Technical Qualifications – Design Rationale
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1. Introduction

1.1 Political drivers

Technical and vocational education and training (TVET) has in recent years enjoyed a revival in academic research as well as in the political arena. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) advocates vocational education to reduce poverty, promote economic growth and increase competitiveness (Comyn and Barnaart, 2010).

In recent years, Government has commissioned and acted on a series of fundamental reviews:

A review by Professor Alison Wolf on vocational education for 14-19 year olds in England.

A review of apprenticeships by Doug Richard. Rigour and Responsiveness in Skills, a Government document which summarised the responses to the Wolf and the Richard reviews and identified key priorities for reform of the skills system.

The review of the adult vocational system led by Nigel Whitehead of BAE systems. Some key messages have emerged from all this work and Government reform of the vocational education system in the UK will now ensure that:

- Regulatory, funding and accountability arrangements should be designed to deliver qualifications which clearly lead to progression into a job.
- Employers should have greater ownership of standards and qualifications.
- The design and assessment of qualifications should reflect the best research and international practice.
- Qualifications should be relevant, rigorous and recognised as having value by business and learners.
- Vocational qualifications should be graded and benefit from an increase in external assessment.

Related to the drivers listed above the Government has reflected that the needs of 14-16, 16-19 and 19+ learners varies, with 14-16 learners primarily having a focus on progression to further learning in school, college or an apprenticeship, 16-19 learners focusing on either progression to HE or entry to employment (and typically further work-based learning) and 19+ learners typically being focused on career progression. The Government has reflected on these varying requirements by developing qualification standards and funding rules which promote qualifications that specifically support the requirements of each of these three groups.

For 16-19 learners Government will publish a list of vocational qualifications approved to count in Performance Tables for qualifications categorised as either technical level or technical certificate qualifications. Performance tables are used to measure school and college standards and incentivise the provision of high-value vocational qualifications. To be included in the approved list, technical qualifications must demonstrate that they are rigorous and support progression to employment.

VTCT embraces Government reform and this global ethos. Reflecting this, our technical qualifications have been developed for the purpose of leading learners to sustainable and worthwhile employment in the service sector.

In the new global economy, TVET is regarded as a particularly suitable means of promoting economic growth. The purpose of TVET is to provide individuals with knowledge and skills that are more or less directly applicable in the workplace and it is argued that these are likely to have direct and immediate effects on productivity and, consequently, economic growth (Nilsson, 2010). In accordance with Government reform, Nilsson’s defined purpose of TVET is the fundamental principle that underpins the design of VTCT technical qualifications.
As a specialist awarding organisation in the technical and vocational service sectors, VTCT, in the design of technical qualifications aims to address several equity concerns, in terms of parity of esteem which confront academic and vocational education.

VTCT recognises that it is important to ensure that both the demand and, possibly more importantly, the ‘substantive nature’ of subject matter is considered carefully to ensure that it presents a valid and appropriate qualification for 16-19 learners, specifically as a technical qualification ‘on a par with A Levels’.

To support this, VTCT has ensured a sufficient focus upon the “transferable skills”, and also the connections between the highly specific vocational content and the broader applicability of the qualification content, as well as potential connections with other fields, subjects, or areas of possible interest and further development.

VTCT aims to present and defend the educational value, depth, creativity, and range of intellectual or cognitive aspects involved in the vocational service sector subject areas, as well as the value and rewarding nature of developing this level of skills competence, and high-quality execution of these types of skills, for students in different contexts.

1.2 Authentic Assessment

The seminal pedagogical theory underpinning the grading model designed by VTCT for technical qualifications is ‘authentic assessment’. Wiggins was one of its most prolific and convincing proponents (Terwilliger, 1999). VTCT has systematically embedded Wiggins’ approach in every aspect of VTCT’s technical qualifications assessment framework. ‘The tasks are either replicas or analogous to the kinds of problems faced by professionals in the field’ (Wiggins, 1993, p229).

A major strength of authentic assessment is its connection to real-life skills (Meyer, 1993). Advocates of authentic assessment are quick to point out that life is not a series of isolated multiple choice questions, but full of complex embedded problems to be solved (Wiggins, 1993). Accordingly, authentic assessments require students to solve complex problems. In this way, higher order cognitive skills such as synthesis, analysis and problem-solving are assessed.

The purpose of authentic assessment is to measure a student’s ability to apply their knowledge and thinking skills to solving tasks that simulate real-world events or activities (Wiggins, 1993). VTCT’s assessment and grading model is underpinned by empirical research that suggests learners place more importance on assessment tasks when they know that the task has been designed by employers and relates directly to their future career prospects. Studies on authentic assessments demonstrate that when students perceive that assessment tasks resemble their future professional practice (i.e. are authentic) they are stimulated to study more extensively and develop more generic skills (Guilkers, 2007).

Although many of VTCT’s technical qualifications have a partly academic orientation, their primary purpose is to satisfy labour market needs and improve labour market outcomes for qualification holders. VTCT has a strong evidence-base demonstrating a high degree of engagement and ownership on the part of employers and other stakeholders in VTCT technical qualifications. The grading approach used is underpinned by a strong stakeholder-determined methodology, thus increasing transparency, so that the value of VTCT technical qualifications can be clearly recognised by learners, employers and other stakeholders.

1.3 Purpose

This paper sets out to provide explicit reasoning behind the decisions made when developing VTCT’s technical qualifications. This rationale also provides justifications for decisions made in the design of the assessment and grading model used, as well as other alternatives that were considered. This design rationale will explore all the factors that contributed to the development of VTCT technical qualifications and will highlight the characteristics and features of VTCT’s assessment and grading framework for technical qualifications.
2. Guiding principles

2.1 Learners

VTCT values the opinions and perspectives of learners and other end users of VTCT qualifications and, as a result of feedback from learners via VTCT’s external quality assurance system, VTCT has responded by providing clear purpose statements that can be understood by learners in particular. The purpose statement covers: who the qualification is for; the knowledge and skills gained; and employment opportunities to better inform learner choices.

External examinations have been re-engineered to be more applied, which has resulted in more relevant and meaningful questions being used, which will better prepare learners for industry. Learner packs have also been included in the qualification documentation to explain the assessment process (particularly the graded synoptic assessment) to learners. To further support learners, the introduction of a prerequisite portfolio (to be completed before undertaking the terminal unit or synoptic assessment) means that learners have an opportunity to gain formative feedback on their practical skills and then target these accordingly in preparation for their summative assessments.

2.2 Employers

There is a strong evidence base demonstrating the high degree of engagement and ownership on the part of employers in the design and development of qualification structures, content, assessments and standards setting for VTCT technical qualifications. Central to the entire model is the concept of stakeholder values being represented consistently throughout the individual components of the assessment and grading model, whilst also being reflected in the overall qualification grade.

Common recruitment practice in industry across many sectors involves ‘trade testing’ or ‘skills testing’ potential candidates for employment as part of the selection process. With this in mind, during the consultation process, employers were insistent that the assessment methods used for technical qualifications should mirror practice in industry and thus embrace the authentic assessment paradigm.

Commercialisation of assessment and grading criteria reflects the unanimous agreement of a range of industry stakeholders of the graduate attributes required for employment. Employers have also expressed a desire for transparent and accurate differentiation of learner achievement, both at the unit level and by the overall qualification result. The grading criteria used in VTCT technical qualifications reflect the relative value placed on various types of knowledge, occupation-specific skills and abilities by employers. This requirement is also reflected by VTCT providing a full transcript of assessment and unit grades as well as an overall qualification result so that employers can make informed decisions about a prospective employee’s strong and weak points.

2.3 Learning providers

The DfE has created 16-19 Study Programmes “to maximise the potential of young people (16-19) to progress onto higher education and/or skilled employment by ensuring that vocational routes to higher education and employment are seen as high quality and a genuine alternative to academic routes” (Department for Education, January 2013).

16-19 study programmes have key elements, including:

- A substantial qualification, e.g. VTCT TLQs
- Work towards level 2 in maths and English (if a learner has not already achieved this)
- Work experience or other work-preparation activity
- Non-qualification or enrichment activity
The qualification design ensures that technical qualifications can be readily managed within the constraints of a typical full-time study programme, which has size and structure requirements. During extensive consultation; learning providers strongly advocated for VTCT’s technical qualifications to be manageable especially in terms of size as an integral feature of a study programme.

Learning providers also indicated that they will require VTCT to provide sufficient information in order to ensure comparability of judgements between assessors, as well as the provision of very clear guidance and exemplification of performance standards to ensure consistent standards are applied by assessors nationally. To further support learning providers in the delivery and assessment of technical qualifications, VTCT will provide a comprehensive programme of training and standardisation workshops for centres.

2.4 DfE characteristics

Technical qualifications need to demonstrate the characteristics required by the DfE to be included on performance tables.

These include:

A declared purpose – via a detailed purpose statement to help students make informed decisions about which qualification to take.

Size – The size of a qualification must relate to its purpose and the level of study and the skills and knowledge that the student will develop. Technical level qualifications must be at least 300 Guided Learning Hours (GLH). A technical certificate must have at least 150 guided learning hours to enable a student to complete their qualification within a one-year study programme before progressing to a Tech Level, apprenticeship or employment.

Recognition – Technical qualifications must be recognised by employers, recognised professional or trade bodies or national professional registrations schemes.

Appropriate content – To provide employers with greater confidence in the knowledge and skills of a Technical qualifications holder, a minimum of 40% of the content of the qualification must be mandatory and make an associated contribution to the overall grade of the qualification.

Grading – All qualifications recognised in the Technical qualifications category of performance tables must be graded. Grading differentiates student performance, provides motivation and ambition by recognising high achievement and helps to raise industry confidence in vocational qualifications.

Employer involvement – Employer involvement in the delivery and/or assessment of Technical qualifications provides a ‘clear line of sight’ to work, enriches learning and raises the credibility of the qualification in the eyes of learners, employers and other stakeholders.

VTCT has ensured that all these characteristics have been met and exceeded where possible, using employers to drive and shape the qualifications.
3. Qualification overview

Career awareness in students and the practical nature of service-sector qualifications are commonly regarded as a source of learner motivation. However, VTCT recognises that in addition, vocational qualifications should contain challenging core content and should be as rigorous as academic qualifications. VTCT has sought to closely link the assessment of practical skills to labour market requirements. VTCT anticipates that by making both the career structures and opportunities within a given industry and the role of underpinning knowledge and transferable skills more explicit, greater up-take and achievement in related qualifications may also be a natural consequence.

The assessment and grading model is illustrated in Figure 1: Technical Level Qualifications.

The grading framework employed is a four-part model:

- Mandatory units
- Optional units
- External exam
- Graded synoptic assessment

This framework seeks to ensure that the standard of practical skills demonstrated by learners is commensurate with the overall qualification grade achieved, thus ensuring that there is no mismatch between these technical vocational qualifications and labour market requirements.

Further to this, VTCT has differentiated the value that mandatory (occupation-specific knowledge and skills) and optional units (occupationally related knowledge and skills) proportionately contribute to the qualification grade to ensure that qualification grades achieved reflect employer sought occupation-specific core skills and are not distorted by broader educational achievement or acquisition of niche technical skills.

To be awarded a VTCT technical qualification, learners must successfully achieve the following assessments:

- Externally set and internally marked graded practical assessments, attached to mandatory units, which contribute to 50% of the overall qualification grade
- Two externally set and externally marked examination covering knowledge and understanding from across the breadth of mandatory units, which contributes to 30% of the overall qualification grade
- An externally set and internally marked graded synoptic assessment covering practical skills and knowledge content of mandatory units, which contributes to 20% of the qualification grade
- A portfolio of evidence covering the practical skills and knowledge content of optional units, which contributes to the assessment outcome of the qualification, but which does not contribute to the qualification grade

This choice of four overlapping assessment approaches has been carefully chosen and weighted to ensure a highly valid and reliable assessment underpins each qualification award.
Figure 1: Technical Level Qualifications
Technical Level Qualifications: Assessment and Grading Model

Rule of combination
To be awarded the Level 3 Extended Diploma in XXXX learners must achieve all mandatory units and XXXX optional units. Learners must achieve a Pass (or higher) grade in:

- all mandatory units
- all selected optional units
- the external examination
- the graded synoptic assessment

The minimum GLH required to achieve this qualification is XXXX

* The requisite number of optional units must be completed to achieve the specified rule of combination. Optional units contribute to the assessment outcome of the qualification but not to the overall grade.
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1. Unit-based portfolio of evidence (service/treatment portfolio). This assessment:
   a. is required to be passed to progress to graded assessment
   b. provides 100% coverage of the curriculum
   c. ensures clear separation of formative and summative assessment
   d. provides signposted opportunities for formative feedback to enhance learning
   e. ensures that the learner is ‘test ready’ before proceeding to the subsequent assessment steps

2. Unit-based practical assessments. This assessment:
   a. accounts for 50% of the awarded grade
   b. provides 100% coverage of the Learning Outcomes
   c. provides a pass/fail hurdle for achievement of the qualification
   d. demonstrates integration of knowledge and skills through application

3. Synoptic task based assessment and related professional discussion. This assessment:
   a. Accounts for 20% of the qualification grade
   b. Covers the full range of content
   c. Requires the integration of applied knowledge and skills across mandatory units
   d. Provides a synoptic test in a realistic employment environment
   e. Ensures comparability of demand across the cohort through an externally set task
   f. Is time-limited to ensure a commercially viable speed of working is assessed
   g. Provides a pass/fail hurdle to ensure minimum applied competence is confirmed to employers

4. External assessment of knowledge and understanding. This assessment:
   a. Accounts for 30% of the grade
   b. Provides sampled coverage of the curriculum
   c. Enhances reliability through assessment of application of knowledge with identical stimulus material across the test cohort (for example diagnosis of skin condition)
   d. Provides consistent balance of assessment across the range of outcome performance descriptors (pass, merit and distinction grades) between cohorts
   e. Provides stretch and challenge for those learners who have independently studied around the subject
   f. Provides a highly reliable confirmation via sampled assessment that the 100% curriculum coverage in 1 and 2 above is at the appropriate level

Each assessment method has both strengths and weaknesses, for example in reliability, logistical complexity, compensation, coverage, face-validity and learner engagement. The blend of assessment methods is chosen to maximise validity and ensure reliability by providing multiple sources of evidence whilst minimising the weaknesses arising from any one form of assessment. The unit weighting is chosen to reflect the balance of strengths and weaknesses of each assessment type and the value placed upon them by employers.

In higher education, particular attention has been paid to the cognitive domain and, although practical skills form an important part of many courses, their importance in terms of grade reflection in assessment design has been relatively ignored. Thompson (1979) identified the need for better assessment of practical skills. On reviewing the assessment of candidates for degrees in physics, Thompson concluded that although practical work was an essential component of courses, he found a reluctance on the part of examiners to make weighting of the practical work ‘too large’ even though it was considered important.
In contrast, in vocational education, emphasis has traditionally focused on practical skill competence. However, the educational measurement community is engaged in an equally serious rethinking of the value of measuring competence, proficiency and mastery of practical skills in addition to the measurement of occupation-specific knowledge. Changes in the workplace are complex, but most observers believe that future employers will need new recruits to have integrated academic and vocational knowledge, core occupation-specific skills, the ability to interact creatively and higher-order cognitive skills that allow them to adapt to ever-changing circumstances.

VTCT’s assessment and grading model for technical qualifications will enable education providers to develop linear programmes of learning, such as Tyler’s (1949) Objective Model. The Tyler model facilitates an emphasis on consistency among objectives, learning experiences and outcomes. Curriculum objectives indicate both behaviours to be developed and areas of content to be applied. However, the Tyler Model has attracted some criticism, especially around the use of ‘acceptable verbs’ and narrowly interpreted objectives, and a concern that critical thinking, problem solving and value acquiring processes cannot be plainly declared in behavioural objectives (Prideaux, 2003). In the design of technical qualifications, VTCT has aimed to preserve the benefits of linear models of curriculum, which are thought to be highly suitable for vocational learning, whilst simultaneously ensuring valid and reliable assessment of higher order cognitive skills.

Further sections below will examine the key features of VTCT’s assessment and grading model for technical level qualifications. In the first instance, understanding the link between mandatory units, core content and employer-valued skills, knowledge and attributes for specific job roles will help to amplify the ideology which underpins this assessment model.

4. Rules of Combination

The technical qualification structures were designed by employers and subject matter experts and comprise a large mandatory section and a minimal number of optional units that can be selected.

To be awarded a technical qualification, learners must achieve all mandatory and the specified number of optional units. Learners must achieve a Pass (or higher) grade in the external examination and the graded practical assessment. Mandatory units may be theoretical or practical in nature. Theory only units are assessed by the overarching external examination. Practical units are assessed by a graded practical assessment. Practical units are graded pass, merit, distinction (P/M/D) and contribute to the overall grade of the qualification. The graded practical assessment covers the occupation-specific skills required by employers for specific job roles and the grading scale reflects the proportionate value or level of importance placed on various skill types by employers. Learners will be issued with a grade for each mandatory unit, which will be listed in the qualification transcript. The external exam and graded synoptic assessment assess the full range of mandatory units and must be achieved to be awarded the qualification. These elements contribute 30% and 20% to the overall qualification grade, respectively.

The optional units contain learning outcomes and Pass only assessment criteria which cover both theory and practical. A portfolio of evidence and a practical summative assessment is attached to assessment criteria in each optional unit. Learners must achieve all assessment criteria to achieve the unit. VTCT recognises that optional units provide a valuable purpose for learners’ motivation and also address skills which may be required by niche businesses. However, the core qualification content is in the mandatory section of the qualification, is significant and represents the knowledge and skills most desired by employers. Within this, only practical mandatory units contribute to notional grades at the unit level and make up 50% of the overall qualification grade, thus ensuring that the level of the learner’s performance in demonstrating core practical skills and applied knowledge needed for a specific job role is clearly visible and proportionally reflected in the qualification grade awarded. This approach is in accordance with the relative importance placed on practical occupation-specific skills by industry stakeholders.
5. Design and development of technical qualifications

5.1 Overview

Qualification and unit level, size and content has been informed by employers and subject matter experts along with input from learners and learning providers. It is based explicitly on the defined purpose (statement of purpose) for each qualification. There are two TLQs for each occupational area, a Diploma and an Extended Diploma. The TLQ Diplomas are most suitable for learners who wish to continue, as part of their study programme to work towards achieving Level 2 in maths and English, or those undertaking another qualification in parallel. In contrast the TLQ Extended Diplomas are far larger and most suited to learners who have achieved maths and English at level 2 and wish to focus the majority of their study programme on technical subjects which include the primary occupation-specific skills and secondary occupation-related skills needed for specific job roles.

VTCT has looked to international best practice to inform the content of our TLQs. WorldSkills is the collective voice for skills excellence and development in vocational, technological and service orientated careers around the globe. In the development and design of the content of our suite of technical qualifications, VTCT has also used the WorldSkills International Standard Specifications as a central reference point, as they reflect global occupations and sector work roles. The WorldSkills International Standard Specifications cover the specialist, technical and generic skills for vocational work roles across the world and are updated biennially after consultation with industries and businesses worldwide.

VTCT has been guided by a number of core principles which underpin content for technical qualifications.

References are drawn from the purpose of the assessment, such as the desired characteristics of a practitioner and the relative value or importance of elements of a practitioner’s performance. References also reflect the level or status of the practitioner, occupationally, in relation to accepted reference levels for technical and vocational education and training, as well as in relation to its broader purposes.

Intermediate/technician or equivalent work roles are associated with knowledge, skills, values and continuing development, each of which, separately and together, underpin the job, the occupation and the career.

In setting standards across each qualification, predecessor qualifications have been considered along with VTCT qualifications at the same level, as well as the qualifications of other awarding organisations, in particular those that prepare learners for employment.

European qualifications and industry service standards have also been considered, resulting from VTCT’s active participation in two key European service sector projects since 2011. VTCT, in collaboration with UK NARIC, Ofqual, colleagues in Austria and our Finnish partners SEDU jointly developed a conversion method for the allocation of European Credit system for Vocational Education and Training (ECVET) points to UK and Finnish vocational programmes as part of the Developing ECVET in Practice (DECVIP) project, which resulted in the 2013 publication of the DECVIP ECVET guide Make it Count. VTCT has referenced the SEDU vocational standards in the development of many common technical level qualifications. In addition, VTCT has participated in the work of the CEN Technical Committee 409 which is developing a European Service Standard (E.N.16708) in collaboration with national standards bodies and service sector employer representatives from 33 countries in the EU and European Economic Area. The content of VTCT technical level qualifications has been informed by the work of the CEN project committee.
5.2 Weighting of Assessments

VTCT, in liaison with employers and subject matter experts designed assessments to achieve suitable representation and accepted weighting. The weighting of each assessment component in the model (30% exam, 50% practical unit assessments and 20% synoptic assessment) has been endorsed by industry and reflects the relative importance placed by employers on each aspect of the assessment.

Technical qualifications have a number of mandatory units at different levels and prescribed hours of guided learning. Points which contribute to the overall grade are allocated to practical mandatory units depending on their size and level to represent the increased demand (size) or difficulty (level). Points allocated to a Distinction are the same as the points allocated to a Pass at the level above to show the increased difficulty of higher level units. The design principles have been shaped by employers groups and subject matter experts. Mandatory theoretical units in the qualification contribute to the overall qualification grade via the external assessment component, but are not graded at the unit level and therefore mandatory theory only units do not carry a points value.

Mandatory units are weighted and contribute to the grade of the qualification, because these units represent the fundamental core skills required by employers, who wish to ensure that the overall qualification grade reflects the practical technical ability to apply skills and knowledge in an integrated manner in primary occupationsspecific situations and is not distorted by performance in optional units which represent niche or secondary occupationally related skills.
6. Assessment and grading

6.1 Overview

In every TLQ, there are five assessment types used:

1. **Graded practical assessments**, attached to practical mandatory units, which contribute to 50% of the qualification grade.

2. **External examination** covering the applied knowledge and understanding of mandatory units, which contributes to 30% of the qualification grade.

3. **Graded synoptic assessment** covering practical skills and knowledge content of mandatory units, which contributes to 20% of the qualification grade.

4. **A portfolio of evidence** covering the practical skills and knowledge content of optional units, which contributes to the assessment outcome of the qualification, but which does not contribute to the qualification grade.

5. **A formative portfolio** – service/treatment portfolio, which is a prerequisite attached to all practical mandatory and optional units.

The guiding design principle for the assessment and grading design process has been validity: ensuring that the design process selects assessment and grading options that are seen by employers to be valid and then ensuring that the design implementation results in operational processes that are reliable and manageable.

Industry has set the standard in terms of the grading model, P/M/D/D*, which was the preferred model by far.

The principle of authentic assessment is reflected in all assessment instruments, including graded practical assessments, graded synoptic assessments and external examinations, which require assimilation of materials and analysis. External examination questions are applied, relevant and reflect practice in industry. ‘Real-life’ case studies are used to set the scene and provide the basis for objective assessment of applied knowledge and understanding.

Authentic assessment largely identifies with performance-based assessment. Performance involves integration of knowledge and the application of skills. A holistic performance is one which requires attention to the whole task, not just separate pieces. Authentic assessments capture the notion of contextualised performance, as well as holistic performance (Cumming and Maxwell 1999). Contextualisation here means making assessment tasks apparently ‘real’ rather than apparently artificial.

This assessment and grading model places great emphasis on integrated learning, critical thinking skills and connections between vocational and academic skills, in addition to mastery of the narrow occupation-specific skills required by the labour market.

In VTCT’s technical qualifications, mastery testing is based on multiple, rather than single, measures to increase the validity of results. Cognitive scientists have looked at what people actually do in the workplace and have determined that the knowledge and skill of experts in a particular field is often highly integrated and situational (Wirt, 1994).

Employers seek individuals who can adapt to changing workplace conditions, communicate and work effectively with others and solve problems. The assessment approach used in VTCT’s suite of technical qualifications involves the design of assessments which are highly situated, involving performance of occupational tasks, placing emphasis on authentic performance of complex behaviours in real-world settings. VTCT favours an approach which uses a combination of stand-alone analytical assessments at the unit level, which have logical and practical advantages, as well as external examinations and embedded holistic assessments (graded synoptic assessments) at the end of the course.
6.2 Graded practical assessment (graded units)

All practical mandatory units are graded. Theoretical mandatory units are not graded at the unit level, but are assessed, via an external examination which contributes to 30% of the overall qualification grade and the graded synoptic assessments which contributes to 20% of the overall qualification grade. Mandatory units have been identified as containing primary skills and knowledge which are the core skill-sets required by employers.

During the consultation period with stakeholders, employers made it very clear that grades awarded at the unit level should reflect achievement in the practical mandatory units only and should be based on detailed and analytical interrogation of practical skills, using performance assessments which are designed to capture for judgement ephemeral evidence and more elusive aspects of learning by allowing learners to solve authentic problems.

Employers and stakeholders have identified mandatory units as those which should contain the fundamental and primary practical skills and higher order cognitive skill-sets required of a graduate and candidate for employment. Employers have advised that the qualification grade should only reflect performance in mandatory units, which contain the primary knowledge and skills required for the job role.

The grading mechanism used is analytical, non-compensatory and hurdle based. The model achieves valid and reliable representation of achievement through the grading structure, which requires full consolidated coverage at each grade’s performance threshold.

The advantage of using analytical rubrics in summative assessment is that the degree of feedback offered is significant. Students receive specific feedback on their performance, with respect to each of the individual scoring criteria, something that does not happen when using holistic rubrics (Nitko, 2001).

Employers in the service sectors have indicated that they require precise information about qualification holders/potential employees’ performance relating to levels of achievement of applied knowledge and skills in specific technical areas. If an overall synoptic score is desired, a holistic scoring approach would be more suitable. In contrast, if feedback is the goal, an analytic scoring rubric should be used. One type of rubric is not inherently better than the other; different formats work better for different purposes (Montgomery, 2001). In order to satisfy the employer expectation for achievement feedback, VTCT has designed graded units using analytical rubrics to divide unit-based performance into separate facets and each facet is evaluated using a separate grading grid.

The criteria included in VTCT analytical rubrics are assessed both in terms of desirable behaviours and product characteristics. VTCT specifies the practical skills to be demonstrated and the components (i.e., techniques, equipment, product, tools) that must be covered in the graded practical assessment for every practical mandatory unit.

Industry consultations and collaborative working groups have informed the use of criterion-referenced standards and a hurdle based grading scale, rather than a ‘best-fit approach, in order to provide clear and simple criteria to support assessment decisions. The underpinning of understanding and knowledge associated with the practical skills in mandatory units is assessed via the external examination, as implied knowledge and understanding in the practical unit assessments and also holistically in the graded synoptic assessment at the end of the programme.

The graded assessment criteria at the unit level have been designed by employers and are progressive in terms of the relative value placed on certain performance abilities by employers.

A rubric using analytical criteria is used in mandatory practical units in order to provide precise achievement feedback to learners and stakeholders on precise strengths and weaknesses in performance. Criteria within given grade boundaries reflect the relative importance (as determined by employers) of each dimension of the unit assessment. The use of analytical not comparative criteria is essential to ensure that standards can be clearly set, shared between assessors and maintained over time. Comparative criteria (e.g. candidate produces an acceptable performance/good performance/outstanding performance) require extensive exemplification and risk centres and candidates producing ‘copycat’ rather than original and authentic work.
At the **pass** grade, the key theme or basis of the performance criteria is proficient technical skills and safe performance, which will meet the minimum industry standards of practice.

At the **merit** grade, the emphasis is on excellent technical skills, techniques or technical processes, a commercial focus including time management, organisational skills or communication skills, such as promoting and selling additional products and services, where these skills are deemed to be of seminal importance to employers, in a particular context.

At the **distinction** grade, where a finished product is an output of the practical activity, mastery of professional techniques, demonstrated via product evidence, is always an essential component of the criteria, as are higher order cognitive skills such as an ability to reflect upon and evaluate one’s own performance and to justify the methods and techniques chosen.

The grade awarded in the graded practical assessment for each mandatory unit is converted to points which are combined and carried forward to contribute 50% of the overall qualification grade. In order to set both the standard and weighting of the contribution of graded practical assessments, VTCT has conducted extensive consultation with industry stakeholders including employers, professional associations and trade bodies, WorldSkills International and training providers. During this process, standards have been set in terms of learning outcomes and graded assessment criteria, as well as the structure and format of assessment, and the assessment methods to be used. Employers have stated a preference for in-programme summative achievement at the unit level, to contribute to a significant proportion (50%) of the overall qualification grade, so that precise analysis of learner ability relating to individual and specific technical skills is visible. In some sectors this information is also required for professional indemnity insurance purposes covering individual staff attached to the business as well as voluntary national professional registration.

Overall, in graded practical assessments for mandatory units, the Pass standard specifies the knowledge and skills required of a minimally proficient learner. The merit standard reflects employability/generic/transferable skills and high quality performance of techniques and skills. The distinction standard represents the higher order cognitive skills which are sought after by employers and the production of finished products which represent mastery of professional techniques, skills and methods.

### 6.3 External examination

The purpose of having an externally set and marked knowledge assessment is to ensure quick and reliable coverage of the complete knowledge curriculum. Having a single external assessment that samples the knowledge domain across all units means that the assessment is summative and synoptic in nature – to achieve the highest grade candidates must have secure recall of material delivered throughout the course. Also, as the same assessment is sat by candidates at every centre, it provides a directly comparable measure of performance of candidates that can be used to compare inter-centre performance which may indicate standards-setting issues if the externally marked and internally marked assessments have significant variations in average outcomes across the cohort.

An externally set and externally marked examination will assess knowledge and understanding from the breadth of mandatory units at the end of the period of learning and will contribute to 30% of the overall qualification grade, in line with the relative importance placed on knowledge and understanding by employers and industry.

To ensure that there is a coherent link from the employer-endorsed qualification grading to the knowledge assessment VTCT have produced a set of descriptors which exemplify what higher scores (and hence grades) on the assessment should signify.
These are given in the table below:

<table>
<thead>
<tr>
<th>Pass</th>
<th>Merit</th>
<th>Distinction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core requirement:</strong></td>
<td>Recalls and understands essential knowledge from across the breadth</td>
<td>Applies knowledge, understanding and skills from across the breadth of the qualification in an</td>
</tr>
<tr>
<td></td>
<td>of the qualification.</td>
<td>integrated and holistic way to achieve specified purposes.</td>
</tr>
<tr>
<td><strong>Applied as:</strong></td>
<td>Learner demonstrates recall of required core knowledge, answering</td>
<td><strong>Applied as:</strong> Learner demonstrates recall of extensive knowledge, answering simple, open or</td>
</tr>
<tr>
<td></td>
<td>simple, open or closed short questions to provide broad coverage in a short period.</td>
<td>closed short questions to provide broad coverage in a short period.</td>
</tr>
<tr>
<td></td>
<td>Demonstrates basic understanding and application of knowledge through short constructed response items featuring a range of stimulus materials.</td>
<td>Demonstrates secure understanding and application of knowledge through short constructed response items featuring a range of stimulus materials.</td>
</tr>
<tr>
<td></td>
<td>Demonstrates some ability to analyse the appropriate course of action and may evaluate the likely outcome using extended constructed response items.</td>
<td>Application of knowledge is used to demonstrate consistent ability to analyse the appropriate course of action and evaluate the likely outcome using extended constructed response items. Can readily extend understanding to hypothesise on course of action in unfamiliar situations.</td>
</tr>
</tbody>
</table>

This series of grading statements is based upon the concept of Bloom’s taxonomy and questions are written with marks specifically targeted at a single grade.

The external examination will consist of a combination of short answer and extended response questions which require assimilation of materials and analysis. The examinations are designed to be applied, relevant and meaningful. Questions are based upon stimulus material with a high degree of face-validity such as: real-life case studies, photographs, diagrams, scenarios and client examples. These provide the basis for the valid and objective assessment of applied knowledge and understanding. All mandatory units are assessed in each and every examination. The full breadth of mandatory content will be covered over the life of the qualification.

To ensure that the assessment requirements given above are met, each qualification includes an assessment specification document. This document is an internal VTCT design document, but brings together much of the information available within the complete qualification specification to assist the assessment authors. This identifies key information such as: the test duration; the number of marks available by question type; the coverage of unit content in each exam and over time; the weighting of the assessment objectives; and the number of marks targeting each grade. VTCT provide their assessment authors with a comprehensive writing guide and training to ensure that they can write to the requirements of the specification. The chief examiner for each paper completes a monitoring grid to ensure that each assessment paper fully meets the assessment specification. The combination of specification and training means that assessments will be broadly comparable in demand between exam series and will cover the curriculum over time without becoming predictable or stale.
VTCT has identified that the assessment methods used by health professions and the clinical sciences closely match with testing requirements of service sectors in terms of testing the applied use of knowledge via client/customer-centred scenarios. The service sector vocational subject areas can be compared to clinical skills on many levels due to the necessity for knowledge to be applied and directly underpin practical skills. For technical qualifications VTCT has decided to move away from question types that only assess recall of isolated facts.

To provide an optimum compromise between test duration and test coverage at an appropriate level of demand VTCT is using both short objective item and longer constructed response items. The purpose and format of these is:

**Short objective items** are used to test breadth of knowledge and application of knowledge in a time-effective manner. The short response section may include:

**Knowledge Recall:**
- MCQ
- Image/Diagram annotation
- Table completion
- Single word or phrase responses
- Item ranking or matching

**Comprehension and Analysis:**
- Scenario based questions with short response
- Short written response to multiple stimulus (e.g. picture and text)

**Longer constructed response items** are used to test higher order skills of application, analysis and evaluation. The mark scheme for multiple mark extended responses is clearly structured so that the higher grade marks are only accessed if the lower grade marks are correctly achieved, for example:

**Extended item with 5 marks available:**
- 2 marks allocated to correct identification of items using correct terminology (Recall - pass)
- 1 mark allocated to correct use of the terminology in describing a suitable circumstance to use the item (application - merit)
- 1 mark allocated for providing a valid reason why the item is appropriate to apply in the given circumstance (analysis – merit/distinction)
- 1 mark allocated for providing a judgement as to why an alternative approach may be better (evaluation - distinction)

The exact grade mapping would be a judgement for the subject expert, validated during awarding by the standards setting committee informed by performance data.

Subject matter experts are confident that the standard set is in line with industry expectations and comparable with other assessments at the same given level within the sector. This has been reinforced by our industry and employer groups.
6.3.1. Setting grade boundaries

The awarding process is used to set grade boundaries for written exams and its overall aim is to ensure that standards are maintained from one year to the next. Once exams have been marked, a committee of examiners meets to set the grade boundaries.

Once marks have been allocated to items a statistical analysis of item performance is undertaken. This is considered along with feedback from the examiners to identify any items which have poor performance. Where appropriate the chief examiner will exclude a poorly performing or flawed item from all candidates’ scores. Consideration is then given to the performance of individual items compared to the grade performance targeted by the assessment author. This information is used to judge whether the spread of candidates’ performance is expected to be higher or lower than anticipated during the assessment design phase.

The committee has a set of indicative grading cut-scores derived from the assessment specification and the Angoff process undertaken on the paper. The information on the number of items at each demand level and the overall spread of candidates’ performance is used to inform whether the appropriate cut-scores for each grade may be higher or lower than the indicative cut-scores.

The committee considers exam scripts on the grade boundary from last year and a range of scripts from the current year. They compare scripts to decide the mark for this year’s boundary which represents the same standard as last year taking due consideration of the indicative cut-scores and the performance of items indicating whether these may be anticipated to be too high or too low. The examiners use cohort performance statistics to guide their judgement to help them decide what the minimum mark for each grade should be to ensure that standards are maintained whilst making fair judgements, i.e. removing any flawed items from consideration for all candidates. This approach ensures that a learner who performed to the same level should get the same grade, whether they sat the exam this year or last year, thus ensuring that the qualification continues to be valued by employers and other stakeholders.

6.4 Graded synoptic assessment

Synoptic assessment is well regarded within higher education, with plenty of evidence from research papers and good practice case-studies. When carefully designed into the curriculum it enhances links between modules and reduces “compartmentalised” learning approaches. It encourages deep learning through emphasis on vertical and horizontal integration of the topics being studied (University of Westminster, 2014).

Synoptic assessment encourages students to combine elements of their learning from different parts of a programme and to show their accumulated knowledge and understanding of a topic or subject area. A synoptic assessment normally enables students to show their ability to integrate and apply their skills, knowledge and understanding with breadth and depth in the subject. It can help to test a student’s capability of applying the knowledge and understanding gained in one part of a programme to increase their understanding in other parts of the programme, or across the programme as a whole (QAA, 2006).

The general aim of a synoptic assessment is the “undoing” of the modularisation of the curriculum. A synoptic assessment combines two or more modules of study into a single assessment. Such an assessment may help students to make connections between modules, increase the level of student engagement and provide assessors with the opportunity to adopt a holistic approach to delivering and assessing modules (University of Westminster, 2014).
The authentic assessments in VTCT technical qualifications are intended to reflect good practice by businesses for recruitment and progression. With this in mind, criteria and descriptors envisage assessment in a real or simulated service sector work setting with:

- A context (a salon, kitchen, gym)
- A purpose (to sustain and grow the business)
- Given processes (a coordinated flow of diverse clients expecting a range of services, or the production of a finished dish which meets customer requirements, singly or in various combinations)
- Given outcomes (satisfied clients and customers of whom a majority will return, preferably regularly)

For the graded synoptic assessment, the pass standard has been set by employers and professional associations, and directly reflects the WorldSkills International assessment framework according to the following progressive framework:

- **Pass** = customer satisfaction
- **Merit** = customer satisfaction + development of the business
- **Distinction** = customer satisfaction + development of the business and personal/career development (becoming a reflective practitioner)

The graded synoptic assessment mirrors industry practices and trade testing, as does the structure and format of assessment along with the holistic grading rubric that has been shaped by employers. Employers have stated that work must be in a real or realistic working environment on real clients in a commercial time frame, as this is a primary skill required for the job role.

Holism is a principle of authentic assessment, where a standards-based assessment uses trained assessors to score open-response items using holistic scoring methods. In holistic or global assessment, the assessor responds to a learner’s work as a whole, then directly maps its quality to a notional point on a grade scale (P/M/D). Although the assessor may note specific features which may stand out while appraising, arriving at a global judgement is foremost. Reflection on that judgement gives rise to an explanation which, necessarily, refers to grade descriptors or characteristics. Holistic grading is sometimes characterised as impressionistic or intuitive (Sadler, 2008). Holistic grading is by its nature compensatory and relies on the ability of expert judges to make complex judgements against a shared understanding of a standard.

Module (or unit) learning outcomes not assessed by the synoptic method will need to be addressed by another form of summative assessment in the time frame of the module itself (University of Westminster, 2014). This chimes with VTCT’s grading and assessment model for technical qualifications, in that the VTCT approach combines analytical assessment of isolated skills and knowledge at the unit level with holistic grading of learner performance in a synoptic assessment during the final stages of the programme. Employer requirements for both unit level isolated technical skill achievement feedback and terminal synoptic grading based on integrated skills, knowledge and employability attributes are thus met.

Features of VTCT technical qualifications’ holistic grading rubrics used in graded synoptic assessments include the use of only one general descriptor (group of characteristics) at each grade for performance as a whole. The holistic grading rubrics are also task-specific and whilst VTCT provides guidance, support and training for assessors, the VTCT holistic grading rubrics have been designed so that further amplification is not required for reliable use.

VTCT has sought to ensure that holistic performance indicators used in our synoptic assessments validly distinguish different levels of quality performance. Therefore, authentic assessment properly balances the impact of the work (which is most prized by employers) with an assessment of content and process.
The holistic grading rubric is used to assess performance in an externally set synoptic task, which requires learners to demonstrate that they can identify and use effectively, in an integrated way, an appropriate selection of skills, techniques, concepts, theories and knowledge from a number of units from within the qualification.

Standards are articulated in the holistic rubric by a detailed descriptive statement which progressively places emphasis on performance relating to the client at the Pass grade, the client and the business at the Merit grade and the client, business and personal career development at the Distinction grade. The rubric outlines levels of technical attainment as well as a range of generic or transferable attributes.

The synoptic task requires learners to carry out a complete commercial service in a real or realistic working environment, whilst taking into account unpredictable client-centred variable factors, which will mirror commercial practice in industry. Where an externally set theme is not the central variable, client variation ensures low assessment predictability.

VTCT uses a number of counter-predictability measures in the graded synoptic assessment to maintain the integrity of assessments. Uniquely, in many personal service sectors such as hairdressing, beauty therapy and health and fitness, the clients themselves will actually protect against, and significantly reduce, issues of predictability, due to the highly variable nature of different skin types, body types and hair types. In addition to client variability and theme differentiation, VTCT publishes an annual assessment brief which includes instructions and details of the synoptic task to be conducted, and the assessment controls to be administered by centres. The annual brief is made available to examinations staff on 1 September each year.

The assessor’s observation of the synoptic task is supplemented with a professional discussion so that assessors can use questioning to make reasoning and application of knowledge underpinning the choice and use of skills explicit. This supports comparability between candidates as assessors can ensure that performance capability is secure and not simply based upon ‘lucky’ scoping of task to suit a particular candidate. This particularly relates to determining the achievement of the higher grading criteria (merit and distinction).

### 6.5 Portfolio of evidence (optional units)

Employers and other stakeholders have identified optional units as those which should contain secondary content, niche specialist skills or non-essential skills which complement the core skill-set. Stakeholders recognise that optional units serve a valuable purpose in enabling learners to become well-rounded individuals with broader occupationally related skills.

Optional units are assessed using a competency-based model in that theory and practical assessment criteria are either ‘Achieved’ (Pass) or ‘Not Yet Achieved’ (Fail). The assessment instrument used in optional units is a multi-component Pass/Fail marking rubric containing assessment criteria which is used to judge achievement based on either portfolio evidence (theory and reflection on practice) or observed performance (practical). There is industry consensus in the service sectors, that whilst optional units contribute to the assessment outcome of the qualification, they should not be reflected in the overall qualification grade.

In optional units, the pass standard has been set at minimum industry best practice requirements for competency. Amplified assessment guidance with examples of optimal performance at each grade have been designed by SMEs in order to support consistent application of assessor judgements nationally.

The requisite number of optional units must be completed to achieve the specified rule of combination. All learning outcomes and assessment criteria must be achieved for the unit to be achieved.

Assessments in optional units are externally set, internally marked and externally verified.
6.6 Formative portfolio

A service or treatment portfolio is a prerequisite for evidence attached to both mandatory and optional units, which must be completed prior to learners undertaking the graded practical assessments, external examination and graded synoptic assessment. Whilst the prerequisite portfolio does not contribute to the qualification grade, it serves as a valuable ‘assessment for learning’ tool to prepare learners for summative assessments.

This has the benefit that candidates are typically ‘tested when ready’ for their summative assessments, meaning that the judgement of performance standards should not be affected by having large numbers of ill-prepared and below (pass) standard candidates undertaking the summative assessments. It also means that there is clear delineation for teachers, assessors and candidates of the formative and summative assessment, meaning that an appropriate level of control should be easily enforced in both cases.

During various stakeholder consultations held by VTCT, the concept of ‘self-regulated employees’ was a central and recurring theme. Service sector employers described how they favoured employees who could work independently with clients or customers using their own initiative. Employers seek employees who are self-motivated and self-disciplined and display a sense of personal responsibility for their own work performance and also how they contribute to, and have an impact, upon the business as a whole is deemed to be important.

In consideration of this stakeholder feedback, VTCT sought to address the promotion of self-regulated learning within technical qualifications, via this prerequisite.

In higher education, formative assessment and feedback are still largely controlled by, and seen as the responsibility of, teachers and feedback is still generally conceptualised as a transmission process (David and Macfarland-Dick, 2006). Some influential researchers have challenged this viewpoint (Sadler, 1998; Boud, 2000; Yorke, 2003).

If formative assessment is exclusively in the hands of teachers, then it is difficult to see how students can become empowered and develop the self-regulation skills needed to prepare them for learning outside university and throughout life (Boud, 2000). According to David and Macfarland-Dick (2006), one way of addressing this issue is to re-examine the nature of feedback and who provides it (e.g., teacher, peer, self) in relation to its effectiveness in supporting learning processes. In order to embed the concept of self-regulated learning and its relationship to the creation of ‘self-regulated employees’, VTCT encourages centres to integrate peer and self-assessment into the formative assessment process; using the treatment/service portfolio as an authentic formative assessment vehicle. Therefore, the enhanced and wider feedback and self-reflection will further corroborate skills and abilities, having a positive influence on motivation and learner confidence.
6.7 Validity testing

In the context of VTCT’s technical qualifications, predictive validity is the extent to which qualification grades predict work behaviour, on-the-job performance and employability.

The need for high predictive validity in the technical qualifications’ assessments is essential given its importance in personnel selection, recruitment and development.

In pursuit of high predictive validity, the graded practical and synoptic assessments, including assessment and grading criteria and characteristics, have been produced collaboratively with a range of stakeholders which include employers, WorldSkills International, professional associations and trade bodies and training providers to ensure that industry practices are mirrored and graded.

Furthermore, the predictive validity of assessments is measured by correlation between the grade awarded and employer/training provider ranking of learner success based on performance in the workplace and/or realistic working environments. The correlation coefficient will be used to inform and shape further assessments in collaboration with the aforementioned stakeholders. Measurement of predictive validity is conducted across a suitable sample of existing centres prior to the operational start date of qualifications and biennially throughout the life of the qualification.

The structure, format and relevance of assessments which require learners to undertake real industry practices on real clients in real work settings also provide the basis for high face and content validity.

6.8 Non-compensation model

Learners must achieve a Pass (or higher grade) in all mandatory units, all selected optional units, the external examination and the graded synoptic assessment.

There is no compensation applied to the combination of units model; all units contribute to the assessment outcome of the qualification and must be achieved. Only mandatory units contribute to the overall qualification grade, and these units are based on the core occupation-specific skill-set, shaped and required by industry.

Commercialisation of assessment grading criteria reflects the unanimous agreement of a range of industry stakeholders, of the graduate attributes required for employment. The grade criteria used in VTCT technical qualifications units reflect the value placed on various types of knowledge, occupation-specific skills and abilities by employers. Proficiency in technical skills whilst using safe working methods is a constant feature of Pass criteria. Excellent technical skills, techniques and working methods are a key feature of Merit criteria. Higher order cognitive skills, as well as product evidence reflecting mastery of professional techniques are features of unit level Distinction criteria.

A non-compensatory hurdle-based model has been adopted for grading criteria in mandatory units, so that the performance scale embodies both order and progressiveness. No achievement beyond the hurdle can be accessed if the grading criteria are not satisfied in their entirety. This model was championed by stakeholders, especially employers, who value differentiation in performance based on authentic real-world value that has been attributed to criteria.
6.9 Calculating the qualification grade

VTCT technical qualifications are graded by allocating points to three separate components: mandatory units, an examination component and a graded synoptic assessment component. Typically, these will be in the ratio 50:30:20, but some variations do occur (the examination component is never less than 30%). The weighting for a qualification can be found in the specification.

A numerical approach is used to support the specific weighting of assessments given their relative difficulty (level) and demand (size), whereby points are scaled against the unit GLH. Points have been attributed to graded practical assessments in mandatory units which reflect size and level. Subject matter experts have defined the standard whereby a Distinction at the lower level is weighted the same as a Pass at the next level. For example, a Distinction in a Level 2 unit is worth seven points (per GLH), the same as a Pass at Level 3.

Points are proportionately attributed across all assessments which contribute to the overall qualification grade (for example, a Pass in the synoptic assessment is relative to a Pass in any other assessment).

Points for individual assessments relate to the qualification grade boundaries, whereby the points achieved will pull learners up or down the spectrum, depending on the grade of the assessment. To determine the qualification grade boundaries the minimum and maximum points available for qualifications are totalled and equally distributed between the Pass, Merit and Distinction grades. The Distinction* grade is introduced to differentiate between high achieving learners, and equally splits the Distinction grade (see figure).

<table>
<thead>
<tr>
<th>P/M/D :</th>
<th>P</th>
<th>M</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>P/M/D/D* :</td>
<td>P</td>
<td>M</td>
<td>D</td>
</tr>
<tr>
<td>0</td>
<td>1/3</td>
<td>2/3</td>
<td>5/6</td>
</tr>
</tbody>
</table>

The overall qualification grade is compensatory as the UMS approach means that completing most assessments at Distinction will make up for one lightly weighted unit as Pass. Learners will be provided with transcripts so that employers can see this information and understand the candidate’s strengths and weaknesses.

6.10 Setting and maintaining the standards

This section summarises how VTCT sets and maintains standards for technical qualifications. However, specific examples of standards setting and standards referencing actions are included in every section of this paper.

VTCT has maintained high levels of stakeholder engagement and involvement, which has ensured that employers have influenced qualification purposes, content, structures, levels, sizes, outcomes, criteria, assessment and grade descriptors. In addition, VTCT’s panel of subject matter experts from industry have steered the development of technical qualifications to ensure that these qualifications explicitly meet labour market needs.

VTCT has benchmarked technical qualifications against other occupation-specific qualifications at the same level, as well as VTCT predecessor qualifications, employment qualifications and European standard and qualification models. In terms of setting the standard in external examinations, VTCT will use the Angoff Method to set preliminary cut-scores in scored assessments with subject matter experts and industry experts. The Pass, Merit and Distinction criteria in the graded practical assessment at the unit level and the P/M/D criteria in the terminal graded synoptic assessment reflect the World Skills International Technical Standards and Specifications and employer requirements, as well as theoretical models from contemporary educational research.
In external examinations, the final grade boundaries and cut scores will be determined through a rigorous awarding process which aligns with Ofqual’s General Conditions of Recognition and the Code of Practice for General Qualifications. This process will consider the cut-scores arising from the Angoff process, statistical data on the performance of assessment items, and a comparison of the performance of a range of candidates between different forms of assessment. Particular attention will be paid to the performance of candidates just above and below the grade boundary prior to finalising cut-scores.

VTCT Awarding Process

Standards and grade boundaries*: The boundary setting rationale is set out in a 4 step process:
1. Assessment Quality – Statistical evidence using Cα and P values.
2. Provisional cut scores – Comparison to previous academic year cohort. Compare distribution curve of final mark graph and mean mark.
3. Current cohort – sample exam papers at and around each cut score. Compare standard of current cohort against samples from previous cohort.
4. Confirm grade boundaries
To ensure that centre staff and VTCT external quality assurers fully understand the required standard and are interpreting the criteria correctly and consistently, VTCT will provide support documentation, which will include amplification and exemplification of best practice in assessment to guide and support assessors. VTCT will also provide a nationwide programme of ‘Establishing the Standard’ workshops for both centre staff and VTCT external quality assurers.

In order to secure and maintain standards over time, VTCT will conduct a biennial review of qualification performance, in particular learner performance at grade boundaries in assessments will be monitored. VTCT will conduct statistical analysis of exam performance and scores for each exam following each series, including a comparison of outcomes between methods of assessment, to inform subsequent assessments and standards-setting cycles.

VTCT will maintain ongoing employer engagement to review grading criteria to ensure continued fitness for purpose and labour market currency. External quality assurer performance review and ongoing external quality assurer (EQA) standardisation activities will also be a central feature of VTCT’s strategy to maintain standards over time.
7. Quality Assurance

VTCT’s robust external quality assurance processes for technical qualifications feature a high level of externality and include two external quality assurance visits per year in addition to targeted and unannounced spot-checks which will interrogate the delivery, assessment and internal quality assurance of the graded synoptic assessments. Through VTCT’s team of subject matter experts, ongoing analysis of assessment performance will inform the practical application of external quality assurance.

In order to maintain standards and currency, VTCT will establish a review panel to conduct a biennial review of standards by industry stakeholders which will involve a refinement of graded synoptic assessments in parallel with evolving industry practices.

Performance analysis of internal assessments at centres and standardisation by VTCT’s external quality assurance teams will ensure consistency and the correct application of grading rubrics across centres nationally and serve to reduce and eliminate issues of grade inflation over time. In practice, these standardisation activities will ensure that assessment briefs are of the same demand and difficulty over time and this will be undertaken and approved in collaboration with VTCT’s subject matter experts.

In order to maintain industry set standards, VTCT has introduced a mandatory requirement for technical qualifications which obligates centres to involve employers or industry practitioners in at least one assessment element of the qualification, as an expert witness or industry assessor. These employer engagement activities will be reviewed and monitored by VTCT’s team of external quality assurers.

VTCT will also invest in the support of centres via a series of ‘Establishing the Standard’ workshops to ensure that standards and the assessment and grading model are understood by centre staff and applied correctly and consistently.

VTCT has chosen an external quality assurance model of external verification, rather than external moderation for technical level qualifications. VTCT values the external verification model and believes that it is most suitable for performance based assessments where ephemeral evidence is considered. External verification facilitates the democratic involvement of assessors in the external verification process and provides opportunity for discussion about differences of opinion, as well as the generation of informal networks among assessors. External verification better supports employers as assessors can make holistic judgements of synoptic performance rather than scoring and scaling up/down as required when using an external moderation model.

Empirical research suggests that synoptic assessment is best judged using a holistic rubric, whereby an overall assessment judgement is made. Holistic rubrics are not compatible with moderation, as moderation requires an analytical solution usually facilitated by a point scoring rubric. In terms of synoptic assessment using a holistic rubric, external quality assurance via moderation would have reduced validity given the number of judgements needed to derive a sufficient score for moderation.

VTCT’s external quality assurance model for technical qualifications provides the precise rigour required by industry, in that entire cohort assessment decisions can be overturned by the external quality assurer if the national standard is not being applied or if other quality issues are identified, rather than a simple adjustment of results, as would be the case with external moderation. If, via a process of sampling and other external quality assurance activities, the VTCT EQA does not agree with assessment decisions that have been made by the centre, the assessments can be rejected and the learner cohort can be recalled during the summer recess to retake assessments, which can in some cases involve 100% sampling by the VTCT EQA. All assessment decisions are unconfirmed until the VTCT EQA visit has taken place. In addition, external verification is the model of external quality assurance that VTCT centres across service industry vocational sectors are most familiar with and have the most confidence in.
8. Conclusion

The main goal of this design rationale was to discuss the context of technical and professional education in the UK, amidst political and educational reform, in addition to presenting the key theme of authentic assessment, which permeates every design feature of VTCT technical qualifications. Key development decisions relating to the rules of combination, assessment and grading frameworks and setting and maintaining standards have been explained and justified throughout.

This paper highlights the level of rigour, externality and the substantive nature of VTCT technical qualifications, which cumulatively demonstrate parity with general academic qualifications in terms of depth, breadth and cognitive demand. The validity and reliability of the assessment and grading framework for VTCT technical qualifications is underpinned by empirical research and employer support and endorsement.

Ensuring the ongoing maintenance of the standards set for technical qualifications is a priority for VTCT, as is a commitment to providing appropriate support and guidance mechanisms for centres and learners. VTCT will monitor performance of these qualifications, in particular progression into employment.
9. References


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