireland Executive, 2016[36]), which proposed a number of skills-related economic indicators - increasing innovation, increasing the proportion of people working in good jobs, and reducing educational inequality. 'New Decade, New Approach' (UK Government, 2020[37]) also includes a commitment to ensure that Northern Ireland has the appropriate mix of skills for a growing economy, with an enhanced approach to careers advice, curriculum, training and apprenticeships to enhance employability and support economic growth. The draft Northern Ireland industrial strategy, 'Economy 2030: A Consultation on an Industrial Strategy for Northern Ireland' (DfE, 2017[38]) includes enhancing education, skills and employability as one of the five core pillars for growth, with proposals consisting of reforms to careers advice, strengthening collaboration across industry and government, and delivering new models of youth training.

Scotland

Stobart Report (OECD, 2021) - *Upper-secondary education student assessment in Scotland: A comparative perspective* (England, Hong Kong, China; Ireland; Wales, France; New Zealand; Norway; Ontario (Canada) and Queensland (Australia). Stobart drew on examples from NZ, Australia, Ireland and France to argue for the expansion of the curriculum in Scotland to include vocational qualifications.

Options included:

- the development of a Senior Phase qualification system based on a combination of teacher assessment and exams
- the simplification of S4-5 assessment by 'de-cluttering' the historical diet of exams
- the increased use of online exam resources and oral presentations as an assessment format
- the inclusion of pupils' views in decisions around assessment
- enhancing the role of vocational qualifications

- **OECD (2020)** - *Review of the Apprenticeship System in Scotland – Strengthening Skills in Scotland*.[39] The report argued that the Scottish apprenticeship system needed to adopt three principles to ensure its resilience:
    - Securing the fundamentals. The key principles of apprenticeship needed to be sustained and reinforced.
    - Building in the capacity to respond to change. This implied action on two fronts:

[36] Northern Ireland Executive (2016), *The Draft Programme for Government Framework: 2016-21*, Northern Ireland Executive – Available at: https://www.executiveoffice-ni.gov.uk/topics/making-government-work/programme-government

[37] UK Government (2020) New Decade, New Approach – Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/856998/2020-01-08_a_new_decade__a_new_approach.pdf

[38] Department for the Economy (2017), *Economy 2030: A consultation on an Industrial Strategy for Northern Ireland*, Department for the Economy. Available at: https://www.economy-ni.gov.uk/consultations/industrial-strategy

[39] Available at: https://www.oecd.org/skills/centre-for-skills/Strengthening_Skills_in_Scotland.pdf

        - Effective lifelong learning in an adult-friendly system. Alongside specific occupational skills, apprenticeship should ensure the foundation skills in young people that will prepare them for a learning career. Apprenticeship should also offer a means of upskilling and reskilling, adapted to the needs of adults.
        - An agile system. The elements of apprenticeship systems, including qualifications, programmes, the training workforce and the mix of provision, must respond rapidly to changing employer and student demand.
    - Ensuring that change does not leave people behind. Rapid evolution in labour market demand means that some will be left with skills that are no longer needed, and not all will find it easy to retrain.

OECD reported that over the last decade apprenticeship numbers had increased; Foundation and Graduate Apprenticeships had been successfully launched, co-ordination in governance was enhanced, and a review of apprenticeship qualifications – the 'standards and frameworks' exercise - was underway.

The key OECD recommendations were to:

- Introduce demand-led funding for apprenticeship: In comparison with other countries, Scotland has a skills funding system which is generous to higher education, but relatively unsupportive of apprenticeships, distorting skills provision.
- Establish minimum requirements for the length of apprenticeship programmes and for the proportion of off-the-job training: Linked to this reform, the whole apprenticeship family should be renamed 'Scottish apprenticeships'.
- Develop a non-apprenticeship route to the qualifications currently realised through apprenticeship
- Establish mastercraftsperson qualifications: Apprenticeships had to open up future learning opportunities. This included transition to higher education, and pathways to higher level technical qualifications within a professional field. In the German-speaking countries in Europe, this option was available via the 'master craftsperson' qualification, which enabled qualified apprentices, often with work experience, to acquire higher level professional skills, learn how to run their own small business, and develop skills in training further apprentices.

- **Scottish Audit Office (2021)** - *Improving outcomes for young people through school education*[40]. Data indicated that the percentage of school leavers achieving vocational qualifications had increased over this period, particularly at SCQF level 5 (equivalent to National 5). This indicated an increase from 7.3% of pupils leaving school with one or more passes at this level in 2013/14 to 17.1% in 2018/19. In 2020, 26,970 skills-based awards at level 5 were awarded, including skills for work, personal development awards, national certificates, and national progression awards, up from 16,314 in 2014.
- **Scottish Government (2021)** - *Scotland's Curriculum: Into the Future: Implementation framework for the OECD's 2021 review of Curriculum for Excellence*[41]. This is the Scottish Government's response to the Stobart Report, noting that the report outlined six options that

[40] Available at: https://www.audit-scotland.gov.uk/uploads/docs/report/2021/nr_210323_education_outcomes.pdf
[41] Available at: https://www.gov.scot/publications/scotlands-curriculum-future-implementation-framework-oecds-2021-review-curriculum-excellence/documents/

Scotland may wish to consider as part of a wider dialogue on the future of qualifications and assessment:

1. Exploring the replacement of examinations at age 16 by a school graduation certificate
2. Developing a more resilient upper secondary assessment system
3. Seeking better alignment of assessment with curriculum and pedagogy through broadening the forms of assessment
4. Reconfiguring and increasing the role of school based assessment and adapting the central moderation system
5. Systematically investigating students' perceptions and views of assessment arrangements
6. Further developing the role of vocational qualifications in broadening the curriculum.

- **The Muir Report (2022)** – *Putting Learners at the Centre: Towards a Future Vision for Scottish Education* was published in March 2022.[42] The report emphasised that school education is broader than exam results, aiming to improve children's and young people's health and wellbeing and support wider outcomes such as vocational qualifications. The report argues in favour of external, standardised testing, based on the merit of high reliability.

Wales

- **Donaldson Report (2015)** *Successful Futures: Independent Review of Curriculum and Assessment Arrangements in Wales* generated a programme of major curriculum reform. The report drew on an earlier OECD report[43] that outlined the value for 'clear external reference points' in terms of expected levels of student performance at different levels of education.
- **Qualifications Wales (2016**) - *Vocational Qualifications Strategy* - Qualifications Wales was established under the Qualifications Wales Act (2015) with two Principal Aims:
    - ensuring that qualifications and the Welsh qualification system are effective for meeting the reasonable needs of learners in Wales; and
    - promoting public confidence in qualifications and in the Welsh qualification system

The Principal Aims of the Act require that regard is paid to eight key 'matters' relating to:

1. sustainable growth in the Welsh economy
2. the use of the Welsh language
3. the range, nature and assessment arrangements of qualifications;
4. the requirements of employers, higher education institutions and the professions;
5. the currency of knowledge, skills and understanding requirements;
6. comparable qualifications in other nations
7. efficiency and value for money
8. the relative roles and responsibilities of awarding bodies, learning providers, Qualifications Wales, Welsh Government and other interested parties

The Vocational Qualification Strategy, in line with the eight matters, gives particular prominence to the needs of employers and, in the context of the Well-being of Future

[42] Available at: https://www.gov.scot/publications/putting-learners-centre-towards-future-vision-scottish-education/documents/

[43] OECD (2013) *Synergies for Better Learning: An International Perspective on Evaluation and Assessment* OECD. Paris. See also OECD (2014) *Improving Schools in Wales: An OECD Perspective.* OECD. Paris.

Generations (Wales) Act (2015), to the role vocational qualifications play in the economy. Noting that all vocational qualifications are not the same, the strategy notes the following:

- Vocational qualifications measure whether learners have the right skills, and/or knowledge and understanding, to equip them for work in general, or their chosen career in particular. They also enable employers to recruit and develop staff with confidence. The right approach to vocational qualifications in one type of work may not be right for qualifications in another.
- Vocational qualifications are taken by learners at a number of ages and stages and in a range of settings. Examples of these are:

    - at ages 14 to 16, in schools, where learners take initial vocational qualifications alongside more traditional GCSEs. Sometimes these vocational options are also GCSEs; sometimes they are other qualifications such as BTECs. The courses leading to these qualifications provide an introduction to areas of work, but they do not require the assessment of competence. These qualifications are mostly at Levels 1 and/or 2 and are often taken in conjunction with the Key Stage 4 Welsh Baccalaureate at National and Foundation level;
    - at age 16-19, in further education colleges, where learners take full time programmes of learning leading to one or more vocational qualifications at Levels 1, 2 or 3. These learners may either be seeking to progress to higher education or directly into employment – although they may not be sure at the outset of their programme. These learners will often also take the post-16 or Advanced Welsh Baccalaureate;
    - at age 16-18, in traineeships that are delivered through work-based learning providers, where learners take vocational and other qualifications on programmes that combine learning with work experience, normally at Level 1, to prepare learners for progression into an apprenticeship or work;
    - at age 16+, in apprenticeships that are delivered through work-based learning, where learners are employed as apprentices but also complete a programme of learning and assessment, at Level 2 or Level 3. There are also higher level apprenticeships for older learners;
    - at age 18+, in employment, where learners undertake learning leading to qualifications, in order to improve their knowledge and skills to support their progression within, or beyond, their current job role. Learners in this group will often be working toward some kind of professional recognition or status within their current or future job roles. The learning might be developed 'on the job' and/or at a learning provider of any description;

- **Sector Reviews of vocational qualifications (2016-present)**[44] - Qualifications Wales - Vocational Qualifications Strategy for sectoral review approach). Qualifications Wales reported that vocational qualifications make up over 90% of the regulated qualifications available in Wales, and should reflect the skills that employers need. The sector reviews are designed to enable a particular focus on qualifications within particular employment sectors.

    - Health and Social Care (including child care and play work) - published in July 2016
    - Construction and the Built Environment - published in February 2018

[44] See https://www.qualificationswales.org/english/qualifications/vocational-qualifications/sector-reviews/

- Information and Communication Technology - published in December 2018
- Engineering, advanced manufacturing and energy - published in October 2020
- Forthcoming - Financial services, Customer services and retail, Travel and tourism, Hospitality and catering

The objectives of each review are to:

- develop an understanding of the qualification landscape in the sector
- identify the views of key stakeholders in relation to the effectiveness of existing qualifications, and the qualification system, in meeting the needs of learners, employers in the sector and higher education institutions
- consider the extent to which the most commonly taken non-degree qualifications in the sector are technically effective and fit for purpose
- identify whether there are any lessons to be learned from qualifications and the qualification system in the sector in other comparable nations
- identify whether there are any actions that Qualifications Wales should take or recommend others to take, to improve the effectiveness of qualifications and the qualification system in the sector – and to promote public confidence in these

In the Engineering Sector Review,[45] for example, the review reported that 'learning providers had mixed views about the inclusion of external examinations in the newer vocational and technical qualifications, such as the 2016 BTEC qualifications' (p.49). Some providers had transitioned to the newer versions of the vocational and technical qualifications, others continued to employ the legacy qualifications. This reflects perceptions from providers that the newer BTEC qualifications were more academic than the legacy qualifications – particularly concerning the external examination in the newer iteration. More positively providers reported that the external examinations have ensured qualifications are more rigorous and outcomes more consistent between centres.

Republic of Ireland

- **Government Green paper on Assessment of Learners and Learning (2018)** – The paper referred to the 2009 recommendation of the European Parliament and Council on the establishment of a European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) and that the establishment of EQAVET had not yet led to the production of a document of the equivalent of the ESG i.e. a succinct statement of generally agreed standards and guidelines. It identified the work of CEDEFOP[46], including the 'Ensuring the quality of certification in vocational education and training' report (CEDEFOP, 2015[47]) which addresses summative assessment and the trustworthiness of certification. For CEDEFOP, certification comprises:

- assessment;
- verification and grading; and

[45] See https://www.qualificationswales.org/media/6722/the-importance-of-engineering-oct-2020.pdf
[46] CEDEFOP is one of the EU's decentralised agencies. Founded (1) in 1975 and based in Greece since 1995, Cedefop supports development of European vocational education and training (VET) policies and contributes to their implementation. The agency is helping the European Commission, EU Member States and the social partners to develop the right European VET policies see https://www.cedefop.europa.eu/en/about-cedefop
[47] Available at: https://www.cedefop.europa.eu/files/5551_en_0.pdf

- awarding of a qualification. The key recommendations are:
  - a) articulate clearly certification in VET policies;
  - b) ensure appropriate definition and use of learning outcome-based standards;
  - c) strengthen the involvement of labour market stakeholders in certification and relevant quality assurance processes;
  - d) support the development of a common understanding of certification requirements among stakeholders;
  - e) ensure assessors are competent and trained;
  - f) share responsibility for certification quality assurance at all levels;
  - g) strengthen evaluation and review in certification;
  - h) consider possibilities to complement the EQAVET framework. Incidentally, the CEDEFOP research has found a "slight trend which involves moving away from entirely decentralised approaches and more towards introducing some kind of standardisation, stronger external evaluation and regulatory control has also been identified." (CEDEFOP, 2015, p.13) Of the 12 countries in the study, nine awarded the qualification based on a final assessment and three (Spain, Finland and England) awarded it based on "accumulation of units/modules/credits without a final assessment at the end". (CEDEFOP, 2015, p. 32)
- **Green Paper on the Qualifications System (2020)** - The National Framework of Qualifications (NFQ) is a system for levels of qualifications. It assumes that the learning required for any educational qualification can be described in terms of knowledge, skill or competence. The NFQ is the most widely recognised macro-level infrastructure for qualifications in Ireland. Quality and Qualifications Ireland (QQI) policies and criteria on access, transfer and progression are part of the NFQ's supporting infrastructure. They are concerned with lifelong learning and the permeability and transparency of the qualifications system and they guide providers and qualifications awarding bodies. The universities, including technological universities, the RSCI and the institutes of technology, are all designated awarding bodies (DABs). The institutes of technology have been DABs since 1 January 2020 in respect of awards up to and including NFQ Level 9. DABs are providers that make their own awards; they are responsible for the assessment and certification of candidates for their awards.

  QQI also makes awards across the 10 levels of the NFQ. They have no direct involvement in programme provision and no direct role in the assessment of candidates for their qualifications. QQI requires the involvement of providers of programmes of education and training to arrange for the assessment of candidates for the QQI awards to which their programmes lead. QQI is indirectly involved in provision through the external quality assurance of programmes leading to their awards and their providers (as institutions). QQI determines and publishes standards for its awards in collaboration with stakeholders (standards advisory groups). The NFQ award-type descriptors provide the most general (least specific) QQI award standards. QQI's role includes:

    - validating programmes leading to its own awards
    - delegating authority to providers to make awards
    - externally quality assuring FET and HE institutions and listed awarding bodies
    - authorising providers to use the International Education Mark
    - conducting and reporting on system-level analyses

These five points relate to aspects of external quality assurance, regarded as important for the reputation of the qualifications system. External quality assurance processes are designed to work in tandem with the internal quality assurance systems providers establish to support their activities. The consultation process allied to the Green Paper will address options for new methods for using external quality assurance to help maintain the strengths of the qualifications system.

Section 1 has outlined the main legislative developments in the UK and Ireland from the Wolf Report in 2011 to the most recent developments in early 2022. In Section 2 which follows, literature from the academic and policy arena is reviewed to highlight a number of the important policy debates in the UK context over the recent period, including key debates relating to widening access and educational attainment, the comparability of BTECs and A-Levels, and the experience of BTEC students in higher education.

Section 2: Academic and Policy Debate

A review of the literature in the academic and policy arena is provided in this section, covering a number of key debate areas including; the role of BTECs in widening access, the tension between widening access and educational attainment, the comparability of BTECs and A-Levels, progression barriers to higher education (HE), recruitment and retention issues in HE, the role of, and challenges for, universities in facilitating the entry and retention of students, comparative student performance in HE, vocational and academic qualification pathways, and employment outcomes. The current debate in England tends to revolve around the new educational landscape defined by A and T Levels.

Widening access to higher education

> 'Vocational qualifications at Level 3 - especially BTECs - have played a major role in broadening access to higher education in recent years, particularly from underrepresented groups and low-participation regions' (Foreword, Gicheva and Petrie, Social Market Foundation, 2018, p.3.)

Accepting students with a vocational qualification (Level 3 Business and Technology Education Council qualification; BTEC) into universities in the UK has been regarded for some time as key to widening access to higher education (Gicheva and Petrie, 2018) and increasing numbers from lower participation neighbourhoods (Kelly, 2017). A range of barriers in the transition process to university, and the poor retention and progression of students during and after their course has been identified as a concern (Gicheva and Petrie, 2018; Gill and Vidal Rodeiro, 2014; Shields and Masardo, 2015; Al Meselmani et al., 2018; Huskinson et al., 2020). For widening access to be successful, it remains important to address issues of progression and retention.

BTEC students are more likely to attend low entry tariff universities than high entry tariff universities (Gicheva and Petrie, 2018) and post-graduation achieve lower comparative wages (Social Mobility Commission, 2016). BTEC students are more likely to drop out of university (32%) and attain a lower degree classification (46% attain a lower second class or below) than students entering with A-levels (8% and 28% respectively) (Al Meselmani et al., 2018; Banerjee et al., 2017).

Over the years there has been an increase in BTEC students attending Higher Education Institutions (HEI), with approximately 100,000 BTEC students applying for a place each year (UUK, 2017). In 2018, approximately 10% of students entering higher education (HE) in the UK had studied for a BTEC qualification (Herbert, 2019). However, while there has been an increase, these students are less likely to achieve a 'good' degree (Gartland et al., 2018) i.e. they are more likely to obtain lower degree outcomes (McCoy and Adamson, 2016). It is not only in attainment levels where there are issues. BTEC students also drop out of a degree course in greater numbers than any other group (Kelly, 2017). This appears to suggest that having BTECs impacts a student's success in HE. The relative or perceived value of BTECs within HE is both limiting student choice and creating an entry barrier. At university level there is significant discrepancy in degree completion rates, with under 60% of BTEC students who attend a Russell group university completing their degree (Kelly, 2017).

Gicheva and Petrie (2018, Social Market Foundation)[48] noted the increase in the number of students studying BTEC courses in recent years – from fewer than 50,000 studying one or more Level 3 BTECs

[48] Supported by Pearson and University Alliance.

in 2006 to 150,000 in 2014. In terms of university entrants, Dalton and MacKay (2019) reported that 1 in 4 students enter university having taken a BTEC National (one third a BTEC alone; two thirds a BTEC and A Level), and that each year, around 100,000 students enter university with a BTEC National.

Widening participation initiatives have contributed to increased numbers of BTEC students entering HE, though challenges and potential barriers remain (Gicheva and Petrie, 2018). BTEC students entering university tend to study a narrow range of subjects (for example, Business and Sport and Exercise Science) and are not accessing the more selective universities (Gicheva and Petrie, 2018). Higher education students with vocational qualifications, including BTECs, are more likely to obtain lower degree outcomes and encounter higher attrition rates, and are less likely than students with traditional academic qualifications, such as A-levels, to achieve higher-paid graduate employment (McCoy and Adamson, 2016).

The debate on vocational vs academic learning

The Edge Foundation (2018), in addressing the first principles of English vocational education, suggested that the dichotomy between academic and vocational learning is largely false, or at least misleading. They suggested that, in line with European practice 'the system would benefit from a single aim across school, further and higher education…England appears almost unique in the world in referring to 'academic education' to make the distinction with vocational or technical education. In most other systems, this is referred to as 'general education', with academic being reserved for higher specialist academic study' (p.12). Consequently they argue that it is misleading to define the two in opposition to each other. Similarly in relation to the assessment debate and the distribution of risk between stakeholders, the Edge Foundation (2020) suggested that there is a 'failure to distinguish sufficiently between the different aims of assessment and the instruments appropriate to those aims, leading to problems of using inappropriate assessment instruments. These disagreements are partly related to larger disputes about the nature and purpose of assessment in education more generally which are far from being resolved' (p.6).

Investigating T-levels and the general vocational system, Policy Exchange (2019) contrasted the stability of academic qualifications – A levels and GCSEs - which have survived relatively unchanged in character and purpose for many decades, while 'numerous waves of vocational qualifications, training schemes and government programmes have come and gone in that time, costing around £100 billion in the last forty years alone' (p.7). They conclude that the introduction of new technical qualifications over the last 30 years, despite political and financial backing, has failed – first with the GNVQs and NVQs in the early 1990s and then Diplomas in 2007. Policy Exchange recommended the introduction of three qualification pathways to reflect the different purposes and forms of assessment for qualifications at age 16-19; 'Academic' (courses on specific subjects / disciplines assessed by examinations); 'Applied' (broad areas of employment assessed by a mixture of coursework and examinations); and 'Technical' (courses designed to train individuals in a specific trade or profession assessed through different methods. The rationale for A Levels in this framework is preparation for further academic study whereas for an apprenticeship it is occupational competence in a chosen profession or trade. Policy Exchange supports the distinctions i.e. A-levels based on 100% external examination, current Applied General qualifications including a minimum of 40% external assessment, and apprenticeships a combination of assessment methods. 'These benchmarks should continue in future to help distinguish between the different pathways' (p.54; see Policy Exchange Figure 6 below).

Figure 6: The three new qualification pathways

	ACADEMIC	APPLIED	TECHNICAL
PURPOSE	To develop knowledge, understanding and skills associated with a subject or discipline	To develop and apply knowledge, understanding and skills relevant to broad areas of employment	To develop and recognise mastery of a trade or profession at the relevant level
FORM OF ASSESSMENT	100% external examinations	Minimum of 40% external assessment Additional assessment from other methods e.g. coursework, projects and practical performances	Combination of different methods e.g. theoretical (knowledge) test, workplace observation, viva, projects, interviews

RECOMMENDATION 2

The full range of 16-19 qualifications should be rationalised so that each subject, discipline or profession only appears in one of the three pathways e.g. Mathematics should be classed as 'Academic', Sport should be classed as 'Applied' and training to be a Plumbing Technician should be classed as 'Technical'.

(Source: Policy Exchange, 2019, p.54)

Progress to and performance at university level

Machin et al. (2020) focussed on University Technical Colleges (UTCs) in England, introduced in 2010 for students aged 14 to 18. UTCs partner with employers and universities to design their curriculum, deliver the teaching, and provide pathways to either university or apprenticeships. The research aimed to evaluate the causal effect of attending a UTC on student academic and vocational achievement, and on labour market outcomes. Results indicated that for students who enter at age 16, UTCs boost vocational achievement without harming academic achievement. They also improve achievement in STEM qualifications, and enrolment in apprenticeships. By age 19, UTC students are less likely to be unemployed and more likely to study STEM at university. Machin et al. however note that 'despite its fast expansion, the new model has been dogged with controversy. UTCs have been criticized for their poor performance in national examinations' (p.7). Thorley reported that UTCs and studio schools were 'failing to meet their own stated aims. They are failing to recruit sufficient numbers of pupils, attract pupils with a broad mix of backgrounds and abilities, deliver a broad and balanced curriculum offer, and enhance pupils' progress and performance' (2017, p.3).

Vidal Rodeiro et al. (2013) assessed the impact of prior learning on progression to higher education. They found that students with more academic backgrounds were more likely to go to universities in the Russell and 1994 groups, while those holding vocational qualifications were more likely to study in other types of universities (e.g. universities in the University Alliance or in the Million+ Group). Baily and Bekhradnia previously found that only a small proportion of students with vocational level 3s attended selective universities – a 'student with vocational level 3 qualifications is five times less likely to attend a Russell Group university than a GCE A-level student with the same number of tariff points studying the same subject, and three times less likely to attend any pre-1992 university' (2008, p.11). Students with a mixture of qualifications prior to entry at university were less likely to study in a Russell Group or 1994 Group university than those who held only academic qualifications (Bailey and Bekhradnia, 2008). AS and A Levels were the most popular qualifications held by undergraduates at higher education institutions - 86% of the students starting in 2011/12 held these qualifications, with the proportion holding only A Levels at 28%. The highest percentages of students with A Levels, and other academic qualifications, were in universities in the Russell Group or 1994 Group. Holding an Extended Project or Pre-U GPR qualification alongside AS/A Levels significantly increased the probability of a student attending a university in the Russell or 1994 Groups, whereas having an OCR National or a BTEC alongside A Levels increased the likelihood of attending universities in the Million+ Group and in the University Alliance.

Banerjee (2018) assessed the statistical analysis of institutional admissions and progression data carried out as part of the HEFCE funded project 'Transforming Transitions' which showed that the highest proportion of students who did not progress to the second year of their undergraduate course had entered with a BTEC qualification. For Banerjee this raised the question of whether the BTEC route was working for progression to higher education. Analysis of progression data indicated that the highest proportion of students failing their first year examination had BTEC qualifications (24%), with students whose prior qualifications combined A levels and BTECs doing better. Explanations suggested by Banerjee included the assessment that students are at different starting points in terms of academic preparedness and understanding the assessment expectations in HE. Holford (2017) also addressed the issue of BTEC students' performance at university. The analysis, drawing on data from the Higher Education Statistics Agency, indicated that in the previous 10 years, 6% of students entered university exclusively with BTEC qualifications. In terms of student outcomes in the period, whilst 13% of students with BBB at A-level failed to complete their degree course at the first attempt, the comparable figure for students with equivalent BTECs was 27%. For those with CCC at A-level or equivalent, the gap increased - 17% compared with 37%. Holford concluded that at BBB-equivalent grades, holders of BTECs were 16% less likely to achieve a first or a 2:1, which rose to 25% for those with the equivalent of CCC grades. Holford's solution was to provide more support in university and better advice at school.

Gartland and Smith (2018) highlighted the positive impact of pedagogies and practices on BTEC courses on the development of students' social and cultural capital which helped prepare them for university, whilst noting a growing literature highlighting concerns in relation to the performance of BTEC students on degree programmes compared to their A level counterparts. Fewer BTEC students achieve first and upper second class degrees, even when demographics and entry tariff were accounted for (see Shields and Masardo, 2015). They also recognised the gap in completion rates, noting that for students entering university in 2014/2015, 12% entering with BTEC qualifications dropped out, compared to 6.2% for all students. Gartland and Smith echoed calls for more research on the range of factors known to impact success in higher education, particularly students' socio-economic backgrounds, to deepen understanding when comparing A levels and BTECs (see also Gicheva and Petrie, 2018). In tandem with Kelly (2017, see below) they question the introduction of pass / fail exams into BTEC programmes. Gartland and Smith conclude that further denigration of FE colleges has implications for students' self-identities as learners, and point to the importance of recognising important practices in colleges, such as the development of social and cultural capital as part of the progression to higher education. Kelly (2017) questioned the potential benefits of the academisation and categorisation of BTECs as explicitly academic routes, problematising this move away from their original role as qualifications facilitating progression to the workplace as well as higher education. Kelly linked the type of institution to the completion rate gap, with the highest completion rates (72.4%) at new universities and the lowest rates (58.5%) at Russell Group institutions. This led to criticisms of BTEC courses and a call from organisations, including UCAS, for a way to increase participation in A levels.

Shields and Masardo (2017) presented a statistical analysis (multilevel logistic regression) which interrogated the relationship between types of entry qualifications (academic, vocational and mixed) and the probability of achieving a first or upper-second class degree at university[49]. Their analysis identified a 'strong decrease in the probability of a first or upper-second class degree for students who

[49] The data-set comprised records of all students who graduated from United Kingdom HEIs 2009 to 2013.

enter higher education with vocational qualifications' (p.149). Controlling for a range of demographic factors, they reported that outcomes in higher education are correlated with students' entry qualifications; students entering higher education with vocational qualifications are unlikely to achieve equivalent degree outcomes compared to students who enter with academic qualifications (see Table 1 from Shields and Masardo, below).

Table 1. Entry qualifications and demographic groups.

Qualification groups	% of graduates	% with upper-second and first class	Demographic groups	% of graduates	% with upper-second and first class
All academic qualifications	92.3	69.8	Gender – Male	44.0	65.8
A-Level	70.6	83.9	Gender –Female	56.0	70.9
SQA	6.3	56.5	Gender – Other	<0.1	72.7
International Baccalaureate	1.5	78.8	Full-time	99.4	69.0
Other academic	0.5	59.1	Part-time	0.6	19.0
All vocational qualifications	4.3	51.3	Entry age > 21	7.5	60.3
BTEC	3.3	50.5	LPN	8.2	63.8
Other vocational	1.0	54.1	High entry tariff	50.4	80.1
Mixed academic/vocational	3.4	60.2	Low entry tariff	49.6	59.1
All graduates	100	68.7			

Notes: For each qualification and demographic group, the table indicates prevalence (i.e. the percentage of all graduates in the category) and the percentage who received first or upper-second class degrees. Across all graduates, 68.7% received upper-second class or above and 16.2% received a first-class degree classification. The high and low tariff groups are created by splitting at the mean tariff (339.1).

(Source: Shields and Masardo, 2017, p.156)

The Higher Education Funding Council for England (HEFCE, 2018) assessed the relationship between vocational degrees and employment outcomes, covering the academic years 2012-2016. They found no relationship between how vocational a subject is and how many people study it, and that the graduates in more vocational subjects were more likely to be employed in highly skilled roles. Additionally, and in contrast to research cited earlier they reported that more vocational subjects were associated with higher early career earnings[50].

A number of studies have been produced which focus on the response of universities to the barriers experienced by non-A-level students, and to lower retention rates. Al Meselmani et al. (2018) assessed the experience of Sheffield University in attracting and retaining students with equivalent qualifications to A-levels, including BTECs, an increasing trend in recent years. The research indicated poorer degree outcomes for BTEC students compared with A-level only students. Students, school and college staff, and academic staff were positive in recognising the skill-set that students with equivalent qualifications possessed - strong group work and presentation skills; experience and confidence with regular assignments; and a greater understanding of the workplace and vocational environment. However, challenges in the transition process were also highlighted, both for students and the hosting university. Al Meselmani et al. highlighted the challenges for A-level equivalent students in terms of adjusting to teaching and assessment methods. The challenge for the university was to fully comprehend 'the content and value of equivalent qualifications and to ensure that there was no negativity associated with the pedagogic approach for these qualifications when students were in the 'classroom' as a 'minority'' (p.10).

[50] The research looked at earnings six months after graduation

Peake (2018) analysed five cohorts on the BA Criminal Justice and Criminology programme in the University of Leeds, reporting that fewer than half of the BTEC entrants achieved a 2:1 classification, compared to over 90% of A-level students. Peake questioned the validity of the assumption which views all new students as 'equal'. The research highlighted the skills deficit, noting that whilst some skills learnt in vocational training are useful, 'few are academic and aimed at transition to University' (p.2). Building on this notion of a skills deficit he suggested that it is not surprising that BTEC students lack key academic skills - academic essay writing, critical thinking and referencing – when the BTEC is designed to develop practical skills aimed at employment. The solution is better academic training in the university induction process, for so long as 'the BTEC remains vocational and teaching and learning is conducted with a mix of practical tasks and supervised classroom learning and with no requirement to include degree-appropriate academic skills - it would appear that the responsibility for addressing and alleviating this deficit lies with HE institutions. Universities therefore must address the skills deficits and improve the transition' (p.13). Gill (2019) also reported on students studying on BTEC Level 3 sport and exercise related courses, highlighting the step up to a university foundation degree to be an anxious process, with barriers to be overcome to ensure students meet the perceived demands. Gill recommended that if VET qualifications incorporate and emphasise key academic standards and guidelines into their Level 3 qualifications, 'such as stringent assessment deadlines, specific academic writing styles, independent research and other academic oriented study skills, it would benefit their students' development and further prepare them for transition to HE' (p.106).

Gicheva and Petrie's (2018, Social Market Foundation[51]) analysis of UCAS data from 2016 assessed outcome data for A level and BTEC students in higher education. They reported that in England 26% of university applicants studied at least one BTEC qualification at Level 3. The report highlights a range of issues: grade inflation; the variable academic ability of technical and vocational students who attend university with the same grade profiles; and their lack of skills needed to succeed within higher education, including examination practice and writing skills. Gicheva and Petrie conclude that if 'universities believe that students entering via a vocational route are not sufficiently prepared for higher education they may be reluctant to extend an offer to these students due to increased expenditure on support services' (p.21). They reported that universities had reacted positively to recent BTEC innovations including more examinations and external assessments. An additional issue raised by university admissions teams related to previous attainment – students with vocational qualifications that meet the Level 3 entry requirements, may face issues with their performance at level 2 i.e. they may fall short of the requirement to hold 5 A*- C grades including Maths and English.

Huskinson et al. (2020) reported on the 'Transforming Transitions' project, a collaborative project involving four universities and partner FE colleges and funded by the Catalyst Programme of the Higher Education Funding Council for England (HEFCE). The project aimed to address differential outcomes and to identify factors that might influence preparation, progress, retention and success (Banerjee and Myhill, 2019), and to design support for BTEC students' academic journeys into and within university. Key findings included the value of working collaboratively with students, creating a sense of belonging for students in fostering academic success, and creating supportive digital spaces designed to build student confidence. Myhill et al. (HEFCE, 2019), also reporting on the 'Transforming Transitions' project[52] set out to explore both statistical data on access and progression across the transition, and student and lecturer views on transition. The statistical analysis of HE data confirmed that, at both national level and at the partner HE institutions, students with a BTEC qualification were

[51] Supported by Pearson and University Alliance.

[52] A partnership between universities and further education colleges

less likely to progress successfully through university. The institutional data flagged progression issues at the end of the first year, while lecturer and student interviews confirmed similar issues in transition. Of note, lecturers presented transition challenges as binary differences between students with BTEC qualifications and other students.

Hurrell et al. (2019, University of Central Lancashire) addressed the value of a vocational qualification as preparation for university, in this case for a degree in Biosciences. The examination of the transition process was undertaken in order to better understand the process and to improve university provision for this cohort. They reported that that whilst BTECs equipped students with relevant transferable skills, including time management, report writing, practical laboratory work and working independently, further support was required in mathematics, chemistry, examination and revision techniques. A further issue related to confidence and stigma, with BTEC students reporting a perception that A-level students were smarter than them and 'looked down' on them. Swinton (2020) drew on the experience of the University of Northampton in her analysis, recommending that the university take a number of practical steps to engage with BTEC students more fully in the university environment. Recommendations included on-going engagement to monitor student experience.

Section 2 has highlighted a number of key areas of debate identified within the academic and policy literature. The key issues include the role of BTECs in widening access, the tension between widening access and educational attainment, the comparability of BTECs and A-Levels, the challenges for those taking the vocational qualification pathway into HE, and comparative employment outcomes for students. Section 3 below addresses the assessment level and provides greater focus on the approach to assessment, including the perspectives of key stakeholders in the vocational education sector, including Pearson, OFQUAL and UCAS.

Section 3: Assessment Level

Whilst Pearson (London Economics, 2013) provided a robust defence of the BTEC system in terms of progression and employability, many reviews of the BTEC landscape have been either more balanced in terms of negative and positive assessments, or more critical of the BTEC landscape, with Gill (2016) for example, reporting that BTECs were over-valued and in need of re-evaluation. Pearson (2013) defended the success of BTEC routes to higher education as at least as good as the equivalent A level pathway, and found that in terms of employment outcomes BTEC students had strong employment outcomes. Vitello and Williamson[53] (2017) took issue with the DfE's decision to require external assessment in vocational qualifications taken by 14 to 19-year-olds, with a focus on school-based Key Stage 4 provision (in line with Wolff, 2011 and Sainsbury, 2016). They called into question the idea that external assessment will inevitably be of higher quality than internal assessment. In particular they criticised the 'blanket rule' of external assessment for vocational assessment, and defended the veracity of existing internal assessment systems. They argued that the 'DfE has provided little evidence of the rationale or consultation responses that underpin the proportions of external assessment that have been chosen, which is especially important because they diverge from the current use of external assessment in vocational qualifications' (p.546). Their preference was for a flexible approach on a subject-by-subject basis, which they argue is more evident in the government's approach to GCSEs.

OFQUAL (2016) found strong support for Level 3 qualifications from some stakeholders (parents, employers, head teachers, and the general public), whilst others (teachers, young people, and HEIs) viewed BTECs less favourably. Stakeholders regarded BTECs (Level 3) and Cambridge Technicals (Level 3) qualifications as less valued by higher education than A levels. Budd (2017) highlighted the negative effect of structural factors impacting 'widening participation' students, rather than types of qualifications. Thomson (2018) compared BTEC student and A level student outcomes and noted a number of positive outcomes for BTEC students, including stronger attainment by age 19; a greater likelihood of being in employment (2015/16), and higher earning per year on average. However, the BTEC group were also less likely to have participated in higher education or to have achieved a degree. Lemaitre and Tse (2019) reported a number of positive factors for BTEC students: 24.3% of students entered university in 2015-16 with a BTEC (13.5% in 2008) with BTECS or a BTEC/A level mix providing the fastest growing routes to HE. Thomson (2020a) reported that for the reformed BTECs, comparability between BTECs and A Levels was improved, within a context where the take-up of reformed BTECs has been relatively slow, and many schools and colleges continued to deliver predecessor qualifications.

UCAS (2021) reported that the Level 3 Extended Diploma could substantially narrow student pathways, with 26% of BTEC students unable to study a subject that interested them at degree level because they did not have the relevant subject, compared to 18% of A level students. The future direction of education provision has been outlined recently by the Secretary of State for Education Nadhim Zahawi (2022) who detailed the provision of A levels and the new T Levels as the flagship level 3 qualifications for 16 to 19 year olds. A levels defined as purely academic qualifications; T Level technical qualifications based on occupational standards, the primary purpose of which is to support entry to skilled employment.

From a more critical standpoint, Gill (2016) assessed BTECs to be over-valued and in need of re-evaluation. OFQUAL (2017) reported that in contrast to the steady grade distribution at A Level, the grade distributions for 'older style' Level 3 BTECs had become more skewed over time towards the

[53] Research officers in the Assessment Research and Development division at Cambridge Assessment.

upper end of the grade range. This reflected concerns raised by Gill (2016) and Thomson (2017, 2018). OFQUAL's analysis of degree outcomes established that cohorts of 'older style' L3 BTEC students were underperforming in comparison to equivalent A level students. The 'older style' Level 3 BTEC students were less likely to be in full-time employment, in a skilled occupation, or earning over £20K. Banerjee et al. (2017) also reported that in HE the highest percentage of those who did not progress to the second year of study had entered universities with a BTEC qualification. Thomson (2020), addressing the issue of equivalence, noted that colleges were reluctant to switch to the new style BTECs for which the evidence indicated that grades tend to be lower (Thomson, 2020a). Carter and Bathmaker (2017) highlighted the specific assessment criteria used by BTECs since 2000, and the consequent concerns raised concerning the rigour of assessment practices and the extent to which they may support student progression into HE or employment. OFQUAL (2022) has updated its approach to regulating academic and technical qualifications at level 3,[54] reaffirming adherence to the Department of Education's requirement for external assessment to comprise at least 40% of an Applied General qualification and at least 30% of a Tech Level qualification.

Assessment level: Academic and policy material

Pearson (London Economics, 2013) provided an analysis which looked at the outcomes associated with the BTEC route of degree level acquisition. Their analysis of 16 years of Labour Force Survey data indicated that 'potentially as a result of this subject selection effect, the degree outcomes achieved by men and women following the BTEC route in these subject areas are at least as good as those who complete degrees via the 'A' Level route' (p.17). The findings also demonstrated strong employment outcomes achieved by those adopting the BTEC route of degree level qualification attainment. Specifically, those in possession of BTECs plus degrees were more likely to be employed, and amongst those that are employed, more likely to be employed on a full-time basis. Gill (2016) looked at the equivalence of tariff points for different qualifications by comparing outcomes in terms of degree classification for students with the same UCAS tariff obtained from different qualifications. Gill suggested that this 'would seem to suggest that the current tariffs over-value BTECs and the IB compared with A levels, as the percentage of students achieving a First or at least an Upper Second is higher for A level students at any given UCAS tariff (except for IB students at the very top)' (p.16).[55] Comparing BTECs and A levels, Gill concluded that BTECS were 'highly over-valued' and that the tariff points allocated to BTEC Nationals needed to be re-evaluated.

OFQUAL reported on stakeholder perceptions of A Levels, GCSEs and 'other' qualifications in England, and found that 'BTEC (Level 3) qualifications were less likely to be considered to be of equivalent challenge to A levels (four out of ten stakeholders agreed with this)…The proportion of all stakeholders who disagreed that BTECs (Level 3) qualifications are equivalent in challenge to A levels fell from 47% in wave 13 to 43% in this wave' (2016, p.16). There was increased stakeholder support for the view that BTEC (Level 1/Level 2) qualifications were of equivalent challenge to GCSEs (42% in wave 14 compared with 38% in wave 13). Six out of ten (58%) stakeholders agreed that BTECs (Level 3) were good preparation for further study. Parents (70%), employers (69%), head teachers (65%) and the general public (64%) offered the strongest agreement that BTEC (Level 3) qualifications were good preparation for further study. These levels of agreement were significantly higher than those of teachers (55%), young people (54%) and HEIs (53%). Overall 'there was a consistent view from

[54]See https://www.gov.uk/government/collections/regulating-academic-and-technical-qualifications-at-level-3

[55] The analysis did not factor in other variables e.g. gender, school attended and socio-economic factors.

stakeholders, including HEIs, that International A levels, the International Baccalaureate Diploma Programme and the Pre-U are valued as highly as A levels by HE.

In contrast stakeholders disagreed that BTECs and Cambridge Technicals (at Level 3) qualifications were valued as highly as A levels by HE. Follow up research by OFQUAL (2017) on grade inflation in the older style level 3 BTEC Nationals from 2006 to 2016 noted that BTECs have traditionally been assessed and marked internally by centres (with some external verification being carried out by Pearson). The research investigated whether there was evidence of unwarranted grade inflation, using a combination of datasets provided by the Department for Education (the 'National Pupil Database') and the Higher Education Statistics Agency (HESA). In the academic year 2016-17, Pearson was the largest provider with 81% of all Applied General certificates. The next highest provider, University of the Arts London, had 9% (Ofqual, 2018). Pearson's level 3 (L3) BTECs (also known as BTEC Nationals) have steadily risen in popularity over time, being offered by the majority of schools and colleges. Concerns relating to grade inflation have been raised (Gill, 2016; Thomson, 2017, 2018), with stakeholders suggesting that it may be 'easier' to achieve equivalent outcomes in 'older style' L3 BTECs compared to A levels, and that equivalent outcomes in these course types do not offer equivalent levels of preparation for university.

OFQUAL reported that while grade distributions for A levels remained stable over time, grade distributions for 'older style' L3 BTECs became progressively more skewed over time, towards the upper end of the grade range. In particular, the proportion of students achieving 'top grades' (distinction or distinction star) has increased 'substantially' over time. For 'older style' L3 BTEC subsidiary diplomas (equivalent in size to an A level) the proportion of students achieving top grades had increased from 21% in 2005/2006 to 61% in 2015/2016. Analyses focussed on the subsequent degree outcomes of these students, and found that successive cohorts of 'older style' L3 BTEC students with the same outcomes were increasingly less likely to achieve an upper 2nd or 1st class degree compared to A level students with equivalent level 3 outcomes. The same findings were constant across different degree subject areas, and for graduates who completed degrees in the same subject area as their level 3 studies. Again, these findings seem consistent with the existence of grade inflation, suggesting that 'older style' L3 BTEC outcomes have offered progressively lower levels of preparation for university over time, compared to equivalent A level outcomes. Given the applied nature of 'older style' L3 BTECs, OFQUAL also assessed the performance of 'older style' L3 BTEC students in entering employment, using the Destinations of Leavers from Higher Education (DLHE) survey collected by HESA, which includes information on the employment status of university graduates, six months after graduation.

OFQUAL's analysis indicated that 'older style' L3 BTEC students exhibited a progressively lower likelihood over time of being full-time employed, in a 'highly skilled' occupation (managerial or professional occupations), and having a 'good' salary (£20k p/a), relative to A level students with equivalent level 3 outcomes. Following the introduction of external assessment as a required aspect of BTEC assessment in order to be included in school performance tables, OFQUAL (2017a) provided an overview of the functioning of assessments in 27 qualifications and 49 units. The report concluded that this 'work indicates that the majority of tests which were analysed had good or reasonable test functioning. This work has helped Ofqual engage with a number of awarding organisations (AOs) around the quality of external tests in school-based vocational and technical qualifications. We hope to conduct such analyses more routinely, as more and more vocational and technical qualifications include external assessments' (p.17).

To assess the relationship between prior qualification and degree outcomes Banerjee et al. (2017) analysed historic admissions and progression data, and reported that prior qualifications are a strong predictor of end of first year results in undergraduate courses in the subject areas of Business, Management studies, Computer science, and Sports science. Research findings showed that amongst the subject areas reviewed, BTEC students were more likely to join Sports and Exercise science where they are also more likely to succeed and least likely to start in Computer science where they are less successful. Analysis also demonstrated that the highest percentage of those who did not progress to the second year of study had entered Universities with a BTEC qualification. Banerjee et al. concluded that through a range of initiatives, universities could create more supportive learning environments to reduce inequalities in educational outcomes for the widening participation cohort.

Addressing broader structural factors, Budd (2017) highlighted the impact of class, noting that outcomes for people from disadvantaged backgrounds in relation to university are poorer than for those from the middle classes. Performance at school is undermined by a range of complex external factors that mitigate against higher achievement. If they do go to university, poorer students were less likely to attend the high-status universities that provide better job prospects. Thomson (FFT Education Datalab, 2017), in addressing the equivalence of A-Levels and BTECs,[56] reviewed the findings of Kelly (2017, HEPI) which highlighted that much of the increase in the proportion of young people achieving Level 3 – A-Levels or equivalents – by age 19 had been driven by increased participation in BTECs and other vocational qualifications. The Social Market Foundation (Gicheva and Petrie, 2018) had previously shown that there was a threefold increase in the number of pupils taking a BTEC between 2006 and 2015. For Thomson, the equivalence of BTECs and A-Levels required review, suggesting that the equivalences used by both UCAS and the Department for Education over-valued BTECs. Thompson (FFT Education Datalab, 2018[57]) assessed the outcome data for Level 3 BTECs – including the Level 3 National Diploma (equivalent to three A-Levels) and the Level 3 National Certificate (equivalent to two A-levels). Thomson compared the outcomes of students who took exclusively or almost exclusively BTEC qualifications with those of students who took exclusively or almost exclusively A-Levels, focusing on the cohort who were aged 16 at the start of the 2009/10 academic year. He found a range of positive outcomes, including that the BTEC group appeared to have much stronger attainment by age 19; were slightly more likely to be in employment in 2015/16 and were earning £800 per year more on average; but were less likely to have participated in higher education or to have achieved a degree.

In an update to his 2017 review, Thomson (2020) reported that schools and colleges were reluctant to switch to the new style BTEC qualifications. Grades awarded in the reformed BTECs tended to be lower than those awarded in legacy BTECs in 2018. Fewer starred distinction grades were awarded in reformed BTECs (9% compared to 37% in legacy qualifications). A total of 70% of entries were awarded a distinction or merit post-reform. Some students entered a mix of A-Levels and BTECs in 2018: 17,000 entered at least one legacy BTEC and at least one A-Level, while 15,600 entered at least one reformed BTEC and at least one A-Level. The available data meant that a comparison was possible between A-Level and BTEC results (Level 3 average point scores) for the set of pupils who entered both. Of note, post reform take-up of reformed BTECs was relatively slow, with schools and colleges continuing to deliver predecessor qualifications – there has been no funding incentives to change and the incentive for publication of data in performance tables appears to have had little effect.

[56] Available at: https://ffteducationdatalab.org.uk/2017/02/the-equivalence-of-a-levels-and-btecs/
[57] Available at: https://ffteducationdatalab.org.uk/2018/11/long-term-outcomes-how-did-life-turn-out-for-those-who-took-level-3-btec-qualifications/

Directly assessing the equivalence of BTECs and A levels, Thomson (FFT Education Datalab, 2020a[58]) reported that the number of students taking applied general qualifications fell from 125,000 in 2016 to 46,000 in 2018. Numbers taking Tech level qualifications fell from 69,000 to 13,000. Provisional data for 2019 indicated a slight upturn, but not back to 2016 levels. Legacy BTECs would remain available to 2021, and many schools and colleges continued to offer them. Students who entered legacy BTECs tended to achieve higher Level 3 average point scores in those qualifications than in A-Levels. On average, they achieved 43 points in BTECs – equivalent to between grade A and grade B at A-Level – while on average they achieved 28 points in A-Levels, or just below grade C. The difference of 15 points is equivalent to one and a half grades at A-Level. For reformed BTECs the difference was much narrower among pupils: 5 points – equivalent to half a grade at A-Level – so comparability has increased, but remains imperfect. Thomson concludes that grades awarded in reformed BTECs tend to be lower than those awarded in predecessor qualifications, which in effect results in much closer comparability to A-Levels using DfE point score equivalences (Students still tend to achieve 5 points higher in BTECs – equivalent to half a grade at A-Level).

Carter and Bathmaker (2017) assessed the potential limitations of teacher-based assessment within technician-level vocational education, which uses criterion-referencing in vocational qualifications including the BTEC National qualifications. Carter and Bathmaker note on-going concerns raised 'about the rigour of assessment practices and the extent to which they may support students' progression into HE or employment, without necessarily ensuring the achievement of the proficiency required to sustain such progression' (p.461). In their case study, Carter and Bathmaker concluded that the 'construction of teacher-based assessment practices in the engineering department in this study shows how assessment approaches such as criterion-referencing and formative assessment, intended to support learning and encourage achievement, can turn into a means of getting students through, with less attention paid to the levels of knowledge and proficiency achieved' (p.470). The Lemaitre and Tse (2019[59]) article provides a range of useful data focussed on the progression of BTEC students to higher education, in tandem with key features of the newer BTEC Nationals:

- 24.3% of students entered university in 2015-16 with a BTEC compared with just 13.5% in 2008
- The fastest growing routes to HE are with a BTEC, or a BTEC/A level mix
- The proportion of students entering HE with a BTEC is higher in areas with a low rate of entry into HE
- Around 95% of universities and colleges in the UK accept BTEC students, including competitive universities from the Russell Group.
- In addition there is growing trend of international universities recognising BTEC Nationals for student progression

Features of the new BTEC Nationals:

- External assessment (most subjects have at least one written examination) –at least 33%
- Larger core of mandatory units – at least 50%
- Students must pass all externally assessed units and most or all of the mandatory units
- Synoptic assessment[60]

[58] See https://ffteducationdatalab.org.uk/2020/01/the-equivalence-of-a-levels-and-reformed-btecs/
[59] See https://www.taicep.org/taiceporgwp/wp-content/uploads/2019/04/Demystifying-Technical-and-Vocational-Education-A-Thorough-Look-at-BTEC-and-University-Progression.pdf
[60] Synoptic assessments typically requires students to synthesize learning from two or more modules.

- One resit only for externally assessed units
- One resubmission / one retake for internally assessed units
- More emphasis on research skills
- Strengthening and embedding of mathematics and / or English (writing) requirements

Thomson (FFT Education Datalab, 2019[61]) reviewed the Key Stage 5 performance tables for 2018 and reported that the number of students completing two years of advanced level study fell from 429,000 in 2016/17 to 327,000 in 2017/18. Numbers entering A-Levels had increased; the decline came from those entering applied general (e.g. BTEC) and technical qualifications. Following DfE's reforms to vocational qualifications a range of qualifications approved for 16-19-year-olds was deemed ineligible for performance tables. Thomson posited that it would appear that schools and colleges have chosen *en masse* to continue offering legacy qualifications, which are no longer eligible.

UCAS (2021[62]) assessed the factors influencing the choices made by school leavers in England. UCAS reported that certain vocational qualifications, including the Level 3 Extended Diploma, can substantially narrow their pathway, typically leading to just one or two specific degree subjects and these students typically only sit one qualification post-16. For example, two in five English 18 year olds with a Pearson BTEC Level 3 National Extended Diploma in Sport and Exercise Science are accepted to study sport and exercise science at degree level, qualifications that do not typically lead to any other subject at university or college, and the remaining pupils generally do not apply to HE. These strong relationships may result in a student's HE options being narrower if they take certain vocational qualifications; 26% of BTEC students reported being unable to study a subject that interested them at degree level because they did not have the relevant subject, compared to 18% of A level students. UCAS conclude that this will inevitably impact disadvantaged students more, as disadvantaged students are three times as likely to hold only BTEC qualifications than those from a more advantaged background.

Thomas (2022[63]) suggested that Wales was in a strong position in terms of the future of post-16 education in comparison to the rest of the UK and internationally. In part this advantage arose from the 'pioneer' schools in Wales that have contributed to the development of a new national curriculum based on the Donaldson report (2015), with GCSE subjects and other qualifications redesigned to support the new curriculum. In addition to the A level approach, Wales has developed its own Baccalaureate qualification, for which learners are required to complete several elements including GCSE and A-levels. Thomas noted that it is 'designed to enable learners to acquire and apply a range of complex 'essential and employability' skills in different settings and contexts that provide a broader education'.

Recently the Secretary of State for Education Nadhim Zahawi (2022, Letter to OFQUAL) outlined current and future direction for the department. Government documents make some reference to international examples of good practice, including Germany and the Netherlands. A levels and the new T Levels are confirmed as the flagship level 3 qualifications for 16 to 19 year olds. A levels are defined as purely academic qualifications which seek to support students to progress to undergraduate academic study, particularly (although not only) in the same subject area; T Level

[61] See https://ffteducationdatalab.org.uk/2019/01/key-stage-5-performance-tables-2018-where-have-all-the-applied-general-entries-gone/
[62] See https://www.ucas.com/file/435551/download?token=VUdIDVFh
[63] See https://www.bera.ac.uk/blog/why-wales-has-a-head-start-in-the-future-of-post-16-education-in-the-uk-and-internationally

technical qualifications are based on occupational standards and their primary purpose is to support entry to skilled employment, either directly or following a period of higher technical education. The proposals aim to improve clarity around the purpose of qualifications and their intended destination points for students i.e. academic or skilled employment. Government policy aims to ensure provision of high quality academic qualifications that can be taken alongside or as alternatives to A levels where there is a clear need for the skills and knowledge they contain to support progression to higher education, similar to 'Applied Generals' in the current landscape. These qualifications comprise two broad categories; the first are qualifications with an emphasis on practical or applied knowledge and skills that – when taken with A levels – would complement A level study and thereby support progression to an aligned subject area at higher education; the second are qualifications in subject areas with high levels of practical or performance-based content that is not available through A levels. These may be larger qualifications (equivalent in size to a student's full study programme, providing there is no overlap with T Levels) owing to the need to develop the requisite skills and knowledge to enable progression to aligned areas of higher education. Zahawi notes that OFQUAL has investigated issues with the maintenance of standards in existing 'Applied General' and 'Tech Level' qualifications, and indicates that further work on how best to secure grading standards, over time and between awarding organisations, in these academic qualifications would be welcome.

In its own review of the regulations for academic and technical qualifications at level 3, OFQUAL (2022[64]) set out its proposed approach to regulating alternative academic qualifications and alternative technical qualifications, in the Level 3 landscape. This is part of the Department of Education's 'Review of post-16 qualifications at level 3 in England', alongside A levels, T Levels and Apprenticeships. It reaffirms adherence to the Department's requirement for external assessment to comprise at least 40% of an Applied General qualification (similar to many of the Level 3 alternative academic qualifications) and at least 30% of a Tech Level qualification. In addition, and following the Secretary of State's steer, OFQUAL states that it will continue to be important for a proportion of the content in alternative academic qualifications to be assessed through an examination set by the awarding organisation. OFQUAL's proposal is 'to set a minimum requirement for the proportion of Assessment by Examination that must be included in alternative academic qualifications. Setting expectations for the minimum percentage for Assessment by Examination is an approach taken in A levels and T Levels, as well as key stage 4 performance table qualifications' (p.37). In line with A levels and T Levels which allow for non-exam assessment where this is appropriate to the content being assessed, OFQUAL proposed that, similarly, non-exam assessment should also be permitted in alternative academic qualifications where it is the most valid approach for the content being covered.

The first three sections of this report have focused on the evolution of VET systems in the devolved nations within the UK and in Ireland, alongside the related academic and policy debates. To set the UK and Ireland in a comparative international context, and to provide examples of international good practice, Section 4 provides reviews of additional comparator VET systems in Switzerland, the Basque Country, Germany, Finland, and Denmark.

[64]See https://www.gov.uk/government/collections/regulating-academic-and-technical-qualifications-at-level-3

Section 4: International Level

At the international level three main sources can be drawn upon to inform country level comparisons – the Eurydice National Education Systems[65] established by the European Commission, the Organisation for Economic Co-operation and Development[66] (OECD), and CEDEFOP – the European Centre for the Development of Vocational Training[67]. Elements of international best practice have been influential in the UK and Ireland in recent years, including OECD reports that have had significant recent impact in the evolution of VET systems in Scotland (the 2021 Stobart Report), and in Ireland CEDEFOP reports influenced the 2018 Green Paper on Assessment of Learners and Learning. The breadth and volume of available country-level literature means that it is only possible to briefly introduce the main sources of data in the following sections.

The following section presents several CEDEFOP reviews which provide succinct summaries of country-level VET systems; the Eurydice review is the only source for Switzerland, with the OECD the only source for the Basque Country. The range of models, and the volume of the literature on European VET models, make it possible only to introduce the VET systems in the countries of interest – Switzerland, the Basque Country, Germany, Finland, Ireland, the Netherlands, Denmark and the UK. The logical comparators for the UK are Finland and Ireland which also operate school based (rather than workplace based) VET systems. Germany, Switzerland, Denmark and the Basque Country operate dual VET systems in which the private sector is the key driver.

A VET model typology from EdventureCo is reviewed. It includes the Dual VET model (Germany, Switzerland and Denmark, plus Austria) and the School-Based VET (Finland, plus Poland, Slovenia and Lithuania[68]). UK government publications from the Wolf Review in 2011 (Germany and Denmark), to the 2016 Sainsbury Review (Germany, Denmark and the Netherlands), and up to more recent reports from the Department of Education in 2021 (Germany and the Netherlands) and 2022 (Germany and Switzerland) have drawn on international comparators to inform the development of good practice. In the concluding section a brief review of literature covering the German VET system is presented to assess some of the main features of the German model, as a European exemplar, with some insights into the potential transferability of the model.

The Eurydice Network

The network is a resource designed for those responsible for education systems and policies in Europe with European-level analyses and information. The network focusses on the way education in Europe is structured and organised at all levels. The Eurydice network provides information on education systems and policies across 40 national units based in 37 countries, including the four home nations, Ireland, the Netherlands, Switzerland, Germany, Finland and Denmark (excluding the Basque Country).

For the nations under consideration the range of indicators includes – 'Secondary and Post-Secondary Non-Tertiary Education (Section 6)'-

- Assessment in General Upper Secondary Education
- Organisation of Vocational Upper Secondary Education

[65] See https://eacea.ec.europa.eu/national-policies/eurydice/national-description_en
[66] https://www.oecd.org/education/innovation-education/vet.htm
[67] See https://www.cedefop.europa.eu/en/themes/vet-knowledge-centre
[68] CEDEFOP defines the UK's VET system as 'predominantly school-based' see https://www.cedefop.europa.eu/files/4168_en_uk.pdf

- Teaching and Learning in Vocational Upper Secondary Education
- Assessment in Vocational Upper Secondary Education
- Post-Secondary Non-Tertiary Education
- Organisational Variations and Alternative Structures

Further information on Assessment in Vocational Upper Secondary Education across countries is available here:

- Germany - https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-vocational-upper-secondary-education-20_en
- Switzerland - https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-vocational-upper-secondary-education-79_en
- Denmark - https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-vocational-upper-secondary-education-12_en
- Finland - https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-vocational-and-technical-upper-secondary-education_en
- Ireland - https://eacea.ec.europa.eu/national-policies/eurydice/content/post-secondary-non-tertiary-education-13_en
- England - https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-vocational-upper-secondary-education-63_en
- Scotland - https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-general-and-vocational-upper-secondary-education_en
- Wales - https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-vocational-upper-secondary-education-65_en
- N. Ireland - https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-vocational-upper-secondary-education-64_en

VET Switzerland[69]

Key features of the education system

Switzerland is a federal and multilingual country with a decentralised education system. The primary responsibility for education lies with the 26 Cantons (states). While the Cantons are responsible for compulsory education, the Cantons and the Federal Government share responsibilities for post-compulsory education (general education schools, vocational and professional education and training, universities). Decentralisation is reflected in the fact that the cantons and their municipalities finance 90% of public expenditure on education. The Confederation and the Cantons have a joint obligation to ensure a high degree of quality and permeability within the education system. In the performance of this duty, the entire education system in Switzerland is systematically monitored, key challenges are identified and the achievement of policy goals is evaluated on a regular basis. The Swiss Education Report, which is published every four years, is one result of this monitoring process.

Switzerland has a strong vocational and professional education system (VET). It offers mostly dual-track VET programmes at upper secondary level (combining an apprenticeship in a training company with 1-2 days of classroom instruction at a vocational school) and broad tertiary-level professional education programmes. Two thirds of all young people coming out of compulsory education enrol in VET, which provides them with a solid foundation in a given occupation (there are about 230

[69] reproduced from Eurydice

professions to choose from). Around one-third opts for continuing education at an upper secondary specialised or baccalaureate school, which prepare them for tertiary education at a university.

Open access to various types of education and a high degree of permeability between programmes play an important role: Anyone who has the necessary qualifications can generally attend the courses of his/her choice. With a few exceptions (numerus clauses in specific programmes a baccalaureate diploma allows for free choice of the university as well as the study programme. VET is subject to some restrictions due to ceilings on apprenticeship positions. There are many ways to enter or transfer to a training programme or school or to attend a catch-up training programme. A federal VET-diploma combined with a federal vocational baccalaureate, for instance, opens the way to universities of applied sciences. By passing an additional aptitude test, students have the option of enrolling in a university or in a federal institute of technology. More than 90% of all young people acquire a certificate or diploma at upper secondary level, which facilitates direct entry into the job market or enables them to continue education at tertiary level.

Upper secondary education

Upper secondary education is subdivided into general education programmes and vocational education and training programmes (VET). The general education programmes include the *Gymnasiale Maturitätsschulen / écoles de maturité / scuole di maturità* [*Baccalaureate schools*] and the *Fachmittelschulen / écoles de culture générale / scuole specializzate* [*upper secondary specialised schools*]. They do not lead to professional qualifications, but prepare for tertiary level education programmes. In the *berufliche Grundbildung / formation professionnelle initiale / formazione professionale di base* [*VET*] adolescents learn a profession. VET is mostly completed at training companies (apprenticeship) combined with education at a *Berufsfachschule / école professionnelle / scuola professionale* [*VET school*]. The adolescents complete upper-secondary education at the age of 18/19. About one-third of adolescents acquire one form of baccalaureate (*gymnasiale Maturität / maturité gymnasiale / maturità liceale; Fachmaturität / maturité specialisée / maturità specializzata; Berufsmaturität / maturité professionnelle / maturità professionale* [*baccalaureate, specialised baccalaureate or vocational baccalaureate*]).

Tertiary level

The tertiary level comprises *universitäre Hochschulen / hautes écoles universitaires / università; Fachhochschulen / hautes écoles specialisée / scuole universitarie professionali; Pädagogische Hochschulen / hautes écoles pédagogique / alte scuole pedagogiche* [*universities, universities of applied sciences, universities of teacher education*] and, as a second important pillar, institutions providing professional education and training (PET). The latter is aimed at people with an upper secondary VET diploma and several years of professional experience, enabling them to gain specialist education and additional qualifications. It comprises diplomas from a *höhere Fachschule / école supérieure / scuola specializzata superiore* [*PET college*], an *Eidgenössischer Fachausweis / brevet fédéral / attestato professionale federale* [*federal PET diploma*] or an Eidgenössisches Diplom / diplôme fédéral / diploma federale [*advanced federal PET diploma*]. 45 % of adults obtain a tertiary education degree or diploma, 30% from a university, 15% from a PET institution.

Continuing education and training

Continuing education and training is characterised by heterogeneity, e.g. regarding responsibility, regulation, financing and types of programmes. Private parties perform a key role, bearing general responsibility, as well as providing and financing continuing education and training. The Confederation and the cantons mainly perform a subsidiary role.

Organisation for Economic Co-operation and Development (OECD)

The OECD VET and Adult Learning Team reports on the main strengths and weakness of country level VET systems and has produced a range of publications[70] which aim to facilitate comparison in VET approaches. Data are available on circa 35 countries, including the four home nations, Ireland, the Netherlands, Switzerland, Germany, Finland and Denmark. The available data cover the period 2008-2020 with a limited number of updates available to 2022. OECD data is available for the Basque Country.[71] The OECD review of VET in the Basque country is replicated below (edited).

VET in the Basque Country[72]

The Basque Country has many prerogatives in Vocational Education and Training (VET), which has allowed VET to develop a significant role in the Basque Country. In 1997, a major reform established an integrated training plan that mirrored occupations and monitored the quality of trainings. It also created a network of providers headed by the Basque Institute for Vocational Guidance, the first institute of its kind in Spain. In 2004, the government reformed vocational education to better respond to labour market needs. Between 2011 and 2013, the newly created Basque public employment service, Lanbide, also started taking up an active role in vocational education. Lanbide has been offering training measures, targeted at retraining for those with lower skills. In 2016, governing parties agreed to a volley of changes in VET, including closer ties with firms, a greater emphasis on innovation and entrepreneurship, new types of training, part-time education and more specialised programmes to meet company needs. In 2018, the Basque Country passed Law 4/2018 on Vocational Training in the Basque Country, creating the *Órgano Superior de Coordinación de la Formación Profesional*, a structure that implements the contents of the Training Plan and coordinates among other departments.

The region's fifth Basque Vocational Training Plan is synchronised with the region's employment, education and industrial strategies. The new plan emphasizes the 4.0 context by introducing a greater number of innovative tools, such as smart systems, while facilitating more teaching flexibility. The plan foresees the creation of a Basque Institute for Future Apprenticeships, which will observe job market trends and define professional profiles. The plan also emphasizes a greater number of partnerships and exchanges internationally, and a particular collaboration with the Department of Agriculture, Fishing and Food Policy in order to reflect the region's push in the circular economy, bio-economy, sustainable construction and bio science. The Vocational Training Department, the Basque Vocational Training Board, Tknika, the Basque Institute of Future Apprenticeships, the Basque Institute of Talent in Vocational Training and vocational training centres will carry out different elements of the plan, often in collaboration.

VET has been developed for different skill levels in the region, tailoring training to candidates' prior educational attainment. VET comprises all skills levels to achieve qualification for 170 occupations classified in professional groupings (*familias profesionales*), such as health services or the textile industry. The Basque government divides VET into in-school modules, practice modules in training institutes and short on-the-job parts in real companies. In turn, these modules correspond to different

[70] Reports include - OECD (September 2020) Policy Brief - Improving Evidence on VET comparative data and indicators, OECD (Kis, 2020) Social, Employment and Migration Working Papers No. 250 - Improving evidence on VET: Comparative data and indicators; OECD (2019) Education at a Glance OECD Indicators; OECD (2019), *Education Indicators in Focus*, No. 68., "What characterises upper secondary vocational education and training?"; OECD (2014) Reviews of Vocational Education and Training Skills beyond School Synthesis Report; OECD (Álvarez-Galván, 2014) Reviews of Vocational Education and Training - A Skills Beyond School Commentary on Northern Ireland.

[71] OECD review of the Basque country - https://www.oecd-ilibrary.org/sites/c5a66628-en/index.html?itemId=/content/component/c5a66628-en

[72] Reproduced from OECD: Source data and reference materials available at: https://www.oecd-ilibrary.org/sites/c5a66628-en/index.html?itemId=/content/component/c5a66628-en

skill levels. Basic skills level training qualifies young people for helping positions and can be continued with further studies. This basic level is intended for young people between 15 and 17 years of age with compulsory secondary education, and requires the agreement of their parents. The medium skills level builds on the basic one and can be taken by young people above 25 years of age with competitive school and/or basic level training results. The high skills level (*técnico superior*), meanwhile, is meant for students who have passed the medium level or have graduated from a high school or university. It is meant to help students obtain qualification for practising higher qualified technical work or to enter university studies. Both medium and high-skills level trainings are subject to entry quotas and selection procedures depending on the number of applicants (Inspección General de Educación, 2018[20]).

Training institute teachers drafted training curricula jointly with training mentors in the companies based on the skills needs and the prior knowledge of applicants. The training institute takes on the overall responsibility for the training content and implementation of the curricula. The employer selects the applicants that are pre-selected and proposed by the institute and signs a dual education contract with the applicant. VET enrolment has grown as VET institutions have gained a more prominent role in the Basque Country. Between 2011 and 2019, enrolment in VET increased from approximately 34 000 to almost 40 000 people. Students have also chosen different sectors for training since 2011. Mechanical work still leads enrolment with over 6,200 students, or 15% of total programme enrolment, reflecting the region's industrial base. Some programmes have come to draw more enrolment over time, such as information and communication as well as socio-cultural and community services, which have risen respectively from 5.7% to 8% and 4.5% to 8% of total enrolment.

The quality of vocational training in the Basque Country is valued by employers and worker representatives. According to Confebask and CCOO, communication with companies helps design trainings that respond to actual skills demands of the Basque Country. In a recent evaluation of the Basque Employment Plan 2020 commissioned by the Basque Government, increasing dialogue with the firms has been regarded as positive, especially components involving on-the-job training along with classroom teaching. The growing international aspect of trainings, for example through links with the Erasmus+ programme, is also helping to provide extended valuable international experiences to vocational education students.

Automation, however, will significantly change many of the middle skill jobs for which the Basque VET system prepares students, requiring VET to adapt and employers to adjust on-work training. The Basque Country has prepared for these changes through multiple efforts. For instance, since its creation in 2004, the Tknika Centre for Applied Innovation in Vocational Training has played the unique role of connecting innovation in companies to training centres. The *Agenda Digital de Euskadi 2020*, meanwhile, constitutes a wide set of initiatives to accompany the digitalisation of Basque companies. The plan also includes specific initiatives to assist Basque SMEs, particularly those associated with the region's core manufacturing industry, in integrating digital technologies.

In 2004, the Basque Government opened *Tknika*, the Basque Centre for Applied Innovation in Vocational Training as part of the *Viceconsejería de Formación Profesional*, or government department dedicated for professional training, in the Basque Department of Education. *Tknika* was founded as a centre to tie training centres with companies, in order to connect innovation with training. As part of the *Fifth Vocational Training Plan 2019-2021* and *Law 4/2018* on professional training in the Basque Country, *Tknika* becomes the "technical body responsible for research and applied innovation and the transfer of the results of R+D+I projects to all the centres that provide vocational training in the Basque Autonomous Community". The plan sets out several roles for *Tknika*:

- Conduct research in VET innovation;
- Encouraging relations between innovation and educational actors;
- Training VET teachers in innovation in production processes, with a focus on new learning environments;

- Encouraging the internationalisation of VET training in the region;
- And stimulating entrepreneurship among students.

As such, *Tknika* plays the unique intermediary role between VET centres, universities and research centres and Basque companies. The centre stresses technological innovation in VET centres, with a range of activities from digitisation, connectivity and advanced technologies. *Tknika* also has a particular focus on creating partnerships between training centres and SMEs, as these may not have access to the innovation resources of large companies while also constituting a major employment base. As part of this process, *Tknika* works with SMEs in the region to develop applied innovation projects, guiding them step-by-step through innovation projects. Interest in dual education is growing among students and employers in the Basque Country. Dual education is a set of hybrid training-employment initiatives, most common in Vocational Education and Training (VET), that equip students with demanded skills by companies in real work environments. In the Basque Country, 1,913 apprentices took part in the 2017-2018 cycle, as did 1,122 companies, while 96% of trainees entered employment after graduation. In a recent survey, graduate, employers and training institutions tended to evaluate dual education positively (Gobierno Vasco, 2018). The classroom component of dual education allows students to improve their qualifications, while the practical component opens access to employment from a direct contact with companies. Companies who take on apprentices in the dual scheme are also more likely to keep them upon graduation and offer them a longer employment contract. Germany's dual education system, for example, benefits from a regular uptake rate of apprentices of over 95% . In Slovenia, the country helps students develop individualised apprenticeship plans, a helpful policy to help ensure students are supported through their apprenticeship.

Dual education is anchored in workplace training

Dual education privileges time in the workplace in the Basque Country. Two-year programmes enrich the skills students have acquired in vocational education by offering between 800 and 1,200 hours in companies, while the three-year programme adds over 3,000 hours of working in the company, and approximately 1,500 hours in the classroom. During the first year of the dual education the time spent in the company cannot exceed 75% of the overall training time, while in the second year, it has to be less than 85%. In the region, the *Dual to World* programmes adds one year to the three-year programme, placing apprentices abroad, usually in an international branch or representation of the company in which have been training. Subsidies are also available for dual education, for example for students with disabilities.

Dual education is well-established in middle and high level VET in the Basque Country

Dual education is expanding across sectors and education levels. In the Basque Country, dual VET is available in 20 professional sectors, in which approximately 1 200 students participate each year. Dual training at universities is starting as well, with trials in some degrees such as Engineering in Process and Product Innovation opening 50 spaces in the 2015-2016 school year. Dual VET is currently offered in 97 training centres in the Basque Country. Almost 90% of the more than 41 000 enrolled students in 2019 are being trained in middle or high level skills. More than half of the students qualify for occupations in the service sector, while 45% enter industry.

Dual education can continue to expand in the region, while greater evaluation could also guide development

Instructors, employers and students can all be informed about dual education possibilities in the region to ensure they have equitable access to this policy. In particular, policymakers are considering widening the opportunities and making it easier for small and medium sized enterprises to participate in apprenticeship schemes and find ways to have less-skilled people enter dual education programmes. At the same time, teachers need to be provided with the necessary skills to take advantage of the scheme. Dual education can continue to be expanded to universities, including by

considering apprenticeship contracts in master's degrees. Systematic evaluation of the paths of dual education graduates may also help adjust curricula and programming.

Conclusion

Educational attainment in the Basque Country has risen significantly in the last 20 years, though the evolution of Basque jobs has not mirrored this trend, as 30% of workers in the region are working in jobs below their qualification level. Evidence suggests skills mismatch and low job quality may be main drivers of over-qualification, including the under-utilisation of skills, wages and contract stability. As part of strong workforce strategies, adult learning and social dialogue has progressed in the region, constituting opportunities for the region. As Vocational Education and Training (VET) has grown in the Basque Country, the region could use dual VET apprenticeships as a way to tighten links between the skill needs of employers and those of the workforce, particularly as technology reshapes many middle skill jobs.

The European Centre for the Development of Vocational Training (CEDEFOP)

Formed in 1975 as an agency of the European Union, CEDEFOP provides the evidence on which to base European vocational education and training policy and identifies trends in and challenges for VET systems. CEDEFOP produces full country level VET assessments[73] which provide an in-depth analysis. The CEDEFOP report 'VET 2018 compilation Vocational education and training systems in Europe[74]' is the most accessible review of European VET systems, providing standardised summary information, including the UK, Ireland, the Netherlands, Germany, Finland and Denmark (excludes the Basque Country and Switzerland.

The CEDEFOP summaries for these countries are reproduced here.[75]

VET in Germany

Vocational education and training (VET) in Germany is based on cooperation between the State, companies and social partners. The Federal Ministry of Education and Research (BMBF) is responsible for general VET policy issues and has a coordinating and steering role for all training occupations in cooperation with the respective ministries. The BMBF also works closely with the Federal Institute for Vocational Education and Training (BIBB), which conducts research and advises the Federal Government and VET providers. The *Länder* (federal states) are responsible for school-based parts of VET and have VET committees with employer and employee representatives.

The apprenticeship programme (dual system) at upper secondary level (EQF level 4) is the main pillar of VET and also attracts upper secondary graduates: more than one in four apprentices had achieved a higher education entrance qualification before enrolling in apprenticeship. Programmes usually last three years and combine two learning venues, companies and vocational schools (work based learning share approximately 75%). There are no basic access requirements for participating in the dual VET programme, but an apprenticeship contract must be concluded between learner and company. Enterprises bear the costs of company based training and pay learners a wage. Those successfully completing training are qualified to be employed as skilled workers. Progression is possible through various VET programmes offered at post-secondary and tertiary level. Parallel to the apprenticeships are school based VET programmes at upper secondary level (EQF level 2 to 4), which differ in terms of access, length, types and levels of qualification they lead to.

[73] CEDEFOP country level assessment are available here: https://www.cedefop.europa.eu/en/countries
[74] Available at: https://www.cedefop.europa.eu/en/publications/4168
[75] Source document can be accessed here: https://www.cedefop.europa.eu/en/publications/4168

These include:

- programmes at full-time vocational schools (*Berufsfachschulen*, duration one to three years depending on the type and level of qualification), leading, for example, to a qualification as nurse or childcare worker. The minimum entrance requirement is the lower secondary general school certificate (*Hauptschulabschluss*);
- general upper secondary programmes with a vocational component, which usually lead to the general higher education entrance qualification (*Berufliches Gymnasium/Fachgymnasium*, duration two to three years). Entrance requirement *Schulabschluss*).

Young people with social disadvantages, learning difficulties or disability, or insufficient German language skills (migrants) have the possibility to qualify further through different transition programmes: the pre-vocational training (secondary school leaving certificate can be acquired) or basic vocational training year.

At post-secondary level, specialised programmes (*Berufsoberschulen* and *Fachoberschulen)* build on the intermediate school leaving certificate (*mittlerer Schulabschluss*) or initial VET and impart deeper occupational knowledge. They last one to three years and lead to entrance qualifications for universities of applied sciences or universities.

At tertiary level, vocationally qualified applicants can access advanced vocational training (AVT) leading to qualifications at EQF level 6, including master craftsperson, technician, and specialist (*Meister, Techniker, Fachwirt*). AVT confers the right to exercise a trade independently, to hire and train apprentices and to enrol in subject related bachelor programmes. It also facilitates the acquisition of middle management qualifications in companies. AVT is a major factor contributing to the attractiveness of the VET pathway. Courses to prepare for these AVT qualifications are offered by chambers or schools (*Fachoberschulen*, master craftsperson schools). Access to the respective assessment generally requires several years of practice in the related occupation.

Practice-oriented learning is also an important element of higher education (EQF levels 6 to 7). Dual study programmes provide a blend of vocational and academic training, offered by universities of applied sciences (bachelor programmes) and other higher education institutions (*Berufsakademien, duale Hochschulen*). Some of them lead to double qualifications (vocational qualification and bachelor or master's degree). Enterprises bear the costs of company-based training and pay learners a wage based on a contract. Continuing training is playing an increasingly important role in improving employability. It is characterised by a wide variety of training providers and a low degree of State regulation.

Germany recently published a new Skills Strategy (2019):
(https://www.cedefop.europa.eu/en/news/germany-national-skills-strategy-2019-review)

VET in Finland

The Ministry of Education and Culture (MoEC) is responsible for strategic and normative steering of vocational education and training (VET) and leads national development. National VET objectives, the qualifications structure and core subjects are determined by the government.

Authorisations to provide VET are granted by the MoEC. They cover VET fields, qualifications, number of students, language of instruction, locations, special educational tasks and other issues. VET providers may also be assigned tasks to organise labour policy education.

A VET provider may be a local authority, municipal training consortium, foundation or other registered association or State-owned company. They organise training in their areas, matching provision with

local labour market needs. They decide independently on issues such as type of education and training provided, and ways of completing studies, within the limits of their authorisation from MoEC. More than 40% of students who completed basic education start initial VET (IVET) immediately after; most of these obtain their VET qualifications at vocational institutions. Vocational qualifications are available for both young students and adults.

There are 52 vocational qualifications (EQF 4) and nearly 110 further vocational qualifications (EQF 4) and specialist vocational qualifications (EQF 5) in different fields. The most popular fields are technology, communications and transport, and social services, health and sports. Half of the students are female, though the proportion varies greatly from field to field. Admission to IVET programmes is based on a lower secondary education (basic) certificate; for CVET it is on a case-by-case basis, taking work experience into consideration.

An initial vocational qualification requires 180 competence points (cp). Nominal duration is three years depending on the individual personal competence development plan. In addition to vocational units, vocational qualifications include 35 cp of common units (of the 180) such as communication and language skills, mathematics, citizenship and skills needed in working life. Further vocational qualifications require 120,150 or 180 cp and specialist vocational qualifications 160, 180 or 210 cp, consisting mainly of vocational units. All include work-based learning. All qualifications can be obtained in apprenticeship training which also includes courses at vocational institutions. The share of work-based learning is 70% to 80%. Most apprentices are adults. All VET programmes ensure eligibility for higher education studies.

National qualification requirements ensure standardised vocational competence; they are the basis for evaluating learning outcomes. The Finnish National Agency for Education (EDUFI) develops the qualifications in broad cooperation with stakeholders (employers' organisations, trade unions, the Trade Union of Education, and student unions). Representatives from enterprises contribute to development of national qualification requirements; they also organise and plan training at workplaces and competence tests, as well as assessing the tests. Flexibility and personalisation have become means to respond to changing labour market requirements and individual student needs. Modularisation allows for a degree of personalisation of qualifications; for example, students can choose modules from other vocational qualifications (including both further and specialist vocational qualifications) or universities of applied sciences degrees. The VET system was reformed as of 2018, with the following focus:

- students may apply for studies at any time of the year;
- VET for young people and adults is in the same framework and regulated by a single act on VET;
- there is a single competence-based method of completing qualifications;
- each student's prior learning is accredited and a personal competence development plan drafted. This defines the skills still to be acquired for obtaining the qualification;
- VET providers are encouraged to organise more learning at workplaces;
- one coherent funding system is applied for IVET, CVET, apprenticeship training and labour market training leading to qualification.

VET in Ireland

Most vocational education and training (VET) occurs within the State sector, although private providers also play a role. Ireland's education and training system is divided into four sectors: primary, secondary, further education and training (FET), and higher education. Until 2016, VET occurred mostly within the FET sector. However, following reform of the FET sector and a review of the apprenticeship system, higher education providers have, since late 2016, offered a limited number of apprenticeship courses, with the number of programmes and learners expected to increase in the medium term.

Within the FET sector, the main providers of VET are 16 education and training boards (ETBs) countrywide. Responsibility for funding, planning and coordinating FET programmes at ETBs lies with SOLAS, Ireland's Further Education and Training Authority. Other statutory providers include BIM (seafood industry training) and Teagasc (agricultural training). These bodies are publicly funded. Some programmes are jointly financed by the European Social Fund. Within the higher education sector, VET programmes are the responsibility of the Higher Education Authority (the statutory planning and policy body for higher education). VET is provided by institutes of technology and, to a lesser extent, by universities and other higher education providers.

Most learners undertake VET courses on completion of upper secondary education. While it is possible to enter some apprenticeship training with NFQ level 3/EQF level 2 qualifications, most pupils attain upper secondary awards at NFQ level 4/5 (EQF 3/4). VET programmes within FET include:

- apprenticeship training, combining off-the-job training (in ETBs and institutes of technology) and on-the-job training (with an employer). Training leads to awards at either NFQ level 5 or 6 (EQF 4 or 5). Traditionally, apprenticeships in the FET sector were concentrated in the construction/engineering sectors. However, new post-2016 apprenticeships have been extended to include other sectors (such as hospitality, transport, retail, ICT and finance);
- traineeship, an occupational skills development training model designed to meet the needs of local employers. Training takes place both on and off-the job and leads to awards spanning NFQ levels 4 to 6 (EQF 3 to 5). Partial awards are also made. Trainees may include school leavers, older learners, the employed and the unemployed;
- post leaving certificate courses (PLCs), delivered in ETB colleges or second-level schools; they comprise general and/or vocationally oriented education. Typically, training is in areas such as technical knowledge, personal/core skills and some work experience; PLCs lead to an NFQ level 5 or 6 award (EQF 4 or 5). Partial awards are also made.

VET at tertiary level: apprenticeship courses in this sector were formally introduced in 2016. They combine off-the job training (including online) with on-the job training with an employer. Training occurs in a variety of sectors, including financial services, engineering, and hospitality. On completion, learners can achieve awards spanning NFQ levels 6 to 9 (EQF 5 to 7). Expansion to NFQ 10 (EQF 8) is due in 2019 in the engineering sector. VET programmes are also offered for second chance education and training.

- VTOS (vocational training for the unemployed) and specific skills training for the unemployed in a vocational skill (such as computer hardware maintenance) are delivered by ETBs. Full and partial awards are made, at NFQ levels 3 to 6 (EQF 2 to 5).
- *Back to education* initiative (part-time for adults). This programme offers a mix of general and VET courses, with full and partial awards spanning NFQ levels 1 to 6 (EQF 1 to 5). Other education and training programmes are also provided in second chance education, with full and partial awards at NFQ levels 1 to 6 (EQF 1 to 5); they are delivered mainly by ETBs.
- *Youthreach* (for early school leavers aged 15 to 20).
- Literacy training and other further education and training.

VET in the Netherlands

Study results and advice from school determine the type of secondary education that learners follow after leaving primary education at age 12. In 2017, in the third year of secondary education, 53% of students followed lower secondary pre-vocational programmes (VMBO). Almost half of VMBO students are in vocationally oriented programmes; the rest follow general programmes offered by VMBO schools. VMBO is the main route to upper secondary vocational education and training (VET). Apart from lower secondary pre-VET programmes, there are also general programmes that prepare students for higher education: integrated lower and upper secondary education (HAVO) and pre-university education (VWO). Some 45% of students in the third year of secondary education took part in one of these programmes in 2017. Labour-oriented practical training (*praktijkonderwijs*) is available for learners not capable of entering pre-vocational education.

Upper secondary VET

Learners aged 16 or above can enter upper secondary VET (MBO). Three structural elements determine provision of MBO programmes, with differentiation according to:

- level: upper secondary vocational education has four levels leading to EQF levels 1 to 4. Student admission to a level depends on the diploma obtained in prior education. Admission to level 1 programmes is limited to learners without a prior qualification at lower secondary level. It is possible to progress within upper secondary VET and the highest level (leading to EQF 4) gives access to higher professional bachelor programmes offered by universities of applied sciences;
- area of study: upper secondary VET programmes are available in four areas ('sectors'): green/agriculture, technology, economics and care/welfare; -- learning pathway: upper secondary VET offers two equivalent pathways: a school-based (BOL) and a dual (BBL). In the school-based pathway, work placements in companies make up 20% to 60% of study time. In the dual pathway (apprenticeship), students combine work-based learning (at least 60% of study time) with school based instruction; this often involves learning at work four days a week and one day at school.

In upper secondary VET, the desired outcomes of qualifications are defined in the national qualifications system. Occupational standards cover one qualification profile or several interrelated ones. Social partners and education institutions represented in sectoral committees have a legal responsibility to develop and maintain these standards. Once approved by the education ministry, schools – in cooperation with enterprises providing work-based learning – develop curricula based on the qualification profiles.

Post-secondary VET

Specialised programmes (EQF 4) are open to graduates of MBO programmes (EQF levels 3 to 4). Their duration is one year.

Tertiary VET

Higher professional bachelor programmes (HBO) are open to all EQF level 4 graduates. Around 39% of graduates of middle management VET programmes enter HBO programmes; 61% enter the job market. HBO programmes last four years. On completion, they can give access to a professional master's degree programme, an option not yet extensively used. Two-year associate degree programmes (short cycle higher education, EQF 5), also open to all EQF level 4 graduates, have recently been developed. Graduates can continue to HBO programmes; their remaining study load is subject to exemptions granted by each programme.

Continuing VET

There is no institutional framework for continuing VET (CVET): provision is market-driven with many suppliers. Dual VET (the BBL pathway) can also function as CVET for adults. Social partners stimulate

CVET through sectoral training and development funds. In 2017, there were 85 such funds. Most approach and finance training from an employability perspective. They help employees progress in their careers, sometimes even in other sectors, offer special arrangements for older workers, and support the development of effective human resource management policies at sector level. Most funds also support projects that help young people find employment or take initiatives to sustain or expand apprenticeship places.

VET in Denmark

Vocational education and training (VET) plays a key role in the Danish strategy for lifelong learning, alongside meeting the challenges of globalisation and technological change. An inclusive and flexible initial VET system helps ensure that all young people have the opportunity to acquire competences to aid smooth transition to the labour market. Adult education and continuing training respond to structural and technological changes in the labour market and provide the workforce with new and updated skills.

Danish education and training features a mainstream system providing qualifications at all levels, from compulsory schooling to doctoral degrees, and a parallel adult education and continuing vocational training (CVT) system. Adult education and CVT are designed to meet the needs of adult learners, for example through part-time courses. The two systems offer equivalent qualifications at various levels, enabling horizontal permeability. VET jurisdiction is with the Ministry of Education, which maintains close dialogue with social partners to respond to labour market needs. Initial VET is organised into four broad entry routes; care, health and pedagogy; office, trade and business services; food, agriculture and 'experiences' (an umbrella term for tourism and recreation); and technology, construction and transportation.

Programmes are organised according to the dual principle, alternating between periods of college based and work-based learning (apprenticeship training) in enterprises. A typical initial VET programme (EUD) lasts three-and-a-half years with a 2:1 split between workplace and college based training, although there is considerable variation among programmes. Individual study plans are compiled for all students. VET colleges and social partners share the responsibility for developing curricula to ensure responsiveness to local labour market needs. Qualifications at this level provide access to relevant fields in academy profession (KVU) programmes and professional bachelor programmes at tertiary level.

Alternative routes to VET qualifications include:

- combined vocational and general upper secondary education (EUX, an academic preparation programme), a relatively new pathway, which lasts around four years. It enables highly motivated students to obtain access to higher education along with a vocational qualification;
- 'new apprenticeship' (1) (*Ny Mesterlare*) programmes, where the entire training takes place at a company instead of partly at a VET college. Students with a practical approach to learning benefit from these programmes;
- combined post-compulsory education for people aged 15 to 24 who do not possess the necessary vocational, personal or social skills to complete a VET programme;
- basic VET (EGU) for lower secondary graduates, with a practical approach to learning. The programme caters to the young unemployed, lasts three to four years, and includes at least 75% of work-based learning (WBL).

Adult learning

VET for adults aged 25 or older (EUV) has been established as a specific track to offer the low skilled an attractive and goal-oriented path to become a skilled worker. Adults with at least two years of work

experience can receive VET education without the basic programme and without internship. Adult vocational training (*arbejdsmarkedsuddannelser*, AMU) provides participants with skills and competences relevant to the labour market and is primarily geared to specific sectors and jobs. The programmes help learners either deepen their existing knowledge in a particular field or develop new knowledge in related fields. AMU programmes (around 3 000) last one week on average and are created, adapted or discontinued in response to labour market needs. At tertiary level, further VET and adult education programmes lead to EQF level 5 qualifications.

VET in the UK

VET in the United Kingdom Vocational education and training (VET) is available at secondary and higher education levels through public and private providers. VET qualifications exist in a wide variety of sectors and prepare learners for work and further study. Education or training is compulsory up to age 16 (18 in England). For learners up to 18, VET is funded by government agencies. Adult learners are eligible for grants and, in some parts of the UK, also loans.

Predominantly school-based programmes, combining general academic study with VET elements, exist alongside broad VET programmes and specialist occupational programmes. Work based learning may take place both in a VET provider setting and a workplace. Most VET programmes can be accessed from age 15/16, although learners can be introduced to VET earlier. VET is offered full- and part-time; students may attend training on a block- or day release basis from employers, or attend evening or weekend learning. Programme duration varies by subject area and type of learning and is between one and four years.

Apprentices are employed and are taught core, transferable skills. Technical and occupational learning take place on and off the job. A national qualification is awarded on completion. Demand for apprenticeships is rising and competition for the best apprenticeship places is increasing. More apprenticeships are being developed at higher education level in response to current labour market needs. There is a well-established system for VET learners in the UK to progress to higher education. Candidates holding an EQF level 4 VET qualification, or a combination of VET and general qualifications and subjects, may access selected first-cycle university programmes at institution discretion depending on the subjects' relevance to future studies. However, there is no automatic right to progression from one qualifications framework level to the next as education providers and awarding organisations can set entry requirements for individual qualifications. Across the UK there are also good articulation options for progression from higher VET programmes (EQF level 5) to the second or third year of a bachelor's degree in a related field.

The UK government has devolved decision-making powers in several areas of policy, including governance of VET, to the administrations in Scotland, Wales and Northern Ireland. While there are similarities between education and training systems in England, Wales and Northern Ireland, reforms are creating greater divergence. Qualifications and the qualifications framework levels are different in Scotland from the rest of the UK.

The qualifications market in the UK is jointly driven by government policies and private interests, increasingly through direct employer engagement in VET qualifications design. This has led to a large choice of qualifications and awarding organisations. Qualifications are designed and issued by independent awarding organisations. Some offer a large variety of qualifications, often both general and vocational; smaller ones often specialise in a specific professional area.

VET providers include secondary schools, school sixth forms, sixth form colleges, further education colleges, higher education institutions, private training providers, and employers. The regulated qualifications framework for England and Northern Ireland has, from 2015, removed prescriptive unit and credit requirements to give awarding organisations increased freedom and flexibility to develop

VET qualifications that meet labour market needs. Qualifications frameworks in Scotland and Wales have retained their unit and credit structure.

Many VET learners are adults. Adult and continuing education is part of the formal education system, but is also offered as non-formal training by employers and training providers. Trade unions, employer organisations, sector skill councils and other social partnerships are involved in providing adult education, developing learning resources and anticipating labour market needs.

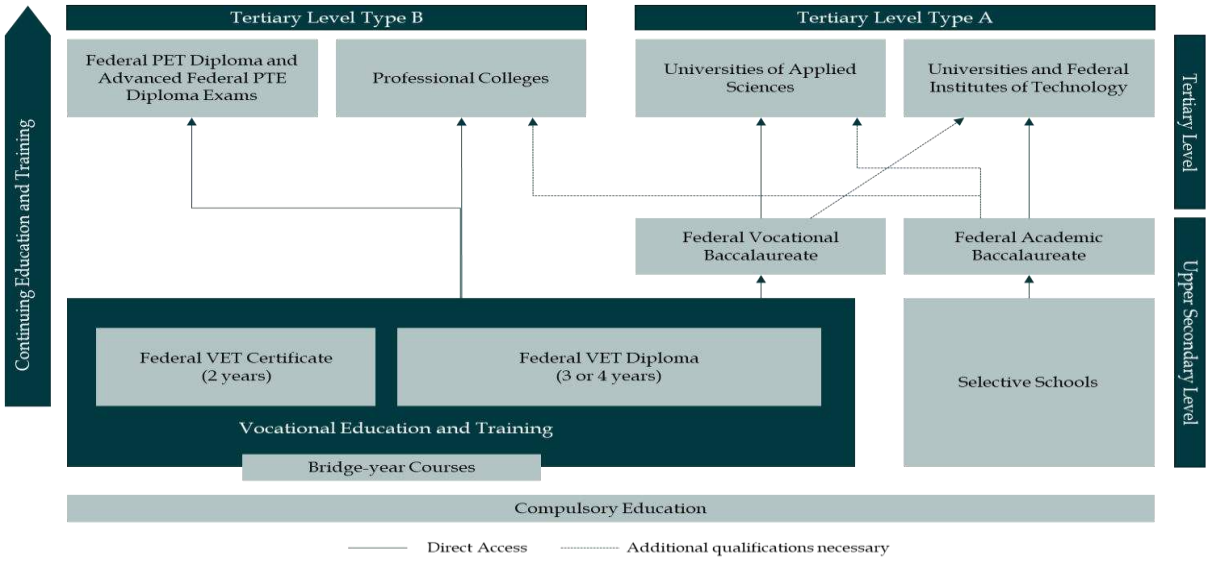
Dual VET Model

From an article by EdventureCo[76] (which does not feature any of the home nations) four models of vocational education and training are suggested, two of which cover countries of interest in this review:

- Dual VET (Germany, Switzerland and Denmark, plus Austria)
- School-Based VET (Finland, plus Poland, Slovenia and Lithuania[77])
- Career Education (Singapore)
- Regulated Training (Australia and New Zealand)

The article notes that the essential difference between each model relates to which party holds the balance of power in designing curricula and delivering vocational education programmes i.e. the balance between government and the private sector (including trade associations). The Dual VET model is driven primarily by the private sector while in a Regulated Training ecosystem, the government is the key player. The Swiss VET model is considered the gold standard, with Finland also regarded as a world leader.

Dual VET MODEL (EdventureCo)



[76] EdventureCo (2019) Vocational Education and Training : what is the "gold standard" model for delivering VET? Available at: https://edventureco.com/2019/03/27/part-ii-vocational-education-and-training-what-is-the-gold-standard-model-for-delivering-vet/

[77] CEDEFOP defines the UK's VET system as 'predominantly school-based'.

(Source: EdventureCo: https://edventureco.com/2019/03/27/part-ii-vocational-education-and-training-what-is-the-gold-standard-model-for-delivering-vet/).

Drawing on Switzerland as an example of the Dual VET Model, the key features are defined as follows:

- *"Earn while you learn" apprenticeships focused on workplace on the job training* – in Switzerland, 15 to 16 year old students who are about to complete the compulsory school education system have a choice of two main options for the continuation of their education and training: VET or general education (the latter with a view to going on to an academic tertiary pathway). Two-thirds of Swiss students choose a VET programme. A typical VET programme would involve doing a 2 to 4-year apprenticeship and combines classes at a vocational school with on-the-job training at a host company. Therefore, it is called a dual VET model. On average, a Swiss VET student spends between 60 to 80 percent of their time in workplace learning under a work contract. Upon graduation, apprentices receive a nationally recognised VET diploma. During the programme, the host company pays the apprentice a salary, which increases with each completed year. The concept of earning money while still getting an education is a significant incentive for future apprentices. Salaries vary depending on the occupation and are lower than what regular employees would earn. From an employer's perspective, they benefit from lower cost labour that is being skilled up in a practical and relevant manner that suits their requirements;

- *Public private partnerships where the private sector primarily drives curricula design and funds delivery* – professional organizations (employers and trade associations), cantons (state governments) and the Swiss Confederation (federal government) collaborate closely to define curricula, skill sets and standards for various occupations nationwide. In a dual VET model, the government and trade associations recognise that the most important partner is the private sector and it is employers and trade associations that lead in both design and delivery of curricula. It is these companies that employ apprentices and provide on-the-job education and training, and also pay for the courses attended by apprentices. In the process, they provide approximately 60% of the funding for a VET student. They are also responsible for leading the continuous updating of the content to achieve the relevant qualifications. The cantons are responsible for funding the VET schools as well as career services and teacher training, contributing approximately 30% of the cost of funding for a VET student. The Swiss Confederation is responsible for quality control, compliance, transparency and system strategic development and effectively contributes 10% of the cost of funding for a VET student.

- *Permeability of education pathways enables "lifelong learning"*- a critical aspect of a dual VET system is permeability between different education pathways. The Swiss system intentionally provides many pathways to allow students to move seamlessly between academic and vocational studies as well as seamlessly from VET on to higher education at a university of applied sciences. As a result, there is almost complete permeability that enables students to undertake continuous learning and training in VET or tertiary programmes. For example, when an apprentice graduate, a student can elect to take additional classes (leading to further accreditation) at a professional college or even choose to embark on a tertiary university qualification. The fact that you choose a VET pathway at 15-16 years of age does not preclude you, later in life, from pursuing a university degree in future, or vice versa. It is also very easy to completely change one's professional field.

Finland operates a School Based VET model. This model is similar to the Dual VET model with the key difference being the emphasis on training delivered in a classroom, rather than the workplace. The key features of a School Based model include as follows:

- *Curricula delivery more focussed on classroom based training* – in a school based VET model, an apprenticeship style contract between a VET student and a private sector employer is atypical. Most of the delivery is done in classrooms and whilst the percentage varies from country to country, this usually represents more than 50% of the programme. However, at least some of the delivery will be conducted in a workplace environment.
- *Private sector drives curricula design but not delivery* – as is the case with a dual VET model, the private sector drives design and updating of curricula. This confers the benefit of ensuring skills are relevant and contemporary, as is the case for a dual VET programme. However, the private sector is less active in the actual delivery of programmes. Funding is primarily from the public sector in the form of subsidies.

The school based VET model is similar to the dual VET model but has less private sector involvement and has a heavier classroom delivery weighting.

This section has illustrated a number of comparative VET systems found across Europe – UK, Ireland, Switzerland, the Basque Country, Germany, Finland, the Netherlands and Denmark. Inevitably the question arises as to the potential transferability of VET models, in whole or in part, to other countries. To consider some of the challenges relating to model transferability, the next section identifies some of the challenges, focussing on the German VET model which has been cited by a number of UK governments, from the Richards Review of Apprenticeships (2012), as a model of good practice.

Brief review of the German dual VET system

Deissinger (2015) reviewed the German dual vocational education and training system, highlighting that in the 'Dual System' learning takes place at two 'learning venues' - the company, which offers and funds the apprenticeship, and the part-time vocational school (Berufsschule), where the apprentice receives theoretical instruction and studies general subjects including German, Mathematics or Social Studies, typically for two days in the week. The company provides practical training. Apprentices attend vocational school up to the age of 18, and up to that point the company is obliged to release young people for lessons and examination at school. Within the Dual System, the state's role is clearly defined through Education Acts. The federal states design and develop syllabuses for vocational and general subjects for each occupation. Deissinger notes that against 'this background, the Dual System is a setting for VET, where private (the companies), semi-private (above all the chambers) and public interests and responsibilities (the government), including the trade unions, merge. This has been proved by numerous studies concerned with the implementation of the Dual System in developing countries' (p.564)

Table 4. Dual VET system learning venues.

Learning venues	Berufsschule (vocational school)	Ausbildungsbetrieb (training and apprenticeship facility)
Legal status	• Public	• Private
Supervision	• School administration	• 'Competent authorities' (chamber system)
Legal basis	• Education law (federal state)	• Vocational training law (central state)
Young person's status	• Student	• Apprentice
Training personnel	• Vocational teachers	• Master workers, trainers
Didactical instrument	• Vocational syllabus	• Training ordinance
Form of learning	• Classroom instruction	• Workplace or workshop instruction
Contents of learning	• Theoretical	• Practical
Kind of award	• School certificate	• Chamber award

(Source: Deissinger, 2015, p.562)

Despite the reputation of the model, Deissinger cautioned that there remains 'substantial scepticism as to transferring or copying the features of the German 'training culture' into other socio-cultural contexts' (2015, p.564), suggesting that the German model relies heavily on a strong economy and a sound labour market.

Pinnow (2019) also noted that the German VET system emphasises 'learning by doing', with trainees from day one of their apprenticeship spending about 70% of their time (3-4 days a week) in the workplace i.e. in the company. The duration of training is circa three years, with mid-term and final examinations within the dual system organised by the chambers of commerce, including both theory and practical exams. The examination board is composed of representatives of employers, employees and a vocational schoolteacher (government). Should a trainee fail the final examination, the contract is extended until the next possible examination date, to a maximum of one additional year. Haasler (2020) has highlighted a recent challenge to the German VET system from other available training routes gaining significance, particularly the tertiary education path. A potential weakness of the system stems from the difficulty lower achieving young people, including migrants and refugees, have had in accessing programmes. In effect the dual system provides training options for highly skilled young people.

Oeben and Klumpp (2021) also highlighted the importance of the two learning environments, the commercial firm (the company) and the vocational school. On the transferability of the German VET system, they reviewed a number of factors highlighted in the literature.

- Stockman (1999) identified the following success factors for transfer projects: careful planning, attention to framework conditions, flexible management, manageable and results-oriented monitoring and evaluation systems, the efficiency of the provider, ownership, and qualified and committed personnel.
- Gonon (2014) noted seven criteria: the readiness of companies to train, duality of learning sites (workplace and school), the formalization of the dual model, access to codified scientific knowledge, a cooperative model of governance including social partners, vocational practice as the main learning activity, and career relevance.
- Bliem, Petanowitsch, and Schmid (2014) noted seven factors of the Austrian dual VET model:

    - governance and financing (social partners—especially companies—are the carriers of the vocational training,

- vocational concept (vocations are more than jobs),
- benefits for the companies (an apprenticeship is also useful for the training company),
- mechanisms of quality assurance (quality is the responsibility of all stakeholders),
- customization and innovation mechanisms (an apprenticeship adjusts to changing qualification requirements),
- demand from young people (an apprenticeship as an attractive training path for young people),
- administration and implementation (a lean administration and clear, transparent processes).

The European Commission Guidebook[78] provided an overview of the main vocational and apprenticeship programmes in each member state in the period 2007–2012.

- Factors included:
    - apprenticeship and traineeship
    - a robust institutional and regulatory framework
    - active social partner involvement
    - strong employer involvement, a close partnership between employers and educational institutions
    - funding including employer subsidies and other incentives
    - close alignment with the labour market needs
    - robust quality assurance
    - high-quality guidance, support and monitoring of apprentices/trainees
    - the appropriate matching of apprentice/trainee to host organization (company)
    - a combination of theoretical, school-based training with practical work-related experience
    - the existence of an apprenticeship/traineeship agreement, certification of acquired knowledge
    - skills and competences
    - tailored and flexible approaches to the needs of vulnerable young people
    - the provision of adequate support, guidance and mentoring to the young participants, both at the workplace and at the sending organization
    - effective support and mentoring of the apprentice together with an individualized approach towards his/her learning needs and abilities
    - a mix of school-based training and practical work-based experience
    - social partner involvement
    - close links between education and business
    - rigorous certification procedures which lead to nationally recognised qualifications

Section 4 has provided an overview of international VET models from a number of relevant European countries including Switzerland, the Basque Country, Germany, Finland, the Netherlands and Denmark, set alongside the UK and Irish models. Though there are significant questions regarding the

[78] European Commission (2013). Apprenticeship and Traineeship Schemes in EU27: Key Success Factors. A Guidebook for Policy Planners and Practitioners. Report prepared by Ecorys, IES and IRS for the European Commission, Directorate-General for Employment, Social Affairs and Inclusion; European Commission: Brussels, Belgium. Available at: https://www.voced.edu.au/content/ngv%3A60320

transferability of each of the models, which tend to reflect national and/or local conditions, at a basic level two European VET models were illustrated; the dual-track VET approach found in Germany, Switzerland, the Netherlands, Denmark and the Basque Country; and the school-based model evident in the UK, Ireland and Finland.

In Section 5 an overview of the main findings from Sections 1-4 is presented, bringing together the emergent themes from the national level review of vocational qualifications, the academic and policy literature, the debate around BTEC assessment, and the comparator European VET models.

Section 5: Discussion and Conclusions

The devolved nature of decision-making powers in the UK in relation to the governance of vocational education and training models means that over time VET systems have continued to diverge, particularly with each new wave of reform to national systems, though of course similarities remain. For example, the qualifications framework in Scotland is unique within the UK context. Consequently there is no unified path for UK VET system, only increasing diversity, meaning that in each nation the VET model needs to be considered as a stand-alone unit. Comparability and/or replicability of elements of any one approach is limited.

The review of the evolution of the legislative environment in England (Section 1) from the Wolf Report in 2011 to the Department of Education's review of post-16 qualifications at level 2 and below in England (March 2022) illustrates a number of dominant and persistent themes and the complexity of the vocational education environment. Wolf highlighted how many of England's 14-19 year olds failed to progress successfully into either secure employment or Higher Education (HE), in part, it was suggested, due to the lack of equivalence between vocational qualifications and GCSEs, an issue which had the role of independent and external assessment at its core. The absence of external assessment is closely related to the issue of BTEC grade inflation, which in turn has been linked to challenges faced by BTEC students entering higher education. Wolf also recommended that that vocational studies should be limited to 20% of a pupil's timetable.

Subsequent reviews have highlighted the requirement that qualifications meet employer specifications, the need for a simplified and more flexible educational environment, enhancing the quantity and quality of apprenticeships, and ensuring students acquire the practical and technical skills to meet the entry requirements for both academic and vocational pathways. To illustrate the complexity of the environment the Department of Education (2019) reported that in 2016/17 the L4-5 market had 3,368 different L4-5 qualifications available to learners, including 735 developed by eight independent Awarding Organisations. From 2018 in order for inclusion in published performance tables, all new and redeveloped qualifications had to ensure that the proportion of the qualification's content that is externally assessed and the associated contribution to the overall grade was at least 40%. At the more granular level the report from the Higher Education and Policy Institute (2018) highlighted the decline in Level 4 and 5 provision, noting that over one third of young learners did not proceed from Level 2 to Level 3, and over a fifth of all learners did not progress from Level 3, i.e. 57% of young learners do not progress to Level 4 or above. The drive for simplicity was key to the introduction of T Levels, primarily aimed at 16 year olds at the start of technical routes. In its review of post-16 qualifications at level 3 in England, the Department for Education (2021) re-emphasised the need for simplification, based in part on its review of international good practice of high performing technical education systems in the Netherlands, Germany and Switzerland, where typically there were around 500 or fewer technical qualifications each at levels equivalent to Level 3 and below. A key facet of the international comparators is employer endorsement - employers are confident that technical education and training systems produce employees ready for work. In effect the emerging Department model in England endorses a system in which employers work in tandem with FE to co-design and co-deliver bespoke curricula.

In Northern Ireland many of these themes are evident. The Department of Education (2015) highlighted the need for a professional and technical offer at level 2 to facilitate transition into employment and access higher levels of education and training, emphasising apprenticeships. DEL's strategy reinforced the need for employer engagement in curricula content design and delivery. The

Department for the Economy (DfE, 2021) also highlighted the role of Northern Ireland's FE sector in addressing the skills deficit, recognising the FE sector as the primary provider of education at levels 4 and 5 and vocational qualifications at level 3. In 2021 DfE announced a substantial investment in the NI Traineeship scheme developed in partnership with employers, delivered by the six FE colleges, a programme which would provide a full Level 2 qualification (equivalent to five GCSE passes). The challenge for the sector is demonstrated by the latest NISRA figures (2022) which indicated that FE enrolments have decreased by over a third between 2016/17 and 2020/21.

In Scotland the Stobart Report (OECD, 2021) reviewed upper-secondary education student assessment in Scotland in comparative perspective, whilst the Muir Report (2022) situated school education in its broadest context, aligning health and wellbeing with outcomes including vocational qualifications. In Wales, Qualifications Wales is undertaking a series of sectoral reviews for vocational qualifications focussed on the skills required by employers. In Ireland, government Green papers have addressed the Assessment of Learners and Learning (2018), informed by the work of CEDEFOP, and the Qualifications System (2020) which assessed the National Framework of Qualifications.

In the academic and policy literature (Section 2) the unresolved central tensions at the heart of the vocational education debate are illustrated, particularly the tension between widening access and educational attainment in HE. The academic and policy literature highlights a range of key areas of contention and debate: the role of BTECs in widening access, the relative comparability of BTECs and A-Levels, barriers to recruitment and retention of BTEC students in HE, the role of, and challenges for, universities in facilitating the entry and retention of BTEC students, comparative student performance in HE, the tensions between vocational and academic qualification pathways, and comparative employment outcomes. BTEC students are more likely to attend low entry tariff universities (Gicheva and Petrie, 2018) and post-graduation achieve lower comparative wages (Social Mobility Commission, 2016). Despite this tension, there has been an increase in BTEC students attending HE institutions – in 2018 approximately 10% of students entering higher education (HE) in the UK had studied for a BTEC qualification (Herbert, 2019), but as Gartland et al. (2018) report BTEC students are less likely to achieve a 'good' degree. BTEC students also drop out of a degree course in greater numbers than any other group (Kelly, 2017), emphasising issues around relative student preparedness for HE. The rapid and continuing pace of change in vocational qualifications over the last three decades, compared to the stability of academic qualifications is cited as a significant negative factor impacting the FE sector (Policy Exchange, 2019).

More positively several studies have highlighted positive developments within the HE environment. Universities have recognised the range of issues highlighted here, and have responded positively to address the progression barriers experienced by non-A level students, the narrower choice of study options in HE (UCAS, 2021), BTEC students' experiences in university, and lower retention rates. Banerjee et al. (2017) suggested that universities could create more supportive learning environments to reduce inequalities in educational outcomes for the widening participation cohort. Al Meselmani et al. (2018) highlighted the challenges for A level equivalent students in terms of adjusting to teaching and assessment methods, whilst Peake (2018) questioned the validity of the assumption which views all new students as 'equal'. In turn Myhill et al. (HEFCE, 2019) and Huskinson et al. (2020) reported positively from the collaborative 'Transforming Transitions' project, which addressed differential outcomes and identified factors that might influence preparation, progress, retention and success, with a view to design support systems for BTEC students within the university setting. Key findings included the value of working collaboratively and in-depth with students, creating a sense of belonging for students in fostering academic success, and creating supportive digital spaces designed to build

student confidence. Such findings are undoubtedly of relevance to the current policy debate around the preparedness of BTEC students for the transition to university education.

At assessment level (Section 3) the policy debate has addressed the (de) merits of the BTEC assessment system; advocates defending the 'older style' BTEC system in terms of the reliability of internal assessment, progression and employability; critics viewing BTECS as over-valued, in need of re-evaluation, and requiring external assessment to both counter grade inflation (Gill, 2016), and ensure equivalence with A levels. In terms of grade inflation for the 'older style' L3 BTEC subsidiary diplomas (equivalent in size to an A level) OFQUAL (2017) reported that the proportion of students achieving top grades had increased by 40% between 2005/2006 and 2015/2016. The difference in the perceived value of the traditional level 3 BTEC for different stakeholders was reflected in OFQUAL research (2016) which reported support from some stakeholders (parents, employers, head teachers, and the general public), whilst others (teachers, young people, and HEIs) viewed BTECs less favourably. The Department for Education has addressed equivalence and assessment by now requiring external assessment for at least 40% of an Applied General qualification and at least 30% of a Tech Level qualification for performance tables. Evidence suggests that the impact of reform and the switch to the 'newer style' BTECS has been mixed. Thomson (2020a) reported that comparability between the reformed BTECs and A Levels has improved, within a context where the take-up of reformed BTECs has been relatively slow, and many schools and colleges continue to deliver predecessor qualifications. Current and future direction for level 3 qualifications in England now seems set following direction from the Secretary of State for Education Nadhim Zahawi (2022, Letter to OFQUAL) which, drawing on practice in the Netherlands and Germany, confirmed A and T Levels as the flagship level 3 qualifications for 16 to 19 year olds; A levels are defined as essentially academic qualifications which seek to support students to progress to undergraduate academic study; T Level technical qualifications based on occupational standards, the primary purpose of which is to support entry to skilled employment, either directly or following a period of higher technical education. T levels include an industry placement with an employer for approximately 45 days. The extent to which T levels replace BTEC qualifications remains subject to debate.

In recent years elements of international (European) best practice have been influential in the UK and Ireland, including OECD reports that have had significant impact in the evolution of VET systems in Scotland (Stobart Report, 2021), and in Ireland (Green Paper on Assessment of Learners and Learning, 2018). Germany, Denmark and the Netherlands are regularly cited as cases of good practice in UK government policy development. Two European 'Vocational, Education and Training' (VET) models were identified in Section 4 to assess European comparators: the dual-track VET approach found in Germany, Switzerland, the Netherlands, Denmark and the Basque Country; and the school-based model evident in the UK, Ireland and Finland. The dual VET system aims to optimise opportunities to move between academic and vocational studies, and to facilitate the transition from VET to HE. This categorisation is interesting insomuch as the Netherlands, Denmark and Germany are drawn upon in the UK as examples of good practice, despite being defined as a different VET model. The 'logical' comparators for the UK's school based (rather than workplace based) VET systems are Finland and Ireland. In Finland the Ministry of Education and Culture is responsible for strategic and normative development of vocational education and training (VET), with government determining national VET objectives, the qualifications structure and core subjects. A key learning point from Finland is the relatively streamlined and simplified approach to vocational qualifications, obtained via apprenticeship training which includes courses at vocational institutions. The share of work-based learning is 70% to 80% and all VET programmes ensure eligibility for higher education studies.

The German VET system emphasises 'learning by doing', with trainees spending about 70% of their time in the workplace i.e. in the company (Pinnow, 2019), reinforcing the importance of the twin learning environments, the commercial firm and the vocational school (Oeben and Klumpp, 2021). In Germany's dual VET system the role of the state is determined through Education Acts and the federal states design and develop syllabuses for vocational and general subjects for each occupation. Deissinger (2015) has highlighted the design of German political infrastructure as a key factor combining the various interested parties, i.e. companies, chambers of commerce, government and trade unions.

There remain however significant questions remain around the transferability of particular models which tend to reflect national and/or local conditions. Issues over the transferability of European VET models are heightened by the relatively heterogenous nature of vocational education within the devolved UK administrations. Dual VET systems combine two learning venues – the company and the vocational school – with stipulated time resources defined for each venue. Fundamentally at the core of comparator VET models is the cooperative relationship, and the balance between the state, companies and social partners. For example the context of the highly regarded Swiss dual VET model is a federal and multilingual country with a decentralised education system. The primary responsibility for compulsory education lies with the 26 Cantons (states), while the Cantons and the Federal Government share responsibilities for post-compulsory education (general education schools, vocational and professional education and training, universities). Two thirds of all young people coming out of compulsory education enrol in VET programmes at upper secondary level which combine an apprenticeship in a training company with 1-2 days of classroom instruction at a vocational school. For EdventureCo (2019) the primary difference in the models depends on which stakeholder determines curricula design and the delivery of vocational education programmes i.e. the balance between government and the private sector. The Dual VET model is driven primarily by the private sector; the school-based UK model by government.

Finally, this brief review of assessment methods associated with Vocational Education and Training in Northern Ireland and across Europe has highlighted both the complexity of the assessment and policy landscape, and the need for much more extensive research in this often overlooked educational arena.

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