NOTE: The text below was extracted from WMO-No. 1205 Guide to Competency

2. COMPETENCY ASSESSMENT

Competency assessment is conducted to determine if someone can perform the job to the level of skill and knowledge required, and is a critical element in implementing competency requirements. Competency assessment is required for competency frameworks that are internationally regulated, and is a recommended practice for all other competency frameworks.

We know whether an individual is competent after he/she has completed an assessment that verifies that all aspects of the competency can be applied in an operational context. Just as new drivers must typically demonstrate that they can drive a car by actually taking the examiner for a drive, so too, under the WMO competency framework, personnel must demonstrate competence by undergoing an assessment process, in this case on a regular basis. Assessment may involve a variety of assessment methods.

The interval between competency assessments depends upon many things. In some countries, Aeronautical Meteorological Forecasters are reassessed on a six-month or annual basis. In other countries, in-depth reassessment may be undertaken only every five years with less intensive assessment in the interim period. The reassessment period should be documented and included in the organization's QMS.

Competency assessment requirements will vary depending on the service area and the structure of the NMHS providing the service. In the case of Aeronautical Meteorological Personnel, application of the competency framework is mandatory, thus an assessment programme is likely to be more formal and rigorous than a competency assessment for another service area. Natural variations may still occur due to the conditions governing the application of competencies in that service area.

Table 5 provides some sample assessment tools applied to different programme areas. Example A might be implemented by an organization with high staff numbers and a large infrastructure, budget and training programme. Example C might be implemented by a small organization with limited staff, training options and infrastructure. Example B might lie somewhere in between.

Table 5. Examples of different types of competency assessment programme

	Example A	Example B	Example C
Aeronautical meteorological forecaster	Comprehensive assessment of individual staff members, using a range of tools, such as: – Quizzes – Interviews – Simulations – Workplace observations – Case studies – Portfolio of forecasts	Verification statistics of forecasting skill, with a performance review against competency criteria	Combination of supervisor's reports, self-assessment and portfolio of forecasts/warnings
Climate service personnel	Comprehensive assessment covering verification statistics, portfolio of climate products and a workplace observation	Portfolio of climate products and supervisor's reports	Performance appraisal of personnel against the competency criteria
Observing instrument calibration personnel	Logbook or register of the instruments calibrated, plus practical demonstrations of instrument calibration, and troubleshooting test	Practical demonstrations of an instrument being calibrated	Logbook records of calibrations performed, plus copies of calibration certificates

After an individual has undergone assessment, they are deemed either competent or not yet competent in each competency assessed. If they are deemed competent, they should be issued with a statement listing the acquired competencies, as well as any constructive feedback. If they are deemed not yet competent, they should be given clear and constructive feedback on their performance and be provided with guidance on future options, including training and mentoring, to achieve competency. These options would typically be documented in the organization's QMS covering the competency framework.

The following sections are adapted from the *Guidelines for Assessing Competence in VET* by the Western Australian Department of Education and Training.[3] They describe the requirements for a comprehensive assessment programme, which should be tailored to suit the needs of the organization or service area. For non-regulated competency frameworks, the following information should be used as a guide to recommended practice.

2.1　　　　**Principles of assessment**

Assessment principles state that assessments must be valid, reliable, flexible and fair. Assessors must ensure that assessment decisions involve the evaluation of sufficient evidence to enable a judgement to be made on the competence of the candidate, in other words, the person whose competence will be assessed.

Validity refers to the extent to which the interpretation and use of an assessment outcome can be supported by evidence. An assessment is valid if it integrates required knowledge and skills with the practical application of a workplace task, and if the assessment outcome is fully supported by the evidence gathered.

Reliability refers to the level of consistency and accuracy of the assessment outcomes; that is, the extent to which the assessment provides similar outcomes for candidates with equal competence at different times or places, regardless of the assessor conducting the assessment. It also implies repeatability, in other words, that the candidate can demonstrate competence on more than one occasion, and in more than one context.

Flexibility refers to the opportunity for personnel to negotiate certain aspects of their assessment, timing for example, with their assessor. All candidates should be fully informed (through the assessment plan) of the purpose of assessment, the assessment criteria, the methods and tools used, and the context and timing of the assessment.

Fair assessment does not advantage or disadvantage particular candidates or groups of candidates. This may mean that assessment methods are adjusted for particular candidates (such as people with disabilities or from different cultural backgrounds) to ensure that the methods used do not disadvantage them. An assessment should not place unnecessary demands on candidates that might prevent them from demonstrating competence. For example, an assessment should not demand a higher level of English language or literacy than that required to perform the workplace standard outlined in the competencies being assessed. The assessment process should not prevent anybody from demonstrating their competence, skills or knowledge because the design of the assessment differs from the work and places them at a disadvantage.

In summary, assessment processes used must:

–　　Be consistent with the tasks and standards of the service area;

–　　Comply with the relevant assessment guidelines;

–　　Use a process that integrates knowledge and skills with their practical application in a workplace task (holistic approach);

–　　Target the correct qualification level;

–　　Be customizable.

---

[3]　Government of Western Australia, Department of Education and Training, 2008: *Guidelines for assessing Competence in VET*, Perth.

2.2   **Assessment process**

This section and its subsections outline the key processes and steps an organization should consider when developing a competency assessment programme. Organizations should adapt the steps outlined in this section and its subsections to their own circumstances taking into account national legislation, work practices and organizational culture. Members are encouraged to adapt and extend this material in developing their own documentation describing the implementation and use of their competency assessment programme.

Figure 8 shows the key themes covered in this section, which lead to the planning and conducting of an assessment activity. This is the best practice to follow whether the assessment programme is small or fully comprehensive.

2.2.1   *Types of evidence*

Evidence is the information gathered which, when matched with the requirements of the competency, provides proof of competence. Evidence can take many forms and be gathered from a number of sources. It can be direct, indirect, or third-party supplementary, as noted in Figure 9.

No single form of evidence is better than another. Indeed, applying direct, indirect and third-party supplementary evidence in combination can be the most effective (and fair) means of assessing an individual's competence. In other words, the evidence selected must reflect the skills, knowledge and language encompassed in the competency framework. For example, competency in forecasting may be demonstrated by collecting some or all of the following evidence:

•   A portfolio of actual forecasts and warnings;

•   Direct observation of the task in real time, by the assessor in the workplace;

•   Completion of simulated examples, such as a case study;

•   Answers to questions on forecast and warning processes.

Quality evidence for the individual and the context must be chosen appropriately and should meet the four rules of evidence noted in Figure 10.
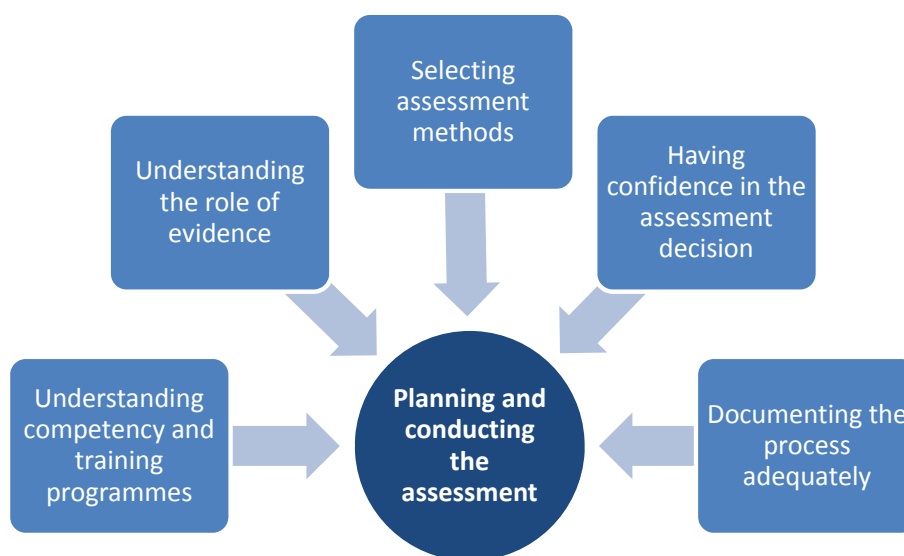

Figure 8. Issues to consider when planning and conducting an assessment
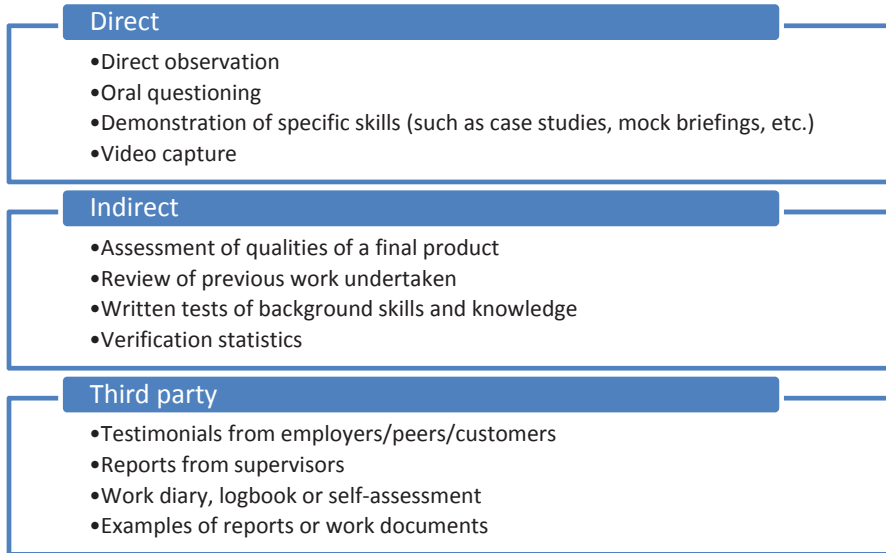
Direct

- Direct observation
- Oral questioning
- Demonstration of specific skills (such as case studies, mock briefings, etc.)
- Video capture

Indirect

- Assessment of qualities of a final product
- Review of previous work undertaken
- Written tests of background skills and knowledge
- Verification statistics

Third party

- Testimonials from employers/peers/customers
- Reports from supervisors
- Work diary, logbook or self-assessment
- Examples of reports or work documents

Figure 9. Different types of evidence

A record of the evidence should be kept by the organization in the event of an appeal or an audit by a national regulator (for example, for aviation services). It is the responsibility of the assessment institution to establish guidelines on the minimum evidence requirements, including the retention period, in accordance with the organization's QMS.

2.2.2   ***Assessment methods***

Assessment methods are the means of collecting the evidence required to demonstrate satisfactory performance (Figure 11). In identifying the assessment methods, resources and facilities required for the assessment should be considered, including any workplace simulation requirements.
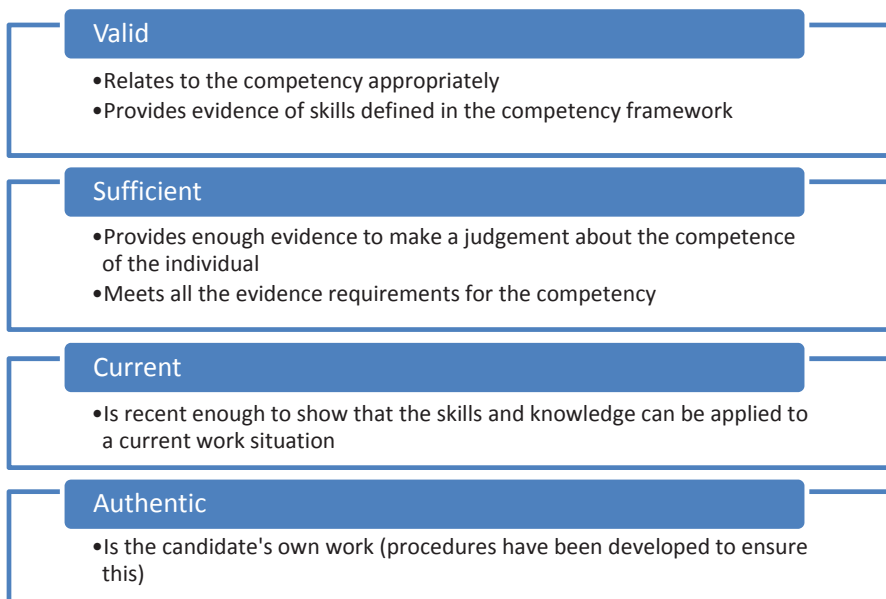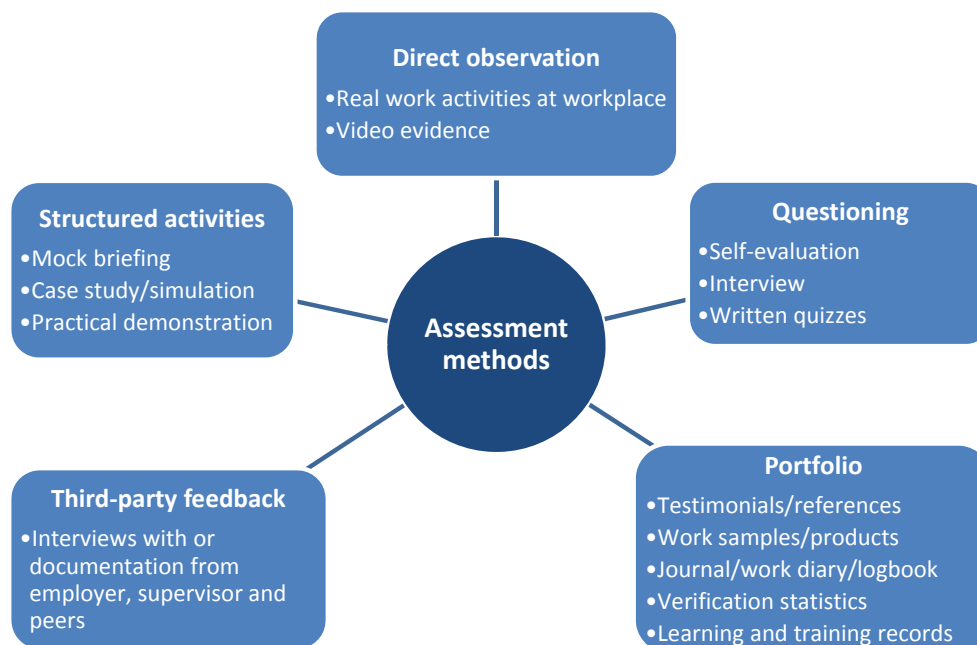
Valid

- Relates to the competency appropriately
- Provides evidence of skills defined in the competency framework

Sufficient

- Provides enough evidence to make a judgement about the competence of the individual
- Meets all the evidence requirements for the competency

Current

- Is recent enough to show that the skills and knowledge can be applied to a current work situation

Authentic

- Is the candidate's own work (procedures have been developed to ensure this)

Figure 10. Rules of evidence

Direct observation
•Real work activities at workplace
•Video evidence

Structured activities
•Mock briefing
•Case study/simulation
•Practical demonstration

Assessment methods

Questioning
•Self-evaluation
•Interview
•Written quizzes

Third-party feedback
•Interviews with or documentation from employer, supervisor and peers

Portfolio
•Testimonials/references
•Work samples/products
•Journal/work diary/logbook
•Verification statistics
•Learning and training records

Figure 11. Suggested methods for competency assessment

2.2.3   *Assessment tools*

Once the method has been selected, the means for collecting and analysing the evidence are then chosen or designed. These means are called assessment tools. In general, the term assessment tool is used to describe a document that contains both the instrument and the instructions for gathering and interpreting evidence. Instruments are the specific questions or activities developed from the selected assessment method(s) to be used for the assessment. A profile of acceptable performance and the decision-making rules for the assessor may also be included. Procedures include the information/instructions given to the candidate and/or the assessor regarding the conditions under which the assessment is to be conducted and recorded.

For example, if the evidence-gathering technique being used is a workplace observation followed by a brief interview, then the assessment tool might consist of:

–   Instructions specifying the activities to be undertaken by the candidate, the key points to be observed and the performance issues to be considered by the assessor;

–   A checklist for the key observation points and decision criteria, a series of questions and a checklist for responses on required knowledge for the interview.

All assessment activities and materials should be flexible, fair, safe, cost-effective and appropriate for the organizational context.

Assessment strategies and tools should be developed in consultation with relevant stakeholders and tested on an appropriate sample of employees, if possible, or reviewed before use.

2.2.4   *Assessment matrix*

Once the assessment tools have been established, it is good practice to map them back to the performance criteria. Table 6 provides an example of assessment tools used in competency assessments of Aeronautical Meteorological Forecasters (AMF) in Australia, and how they map back to the elements of competency.

Table 6. Sample assessment matrix for AMF competencies

		Aeronautical Meteorological Forecaster								
		Quiz on ICAO Annex 3 (I)	Weather hazards quiz (I)	Local procedures quiz (I)	Simulation/Case study (D)	Workplace observation (D)	Supervisor's report (T)	Mock briefing (D)	Portfolio of forecasts/warnings (I)	Logbook (T)
C1. Analyse and continually monitor the weather situation	1.1				x_s	x	x			
	1.2					x	x			
	1.3				x_s	x	x			
C2. Forecast aeronautical meteorological phenomena and parameters	2.1		x_s		x	x			x_s	
	2.2	x				x			x	
	2.3					x			x	
C3. Warn of hazardous phenomena	3.1		x_s		x		x_s		x	
	3.2	x							x	
	3.3								x	
C4. Ensure the quality of meteorological information and services	4.1			x		x				x_s
	4.2			x						
	4.3					x			x	
	4.4				x_s	x				x
C5. Communicate meteorological information to users	5.1					x	x_s	x		
	5.2				x			x		

Ideally, each performance criterion should be assessed at least twice to demonstrate that the forecaster can apply the skills and knowledge in a variety of contexts. More than three assessment tasks for one performance criterion may be considered redundant. In a small organization, using two assessment tools might be difficult unless one of them requires less effort, such as existing or extended supervisor's reports.

Evidence is defined as direct (D), indirect (I), or third-party (T); x denotes the main evidence gathering activity, while x_s denotes a supplementary activity that may be required as a backup if sufficient evidence is not collected.

2.2.5 *Reasonable adjustment*

It is at this stage that issues of reasonable adjustment for individual needs should be considered. For example, an individual may have a disability that prevents him/her from undertaking certain activities or performing in standard ways, but he/she may still be competent in the unit(s) of competency being assessed. In this instance, reasonable adjustments should be made to the assessment activity to ensure that the individual still has the opportunity to demonstrate the competencies being assessed.

To ensure that an individual's special needs are addressed, the following questions could be asked, as appropriate or required in the organizational context. If any of the answers are yes, further action to customize the assessment might need to be taken.

– Does the individual live in a remote location? Will this create any barriers in relation to the assessment procedure or assessment methods? For example:

- Some communities do not have access to certain workplace equipment;

- If an individual has to travel to a metropolitan area for an assessment, the additional costs and stress involved in this need to be considered;

- If the assessor would have to travel, the additional cost needs to be considered.

- Does the individual speak a language or dialect other than the national language?

- Does the assessment procedure require the individual to use language, literacy or numeracy skills beyond those required for performance in the workplace?

- Does the assessment involve anything that does not occur in the service area and may be contrary to an individual's cultural background? For example:

  - Individuals from some cultural backgrounds may not feel comfortable with assessment procedures involving competitive behaviour;

  - Individuals from some cultural backgrounds may not understand assessments based on hypothetical situations or role plays;

  - Some individuals may benefit from the presence of a support person while being assessed, for example someone from their family or community;

  - Individuals from some cultural backgrounds may consider it inappropriate to make an educated guess and therefore fail to complete certain types of knowledge-based tests like multiple-choice or true/false tests;

  - Individuals from some cultural backgrounds may tend to underassess their level of skills (to demonstrate modesty), and may consequently underperform in certain types of assessment such as self-evaluations or oral questioning;

  - Cultural attitudes may lead an individual to indicate that he/she understands an instruction, when in fact he/she does not.

- Does the assessment procedure involve activities that are not part of the service area, such as assessing the individual in front of others in a situation that may be stressful, for example women in a male environment?

- Does the individual have a disability that does not reduce job performance but may require some adjustments?

Provided that sufficient quality evidence can still be collected for the assessment decision to be made, it is acceptable to adapt the assessment methods to reflect the individual's needs and situation.

2.2.6   ***Ensuring the integrity of the assessment decision***

Figure 12 shows the main components necessary to ensure that any assessment decision is sound. Assessors use their expertise and appropriate assessment tools to synthesize the evidence before them in a systematic way, and holistically relate it to the requirements of the unit(s) of competency. While the process of holistic assessment is encouraged, assessors must be confident that an individual is demonstrating mastery of the full competency. The assessor or assessment team must possess the relevant qualifications or requisite competencies defined by the organization to perform the assessment (see subsection 2.6 below).

Confidence in assessment decisions is enhanced when validation processes are used. The validation processes listed in Figure 12 provide some examples for the purpose of illustration

only. To maintain the quality and consistency of assessments, each assessment programme should have established processes for validation, which may be made available for auditing purposes when necessary.

2.2.7 *Planning and conducting the assessment*

With the development work done, the assessor can now plan and conduct the assessment. Figure 13 demonstrates the steps likely to occur in planning and then conducting an assessment.

When planning an assessment, the service area manager needs to ensure that:

–   Trained assessors are prepared to conduct the assessment;

–   The assessment tools or materials have been checked and trialled with an appropriate sample of people or reviewed by others where trials are not undertaken;

–   Assessment procedures have been reviewed to ensure that the tasks to be performed reflect workplace requirements;

–   If appropriate, assistance from more experienced assessors or industry experts is sought;

–   The time and place for assessment have been agreed upon with the candidate and other relevant parties;

–   The needs of the candidate have been determined and any reasonable adjustments have been made to the assessment;

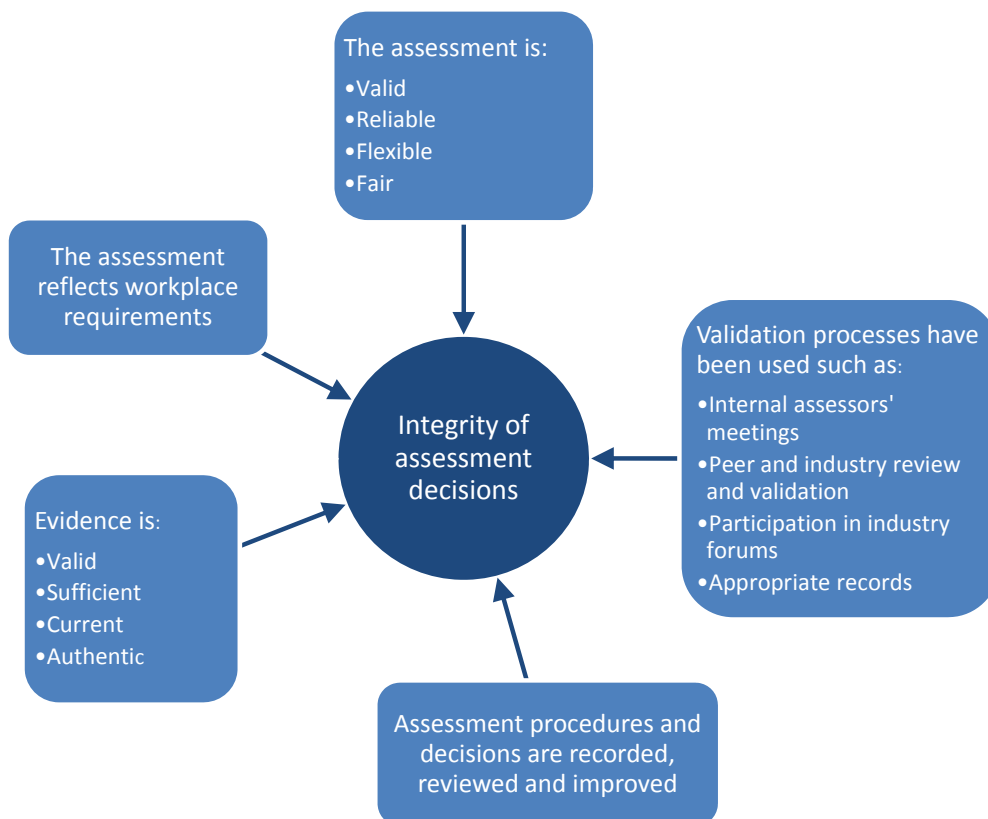–   All appropriate personnel have been advised of the assessment;

Figure 12. Factors maximizing the integrity of assessment decisions

–   Assessments are planned in accordance with relevant work health and safety regulations;

–   A conflict resolution and appeals policy is in place in case of disagreement.

When preparing the individual for assessment, the assessor needs to ensure that:

–   The candidate has been notified of the scope, context and purpose of assessment;

–   The candidate has understood the assessment plan and any other appropriate documentation;

–   The relevant performance requirements have been provided and explained to the candidate;

–   The assessment procedure and expectations of the individual have been clarified and agreed upon between the candidate and the assessor;

–   Any legal or ethical responsibilities associated with the assessment have been explained to the candidate and other relevant parties;

–   The appeals process has been explained to the candidate;

–   Information has been conveyed using language and techniques suited to the candidate and other relevant parties;

–   The need for any additional evidence gathering has been identified and the candidate has been informed.

When conducting the assessment activity, the assessor needs to ensure that:

–   The assessment is conducted in accordance with the assessment plan;

–   Evidence specified in the assessment procedure is gathered using the agreed tools or materials;
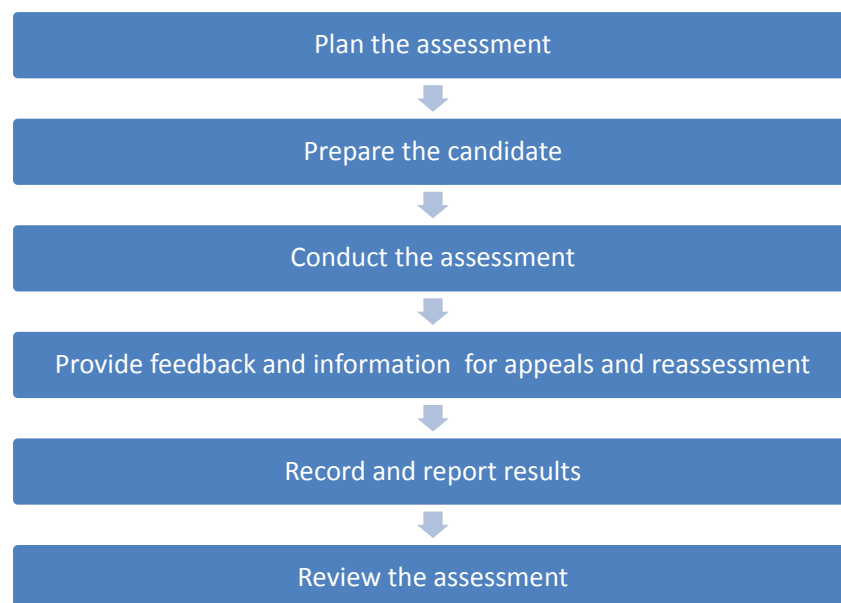
Plan the assessment

Prepare the candidate

Conduct the assessment

Provide feedback and information for appeals and reassessment

Record and report results

Review the assessment

Figure 13. Steps in planning and conducting an assessment

– Evidence is gathered in accordance with reasonable or allowable adjustments where applicable;

– Evidence is evaluated in terms of validity, sufficiency, currency and authenticity;

– The assessment decision is made in accordance with the specified criteria;

– The decision is recorded, in accordance with the organization's QMS.

When providing feedback, the assessor needs to ensure that:

– Clear and constructive feedback is given to the candidate and any other relevant personnel (such as their direct supervisor), and appropriate language and strategies are used;

– Feedback includes guidance on overcoming gaps in competency, or further goals or training opportunities if appropriate;

– The candidate is given information on reassessment opportunities and the appeals process;

– Any assessment decision dispute is reported to appropriate personnel and resolved using appropriate conflict resolution methods.

2.2.8   *Providing feedback*

Competency assessment can be a stressful process for many people, and assessors need to be mindful of the impact an assessment outcome can have on an individual personally and/or professionally. Deficiencies or issues identified during the assessment process should be treated sensitively and in confidence. Feedback should be provided directly to the candidate in a timely fashion, conveyed in an objective and constructive way, whilst allowing sufficient time for them to respond.

Assessors should ensure that candidates are provided with feedback that includes details of the assessment outcome, the reasons for the outcome, and the appeal and reassessment options used in the organization. Any inadequacies should be communicated in a language that encourages the candidate to engage in a process to achieve competency. If inadequacies are identified, the assessor should liaise with the candidate's supervisor to determine how the candidate can achieve competency. This plan should be developed after the result is given and any appeals have been processed.

When recording results, the assessor needs to ensure that:

– Assessment results are recorded accurately and in accordance with national/organizational record-keeping policies and procedures;

– Confidentiality of assessment outcomes is maintained;

– Appropriate documentation is completed.

2.3   **Appealing an assessment decision**

A candidate should be given an opportunity to appeal the assessment decision. It is the responsibility of the training and assessment institution to ensure that an appeals process is in place.

In the case of an appeal, the evidence will be reviewed to determine whether the assessment decision was fair. Therefore, it is the responsibility of the assessor to ensure that the evidence is kept, in sufficient detail to enable the review.

2.4   **Grievance due to the assessment process**

A complaint may be registered by anyone involved in, or affected by, the assessment process. Complaints or grievances may concern, but are not limited to, the following situations:

–   A candidate feels that the assessment process is not being applied fairly;

–   The assessment process presents unacceptable levels of anxiety for the candidate/assessor;

–   A candidate feels that reasonable adjustment has not been applied;

–   The candidate has not been adequately informed of the assessment or assessment requirements;

–   The candidate/assessor feels they are being subjected to harassment as a direct result of the assessment process;

–   Other personnel in the operational environment are adversely affected by the assessment taking place;

–   The supervisor is unsatisfied with the administration of the assessments in his/her office.

For QMS purposes, it is the responsibility of the organization to keep a record of complaints or grievances that have been made directly regarding the assessment process, and of any remedies implemented in the event that further action is required.

2.5   **Recognizing prior learning and current competency**

An organization may decide that existing or new personnel may already have skills and knowledge that would likely enable them to achieve a positive result in the full, standard competency assessment process. An alternative, shorter assessment of prior learning and current competency may be acceptable to the organization given sufficient evidence. It will be for the organization to determine, in a consistent, fair and transparent way, whether or not an individual's prior learning or current competency is sufficient to apply an alternative competency assessment approach.

Recognition of prior learning should be granted only if the prior learning is sufficiently documented, just as any learning used as part of a portfolio is documented in the full competency assessment process. Recognition of current competency is the formal acknowledgement that an employee is already competent, either through extensive work experience or as evidenced by an external competency assessment conducted by another organization. Organizations undertaking this assessment need to determine how much of the competency requirement has been satisfied through prior learning or experience.

To ensure consistency, fairness and transparency, issuing organizations should establish a systematic, organization-wide approach to recognizing prior learning and current competency, including policies and procedures that govern implementation.

2.6   **Assessor qualifications and competency requirements**

Competency assessments are carried out by a designated assessor. It is the responsibility of the organization arranging competency assessments to determine the qualification and competency requirements of the assessors. It is recommended that the assessor has sufficient experience (preferably several years) in the field in which he/she is assessing, or is trained in using assessment tools created by someone with sufficient experience in the field.

In addition to carrying out assessments, assessors are usually required to liaise with a range of stakeholders affected by the assessment process. As such, assessors are required to have a high level of interpersonal and communication skills. Desirable characteristics of an assessor include, but are not limited to:

- Approachable and friendly. Assessors should be able to put candidates at ease by creating a non-intimidating assessment environment. This includes being relatable by demonstrating empathy and understanding with the individuals being assessed;

- Knowledgeable or having expertise in the area being assessed. An assessor with experience or expert knowledge of the service area is more likely to perform a sound critical analysis of the evidence presented. Moreover, managers and supervisors are more likely to have confidence in the assessment decisions if the assessor is seen to be credible or respected in the field;

- Perceptive and observant, able to derive information pertinent to the assessment process and evidence requirements;

- Patient. Conducting assessments can be time consuming and sometimes physically demanding. Assessors require patience in dealing with candidates throughout the assessment process, particularly when many people require assessment or multiple assessments are required for a single candidate;

- Unbiased and consistent across the assessments, thus ensuring integrity in the assessment decision;

- Self-aware, and able to identify their own biases and sources of frustration before they affect the individuals being assessed or the assessment outcome;

- Diplomatic, able to navigate the complexities of assessments with respect to cultural and organizational sensitivities.