

## Guidance: Developing assessment specifications/blueprints

AlphaPlus design and develop assessments for academic, vocational and professional subjects; for assessment of knowledge and testing of skills; for young children and for adults. All the assessments we develop must be fit for purpose, and this means that they must adhere to the **assessment specification**.

The assessment specification details the purpose of the assessment and the content domain, states any assessment design considerations, and gives the parameters for item or task design. For some projects we will be given an assessment design to work from, but in most cases developing the assessment specification will form the first, and most crucial, phase of work.

This document outlines principles of assessment design and the processes we follow to ensure we adhere to these principles. Example assessment specifications can be found on SharePoint.

### Principles of assessment design

The basic principles of assessment design are as follows:

- Any assessment should be **valid**. That is, it should measure what it claims to measure.
- Assessments should also be **reliable**. That is, the measurements should be accurate and reproducible.
- Any assessment should reflect the expected **learning outcomes**. Learning outcomes are descriptions of what a learner should know, understand and/or be able to do at the end of a defined unit of learning (they are sometimes disambiguated into separate knowledge and skills outcomes).
- The assessment criteria should also reflect the expected **performance standards**. Performance standards describe the level a learner is expected to operate at the end of a defined unit of learning. For competency-based assessment, this will usually be a single level (competent), but for graded assessments the performance standards will define the expected standard at each grade boundary.
- Finally, the method of assessment must be **appropriate for the construct** to be assessed. That is, if the aim of the learning is to develop knowledge, then the assessment should test knowledge; if the aim of the learning is to develop skills, then the assessment should test their skills. Often an assessment will test both.

Figure 1 below outlines the role of the assessment specification in assessment development and delivery.

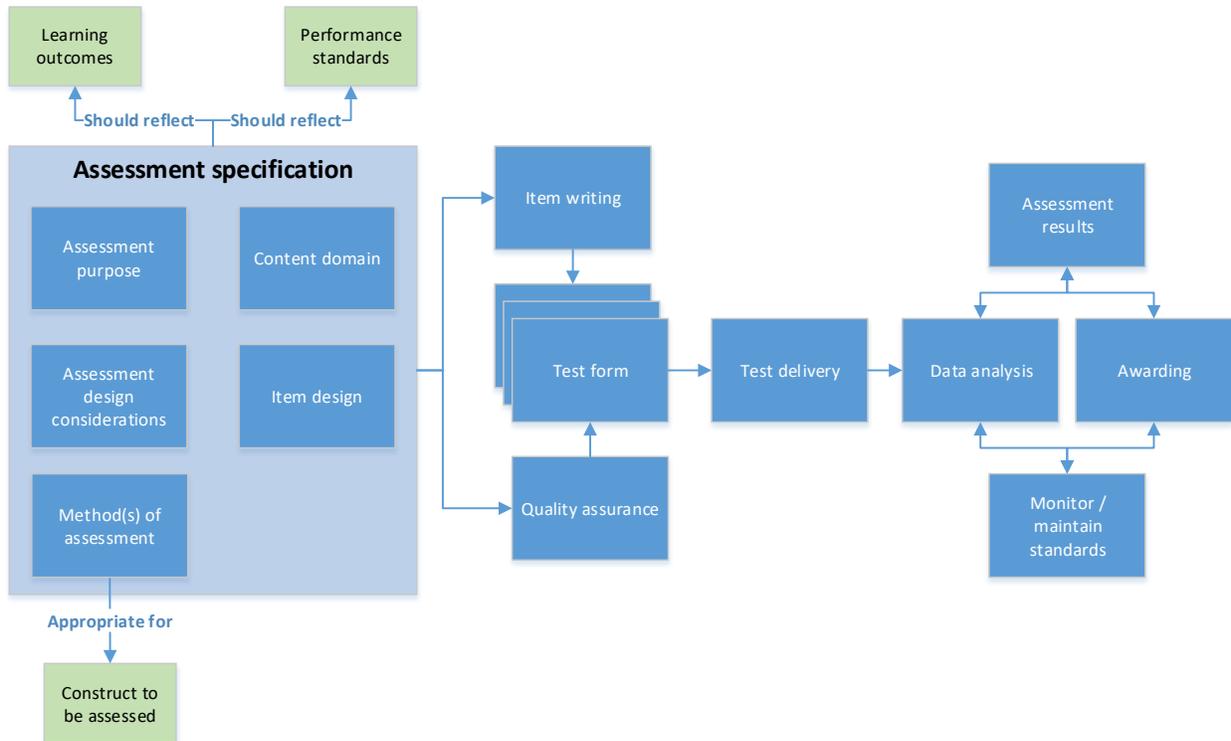


Figure 1. The role of the assessment specification.

## The assessment specification

Each assessment specification should begin with an explicit **purpose**, which clearly states what the assessment is designed for, and who it is aimed at. The clarity of the purpose statement is key to generating valid assessments.

An assessment specification should also clearly state all relevant **assessment design considerations**. These will typically include considerations such as:

- The age and level of the learner. Younger learners cannot be asked to sit a two-hour examination, for example.
- The timing of the assessment in relation to the curriculum. For example, is it a final examination or an in-programme assessment of competence?
- How the assessment(s) are to reflect the structure of the curriculum. For example, if the learning is unitised then the assessment may be unitised.
- The nature of the construct to be assessed. For example, skills-based training should be assessed by skills assessment, some kinds of skills can only be demonstrated by interactions within groups, etc.
- Whether the assessment is externally set and marked or whether it is to be based on naturally occurring evidence collected in a portfolio.
- Any other constraints on the assessment process. For example, restrictions due to practical constraints or health and safety considerations.

An assessment specification should also clearly define the **content domain**. The content domain sets out the relevant elements from the curriculum that are to be assessed. This will depend heavily on the nature of the learning and the purpose of the assessments. For skills-based learning, the content domain will usually include all learning outcomes and the assessment criteria will be expected to assess each of these fully. This is because learners undertaking a skills assessment will generally be required to demonstrate competence across all aspects of the skill. For a more knowledge-based curriculum however, the full curriculum may be assessed across a number of assessment cycles, and each individual assessment may only sample the curriculum. In this case the content domain will specify which parts of the curriculum may be sampled and to what extent. In some cases, the content domain may highlight learning outcomes which are impossible to assess directly (e.g. due to health and safety considerations).

The assessment specification will also specify the **item types** or **task types** which may be used. Item types / tasks must be appropriate for the construct being assessed and the purpose of the assessment. For example, if the assessment is to test writing skills, then extended answer items would be appropriate while multiple-choice items would probably not be. Similarly, if the assessment is to test verbal communication skills, then some form of presentation or group discussion task may be appropriate, while a written examination would not be.

The assessment specification may also indicate the **cognitive demand** which the various types of item/task are intended to assess (e.g. knowledge and comprehension, application of knowledge, synthesis and evaluation, etc.).

The assessment specification must, taking all of these considerations into account, include a design for the assessment. This will include specifying the structure of the assessment (including any components), the number of items/tasks (overall and per assessment criteria), the duration of the assessment (and of any constituent components), the item/task types, curriculum coverage (and sampling, if used), and the grading/competence model. If the assessment is to be a psychometric test, then the assessment specification will also contain details on how test forms are to be equated or linked.

The list below provides a typical checklist for the creation of an assessment specification.

1. the link between the curriculum and the assessment (ensuring face and content validity in technical terms)
2. a single point of reference for how the tests will work in practice (how assessments will be constructed, how standards (grade boundaries) will be set, etc.)
3. the writing plan for test development – ensuring that items are written for a specific purpose (i.e. populating the bank with sufficient content to construct sufficient assessments)
4. the basis for future validation studies (measuring, down-the-line, that the tests are fit for the purpose(s) for which they are intended)
A typical specification will include
1. The purpose of the assessment(s)
2. The number of questions in a test

3. The length of the test
4. Topic Coverage and number of questions on each topic based on a multidimensional content map
5. Alignment with the tests in the same subject at the previous and next grade (including reuse of items if appropriate, TBC)
6. The pass mark and/or grading levels
7. Sampling arrangements/Item picking rules
8. The types of questions to be used (e.g. Multiple Choice, Open Response, etc.)
9. The use of graphics and visuals – what is permitted and what is not
10. How any special arrangements for candidates affect item design
11. Language of the test
12. IT-based delivery factors (resolution, colour depth, etc. – limitations of delivery device – e.g. laptop, tablet, etc.)
13. Metadata specifications for items
14. Validity framework for the tests
15. Recommended trialling arrangements and required trialling outcomes for the content

## Developing the assessment specification

The specifics of how an assessment specification is developed will depend upon the context and any progress already made by the client. However the typical process is as follows:

1. Review any existing documentation and hold discussions with the client to fully understand the purpose of the assessments. If the assessments are to be associated with a qualification, then the purpose of the assessment should align with the stated purpose of the qualification. Ensure that the purpose statement is clear and succinct, and is agreed and signed off by the client.
2. Review the curriculum<sup>1</sup> and/or any available unit descriptions or learning materials in order to fully understand the content domain. The assessment specification should summarise (referencing unit/topic numbers and learning outcomes), those parts of the curriculum which will form the content domain of the assessments, and also any parts of the curriculum which will not. It is not necessary to include unit descriptions or curriculum statements in the assessment specification, but references (e.g. hyperlinks) should be

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<sup>1</sup> Note that in some cases there may not be a formal curriculum, only a set of standards. In such cases it will be necessary to extract a set of learning outcomes from the standards and use these to specify the content domain. This will typically involve identifying key elements within the standards and producing one or more learning outcomes for each. This is a non-trivial exercise, and may require the use of subject matter experts (SMEs) to review and agree the proposed learning outcomes.

made to them where appropriate. It is crucial that the client understands and agrees if the content domain is to exclude any parts of the curriculum.

3. Determine the most appropriate assessment model(s). This may be pre-determined i.e. clients will have a specific assessment model in mind when they commission the project. If not, then professional judgement is used to determine the most suitable method of assessment, given the purpose of the assessment and the learning outcomes of the curriculum. Some projects may require only a single assessment model (e.g. a knowledge-based examination to assess an academic subject), some may require several (e.g. a skills tests and a knowledge test and a portfolio of naturally occurring evidence for vocational or professional learners). Again, the client must understand and agree any decisions made on the assessment model(s) to be used.
4. Determine the delivery mode. That is, if the assessment includes a knowledge-based element, are the tests to be delivered on paper or on screen? Similarly, if the assessment is to include a portfolio element, will this be a paper-based portfolio or an e-portfolio? Usually these aspects are predetermined by the client and/or the context of the learning.
5. Determine the parameters for each component of the assessment. For knowledge-based tests for example, this will typically include the number of items or marks for each learning outcome, the duration, the curriculum coverage (and sampling, if used), and the grade boundaries / cut-score, and the number of test forms to be developed. For skills tests the parameters will include the required coverage of units and learning outcomes, the types of evidence required for each part of the assessment (perhaps down to the learning outcome level), the duration of the tests, and a summary of the approach to grading. Depending on the age and type of learner, the target reading level may also need to be specified.
6. Provide details on item or task design. For knowledge-based tests this may include allowed item types, mapping of item types against cognitive demand (i.e. which types of items should be used to assess which kinds of abilities), any constraints or requirements on the use of stimulus material (e.g. source texts, graphics, photographs, etc.). For skills tests this may include a description of the context of the assessment, a summary of the resources which are expected to be available, the role of the assessor, the level of guidance permitted to be given, and any assumptions to be made on prior learning.

Typically, once an assessment specification has been drafted, it should be reviewed and signed off by stakeholders to ensure that it is fit for purpose. This is best done by running one or more face-to-face consultation events where stakeholders are given the opportunity of reviewing each element of the assessment specification. Revisions are made until a version has been agreed by stakeholders.