Assessment in Vocational Education and Training Aligned to the Intent of Underpinning Units of Competency – An Australian Application Overview and Use Case to Competency Based Training

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Abstract: This article explores approaches to assessment of competence against nationally recognized units of competency and considers these approaches with regard to the intent of the underpinning units of competency and the notion of compliance with the Standards for Registered Training Organizations (RTOs) 2015, in particular Clause 1.8. Specifically, the review investigates whether components of units of competency, such as performance criteria and performance evidence should be used as observation criteria for performance assessment tasks used to determine competence. The article concludes that the intent of a unit of competency is embodied in its components, and that units of competency outline competency standards. Given that units of competency provide a benchmark for assessment, they should be used as such. The benchmark can then be used for consistent approach to assessment and any assessment tool review or validation activities and can thus potentially limit the amount of non-compliances experienced in the vocational education and training sector. In order to do so, assessment tools should, for practical observation tasks include observation criteria that duplicate the performance criteria and performance evidence of a unit of competency together with robust task definitions. Using common benchmarks increases the likelihood that another Assessor would make the same judgement, based upon the same evidence.

Keywords: vocational assessment, units of competency, observation criteria, assessment methods, performance assessment

Introduction

Australian Skills Quality Authority (2019a) outlines Clause 1.8 of the Standards for Registered Training Organizations (RTOs) 2015 require that a Registered training Organization (RTO) must implement an assessment system that ensures that assessment that complies with the assessment requirements of the relevant training package or Vocational Education and Training (VET) accredited course and is conducted in accordance with the Principles of Assessment and the Rules of Evidence. Principles of assessment are summarized as Fairness, Flexibility, Validity and Reliability. Australian Skills Quality Authority (2019) describe Fairness as inclusive of consideration of an individual learner's in the assessment process and the provision of reasonable adjustments to take into account the individual learner's needs. They also state that RTO's are required to inform learners about the assessment process and provide the learner with the opportunity to challenge the result of the assessment and be reassessed if necessary. Flexibility entails reflecting the learner's needs; assessing competencies held by the learner no matter how or where they have been acquired; and drawing from a range of assessment methods and using those that are appropriate to the context, the unit of competency and associated assessment requirements, and the individual. Validity requires assessment against covering the broad range of skills and knowledge that are essential to competent performance. It also requires the integration of assessment of knowledge and skills with practical application and that assessment is based gathering evidence that demonstrates that a learner could demonstrate these skills and knowledge in other similar situations. A further aspect of validity is that judgement of competence derived from assessment is based on evidence of learner performance that is aligned to the unit/s of competency and associated assessment requirements.

The Rules of evidence are summarized as Validity, Sufficiency, Authenticity and Currency. Validity relates to assessing the skills, knowledge and attributes as described in the module or unit of competency and associated

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assessment requirements. Sufficiency outlines the need for quality, quantity and relevance of the assessment evidence to enable a judgement to be made of a learner's competency. Authenticity assures that the evidence presented for assessment is the learner's own work and Currency assures that the assessment evidence demonstrates current competency.

These Principles of Assessment and Rules of evidence must be integrated into all assessment activities undertaken by RTOs to determine competence of an individual against training package derived units or qualifications or VET accredited course. These principles and rules ensure assessment is provided in the context of workplace, take into account individual needs and meet quality requirements. Australian Skills Quality Authority (2019a) further advises that performance evidence and knowledge evidence describe what a student must demonstrate in order to be considered competent. Performance and knowledge evidence are defined for each unit of competency and form part of the assessment requirements for the unit of competency. Units of competency are defined as the skills and knowledge to operate effectively and how they need to be applied to perform effectively in a workplace context (Australian Skills Quality Authority, 2019b).

Hodge (2014) illuminates that in Australian vocational education and training, the skills and knowledge deemed essential to perform in occupations covered by the VET system are identified by industry representatives and this content is recorded in competency standards. Hodge also highlights that it is the job of VET practitioners (designers, trainers, teachers and assessors) to interpret these competencies and design and/or facilitate learning and assessment on the basis of this interpretation. Determination of the intent of the unit of competency then is the responsibility of each of these practitioners. This interpretation of intent affects the assessment approaches and corresponding assessment tools developed. Hodge found that VET practitioners experience difficulties interpreting competencies and that many find the language of competencies difficult to decipher. Given the difficulties in interpretation identified in Hodge's study, where VET practitioners create observation criteria for assessment outside of the defined performance aspects of the unit, they introduce their own subjective interpretation to the assessment task, and potentially their own misconceptions. This is true of any competency-based system.

The Department of Training and Workforce Development (2013) describes that assessment tools are made up of a number of components including: the context and conditions for the assessment; the tasks to be administered to the student; an outline of the evidence to be gathered from the student; the evidence criteria used to judge the quality of performance, for instance, the decision-making rules; and the administration, recording and reporting requirements. Assessment is the process of collecting evidence and making judgments on whether competency has been achieved. Assessment tools used to ascertain competence generally consist of a scenario/outline of the situation, instructions for people involved in the activity/simulation, instructions for the student and the lecturer and an observation checklist. The evidence criteria used to judge the quality of performance, specified in the observation checklist for practical task assessments, are the focus of this discussion. Observation checklists, as best practice, should be backed-up with corresponding tangible evidence.

The discussion and conclusions drawn are based on a literature review together with definitions of the current practices in training and assessment of units of competency, utilized in the VET sector. This exploration considers the way units of competency are assessed to include a range of stakeholder requirements and aims to establish a basis for the use of observation criteria in practical assessments as utilized in assessment tools to establish competence. Conclusions are drawn based on the discussion with an objective to present a viewpoint.

Competency-based Assessment

The Standards for Registered Training Organizations (RTOs) 2015 aim ensure graduates meet industry expectations as expressed in training packages and VET accredited courses (Australian Skills Quality Authority, 2019a). The Standards require providers to deliver training and assessment that allows students both the opportunity and the time to develop their skills and knowledge and to practice and demonstrate their skills in a holistic and meaningful way. Australian Skills Quality Authority (2019a) outline that when developing assessment materials, developers should use the information from the unit or module elements, performance criteria and assessment requirements to determine what competence looks like. This requires a degree of interpretation by the developer of the assessment task and likewise the subsequent reviewer, such as a Regulatory auditor.

Competency-based assessment is the process of collecting evidence and making judgements about whether a person has achieved competency (Department of Education and Training, 2019). Competency-based assessment often described as a criterion-referenced process, as it involves people being assessed against fixed criteria or pre-determined benchmarks, such as those expressed in units of competency or accredited modules. Australian Skills Quality Authority (2019a), however, outlines that developers of assessment tools must also ensure that assessment tools are contextualized (or can be contextualized) to the student cohort to produce valid skills that are relevant to the student's industry or work context. On this basis the components of the unit of competency form the basis of the assessment's observable criteria and tasks must be developed to create context for the assessment. This approach meets the requirements, as specified by Australian Skills Quality Authority (2019a), for learners to be assessed against all of the tasks identified in the elements of the unit or module and to demonstrate they are capable of performing these tasks to an acceptable level in a range of contexts and environments. Assessment tools are utilized to achieve this objective.

Australian Skills Quality Authority (2019c) provides that an assessment tool includes the context and conditions of assessment, tasks to be administered to the student, an outline of the evidence to be gathered from the candidate and evidence criteria used to judge the quality of performance (i.e. the assessment decision-making rules). They also outline that Performance Criteria specify the required performance in relevant tasks, roles and skills to demonstrate achievement of the element. The onus, then, on designing assessment tools is on the RTO to specify the relevant tasks and assess performance in the task against the performance criteria whilst demonstrating the skills to be demonstrated relevant to the product and process as outlined in the performance evidence.

Throughout the Australian competency based training system, it is commonly appreciated that when contextualizing units of competency, practitioners, as stated by Fortress Learning (2020), must not must not remove the number and content of elements and performance criteria; may add specific industry terminology to performance criteria where this does not distort or narrow the competency outcomes; may make amendments and additions to the range statement, as long as such changes do not diminish the breadth of application of the competency and reduce its portability; and, may add detail to the evidence guide in areas such as the critical aspects of evidence or resources and infrastructure required, where these expand the breadth of the competency but do not limit its use. Contextualization is related to applying the unit of competency to a particular context, cohort or individual rather than changing the unit's content.

Assessment Tools for Performance Assessment Tasks

Performance assessment tasks, on this basis, must include observation criteria that are observed by the Assessor whilst the candidate undertakes the assessment task that duplicate the performance requirements and performance evidence of the underpinning unit of competency. Aside from performance assessment tasks, knowledge assessment tasks must be included to assess what the individual must know in order to safely and effectively perform the work task described in the unit of competency. A further consideration in the assessment tools utilized to ascertain competence is that of the Assessment Conditions. These specify any mandatory conditions for assessment and the conditions under which evidence for assessment must be gathered, including any details of required equipment and materials; contingencies; specifications; physical conditions; relationships with team members and supervisor; relationship with client/customer; and timeframe. They may also specify Assessor requirements, including any details related to qualifications, experience and industry currency.

An additional layer of complexity is added with the requirements specified in the Standards by Clause 1.5 and 1.6. These specify that the RTO needs to demonstrate that industry representatives (including employers) have contributed to the development of their assessment practices and resources (Australian Skills Quality Authority, 2019c). The purpose of said engagement with industry at the planning stage is to assist in identifying the most appropriate assessment methods an RTO should use.

The development of assessment tools therefore is a complicated activity given the range of stakeholders and Standards to be applied. For many units of competency there are additional third party regulatory requirements, for example such as those related licensed outcomes. A provider delivering and assessing the unit of competency TLILIC2016 License to drive a heavy rigid vehicle, must develop assessment tools to meet the requirements of the training package specified unit of competency, the requirements of the Standards for

Registered Training Organizations (RTOs) 2015, the requirements of the state or territory heavy vehicle regulator, the requirements of the National Heavy Vehicle Regulator where relevant, the requirements specified by industry through consultation and the requirements of state or territory work health and safety regulators where relevant. For a training provider, this can be an extremely difficult path to travel given the potential for the various stakeholders to conflict in their requirements.

There are two common threads that permeate through each of the stakeholders. The first is the intent of the unit of competency. In the case of TLILIC2016 License to drive a heavy rigid vehicle, this is to ensure that the individual successfully completing the unit has the skills and knowledge required to obtain a license to drive a heavy rigid vehicle including systematically and efficiently controlling all vehicle functions, monitoring traffic and road conditions, managing vehicle condition and performance, and effectively managing hazardous situations, as defined in the Application of the unit of competency. The second is the performance standard that the individual is required to work to. These are defined in the performance criteria and performance evidence specified in the unit of competency. On this basis, the most suitable observation criteria for a specified performance task are to duplicate or closely duplicate the performance evidence and the performance evidence requirements. This is on the basis that units of competency defines a competency standard and therefore a set of observable criteria.

Hale, Borys and Adams (2013) highlight that where two or more agencies regulate the same activity of a company, those regulations may overlap and even conflict and state "the regulator is as human as the regulated and will have difficulty processing large and complex sets of information about rules and regulated entities". The difficulty in managing the complex requirements of multiple regulators for an RTO can then lead to compromise in the quality of the training and assessment provided. Research by Ewing (2017) confirms that trainers are identified as having difficulties with interpretation, implementation and assessment of the competencies. To decide whether a person is competent, Assessors need a set of criteria or benchmarks against which to assess candidate's competencies (Department of Training and Workforce Development, 2016). It can be difficult for RTOs and their Assessors to navigate through all of these various, and sometimes conflicting, requirements.

In the VET sector, national competency standards, the smallest of which is a unit of competency, are the usual benchmarks against which a learner is assessed. Anything other than the inclusion of performance criteria and evidence as observation criteria in practical assessment tasks, removes the common benchmark defined by the competency standard that has been designed to be utilised by all stakeholders. Further, it makes it impossible for RTOs to create assessment tools that meet the requirements of the extensive range of stakeholders they must satisfy. These observation criteria are used in conjunction with the instructions to the candidate. The instructions the RTO provides to the candidate should outline the task(s) through which a learner can demonstrate competency and these instructions will prompt the learner to say, do, write or create something (Australian Skills Quality Authority, 2019c). This includes informing the learner of what they will do in the assessment and explaining to them what evidence they need to provide in response to the tasks. Observation criteria without a task specification are not an assessment tool and should not be used in this way. Practical assessment tools must include a task specification and observation criteria.

Given the observation criteria are attached to a specified task that requires a learner to say, do, write or create something, the observation criteria should not be limited to inclusion of performance criteria and evidence. Rather, they should include criteria to determine the quality of work, requirements of any health and safety standards and any other specific requirements, such as, for example conformance to the National Construction Code in building and construction units of competency. The observation criteria must allow for Assessor judgement as to how well the learner performed according to the standard expected.

It must be noted that, in accordance with the principles postulated by Hager (1995), that the narrower the base of evidence for the inference of competence, the less generalizable it will be to the performance of other tasks. This principle advocates use of multiple assessments for determination of competence, together with a range of assessment tools. Hager provides an example in that performance on paper-and-pencil tests alone would probably be too narrow a base for assessing competence in any occupation. He follows that equally, observation of performance on a sample of routine tasks would be too narrow a base for assessing competence in many occupations. The best approach then is one that utilises a mixture of the assessment methods for providing evidence on which to infer competence. The use of observation alone would not be sufficient to determine competence, particularly taking into account collection of tangible evidence of knowledge evidence

requirements of the unit of competency. This is in line with the notion presented by Baartman and Gulikers (2017), as presented in Gulikers, Runhaar and Mulder (2017), who outline that an assessment program should at least combine an authentic does/shows how-level assessment with a knows/knows how-level assessment.

Review into Australia's VET Sector

On 28 November 2018, the Prime Minister announced an independent review of Australia's vocational education and training (VET) sector to examine ways to deliver skilled workers for a stronger economy. The review was led by the Honourable Steven Joyce, a former New Zealand Minister for Tertiary Education, Skills and Employment. Mr Joyce delivered the final report to the Government in March 2019 (Department of the Prime Minister and Cabinet, 2019). The Joyce review details 71 recommendations forming the basis of a six-point plan to transform VET so it can provide students with skills that reflect the needs of employers. This plan centres on strengthening quality assurance, speeding up qualification development, simplifying funding and skills matching, providing better careers information, providing clearer secondary school pathways into VET, and providing greater access for disadvantaged Australians.

Joyce (2019) identifies that many training providers worry whether Australian Skills Quality Authority (ASQA) will treat them fairly and reasonably during the audit process and notes they have little understanding of the approach ASQA will take when it comes time for their next audit. Likewise, Jenkins (2019) illuminates that the Director of employment, education and training at the Australian Chamber of Commerce and Industry, Jenny Lambert, recently argued ASQA had become too focused on compliance and the VET sector's approach to assessment needed an overhaul. As such, both Joyce (2019) and Jenkins (2019) indicate that there is a potential issue based on an inconsistent interpretation of what assessment should entail. Where there is a high degree of interpretation required to develop assessment tools, there is a lot of room for potential non-compliances being identified in ASQA audits. These non-compliances may result from differences in interpretation between stakeholders in the VET sector. This quite likely, on the basis of not applying the components of the unit of competency as a competency standard and hence observable criteria.

Understanding what evidence is required for each unit is essential for the RTO to make valid judgements for each unit (Department of Training and Workforce Development, 2016), and a common benchmark is critical in determining the evidence requirements and avoidance of subsequent non-compliances. This, in particular, where instructions are well defined. Instructions for the learner and the trainer/assessor are an integral part of all assessment tools. Instructions should respond to questions regarding the 'what, when, where, how and why' of assessment processes (Department of Education and Training, 2019). This is consistent with the view presented by the Training Accreditation Council (2018) that in VET assessment there are fixed performance standards set to reflect industry needs. These are specified as units of competency, and all aspects (100%) of the requirements of the unit are required to be judged to be competent. These rigorous requirements maximize consistency, reliability and validity.

Assessment Tools and Benchmarks

Assessment tools, on this basis need to be designed to facilitate the tell aspect of knowledge evidence and the do aspect of performance evidence. As such, an assessment tool will have at least two components, one to collect evidence through questioning, either written or oral, and one to collect evidence through observation. The tell component should have a set of written benchmarks as examples of suitable responses from the candidate being assessed. These 'benchmark answers' indicate to the Assessor of typical acceptable responses such that assessment can be consistently applied to all candidates and quality in the assessment system can be maintained. Similarly, the observation criteria set the benchmark for observable tasks. The observations should not have benchmark answers as they are assessing a candidate's ability to do something within a workplace context, whether simulated or actual, and the context of the unit of competency requirements. There can and will be overlap between the two components in collecting evidence.

If, for example, we take a performance criteria such as "Construction hazards are identified and discussed" from the unit competency such as CPCCWHS1001 Prepare to work safely in the construction industry (Commonwealth of Australia, 2019), assessment lends itself to both observation and telling. Observation in that did the candidate identify construction hazards in a particular environment and did they provide discussion of

said hazards. In order to effectively assess this performance criteria in the context of a workplace, the candidate should for a worksite clearly identify hazards and orally discuss these. Written questions can be used for the knowledge evidence requirement "identify hazard" and "construction hazards" which also address in part the performance criteria. The hazards present on the site used for the assessment will be determined by the site in which the assessment takes place. These may, or may not include, asbestos, confined spaces, electrical: power lines, cords and equipment, excavations and trenches, including underground services, dust, falling objects, hazardous substances and dangerous goods, hot and cold work environments, manual handling, noise, plant and equipment operation, traffic and mobile plant, unplanned collapse, ultraviolet radiation, and working at heights, including scaffolding. Each of these hazards should be assessed using knowledge questions to ensure coverage and observation can be used where they may be present on the site.

This approach will maintain assessment practices against the intent of the unit in so far as establishing a person's competence against a competency standard. John (2018) highlights that a benchmark is an assessment standard or a set of standards that is used as a point of reference for evaluating performance or a level of quality. Observation tasks require operational benchmarks and these are defined in the performance criteria making up the elements and the performance evidence requirements specified in the unit of competency.

In the application of an assessment task, the Assessor needs to know exactly what they are looking for, what resources are needed, and any other issues that need to be taken into account (Department of Training and Workforce Development, 2013). They also need to know how to use the observation checklist. These requirements are specified within the instructions to the assessor and in the assessment tasks specifications and definitions. These can also be supported with which can be derived from the evidence guides in the unit of competency.

The designed tools must also adhere to the principles of assessment, which include the following: validity, reliability, flexibility and fairness (John, 2018). Validity is the extent to which evidence gathered can be supported from the design assessment tools. Reliability follows as the consistency that tools used for one set of candidates can be used to assess other candidates of the same competencies and generate the same results. Flexibility allows assessment candidates ample time to understand the terms of the assessment. Finally, the element of fairness means criteria should not discriminate against an individual or group of candidate. This can best be achieved by matching the unit requirements.

Conclusion

The intent of the unit of competency is summarized in its components and these components define the competency standard to say, do, write or create something in a workplace context. It is therefore reasonable to infer that these components should be directly observable when determining competence while using a performance assessment tool. Using competency standards in the manner they were and are intended, that is as a benchmark, will remove a great deal of confusion and misunderstanding amongst stakeholders in the VET sector, including Regulators, Industry and Industry bodies, RTOs, Assessors and those responsible for assessment validation activities.

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