CHAPTER 1:
INTRODUCTION

The *Guidelines for Integrated Assessment* is aimed at providers of education and training and the practitioners responsible for the delivery and assessment of learning.

The purpose of this publication is to provide guidelines for the development of assessment approaches that help the evaluation of a learner's ability to integrate knowledge. Assessments will focus on learners' ability to demonstrate applied knowledge or competence. According to the National Qualifications Framework (NQF) the evidence of applied competence is the learners' ability to integrate concepts, ideas and actions in authentic, real-life contexts. It is expressed as practical, foundational and reflexive competence, namely:

- Practical competence - the demonstrated ability to perform a set of tasks and actions in authentic contexts
- Foundational competence - the demonstrated understanding of what we are doing and why we are doing it
- Reflexive competence - the demonstrated ability to integrate our performances with our understanding so that we are able to adapt to changed circumstances and explain the reason behind these adaptations (SAQA, 2001: 11).

Within the NQF model, the terms "applied competence" or "applied knowledge" encompass all types of knowledge, i.e. practical and theoretical, and the ability to reflect within a particular context. In the past theoretical knowledge in particular, was privileged. It was decided that the NQF would value all types of knowledge and, depending on the context,. assign equal value to all dimensions of knowledge.

These guidelines are about assessment in an outcomes-based model. In this model the teaching, learning and assessment support the learners' progressive attainment of skills, attitudes and knowledge, both practical and theoretical. The purposes and outcomes of unit standards and qualifications describe this knowledge. It is assumed that readers are familiar with the core principles of outcomes-based assessment: fairness, validity, reliability, practicability and authenticity. SAQA has described these principles in the *Criteria and Guidelines for the Assessment of NQF registered Unit standards and Qualifications* (SAQA, 2001)[1].

Some may argue that an additional publication dealing with outcomes-based assessment approaches is not necessary. However according to international practice, the application of the assessment of integrated learning is still very limited. For example, Biggs (2001:7) states that in the United States of America, the mind-shift that assessment is part of the learning process rather than an end in itself, has not yet taken place. Assessment should be in the *service of learning and the learner* but the main focus is still on using it as a *selection tool*. Biggs ascribes this to deeply entrenched historical notions of assessment. From the earliest ages assessment has been used to "select the best individuals in terms of stable characteristics", or norms.

[1] Obtainable from www.saqa.org.za

He maintains that:

> Particularly in elitist schools and universities, … education is …a selective exercise, with norm-reference examinations [considered to be] entirely appropriate… [O]ften the procedures of constructing and administering tests, establishing reliability and validity, and interpreting and reporting test scores are based on parametric statistics, as if the assumptions of polygenetic inheritance, which produce the normal curve, are appropriate for educational assessment (Biggs 2001: 6).

We need these guidelines to expand the understanding of assessment as a critical component of the teaching and learning process in which it is carried out to support learning and determine the application of knowledge in authentic situations[2]. *Integrated assessment* (described in numerous policies of the emerging South African education and training system) has been identified as the mechanism to achieve this purpose. A cursory analysis of definitions of integrated assessment suggests that the concept is poorly understood. The first task of these guidelines therefore is to establish a common understanding of integrated assessment.

The following definition and two excerpts from registered qualifications highlight the extent of the agreement (or lack of it) about the understanding of integrated assessment:

The NSB Regulations (SA, 1998:4) provide the following broad description of integrated assessment:

> A form of assessment which permits the learner to demonstrate applied competence and which uses a range of formative and summative assessment methods.

Likewise, qualifications and unit standards registered on the NQF make explicit statements about integrated assessment as for example, in the following unit standard-based qualification:

Integrated assessment at the level of qualification provides an opportunity for learners to show that they are able to integrate concepts, ideas and actions across unit standards to achieve competence that is grounded and coherent in relation to the *purpose* of the qualification.

Integrated assessment must judge the quality of the observable performance, but also the quality of the thinking that lies behind it. Assessment tools must encourage learners to give an account of the thinking and decision-making that underpin their *demonstrated performance*. Some assessment practices will be of a more practical nature while others will be of a more theoretical nature. The ratio between action and interpretation is not fixed, but varies according to the type and level of qualification.

A broad range of task-oriented and theoretical assessment tools may be used, with the distinction between practical knowledge and disciplinary knowledge maintained so that each takes its rightful place.

Excerpt 1: National Certificate: Tourism Guiding

[2] 'Authentic situations' refer to meaningful application of knowledge and may include 'simulations' or other approaches as the context requires

In another registered non-unit standard-based qualification, integrated assessment is described as follows:

> The assessment methods are unique to the different outcomes. Theory tests focus on the knowledge of learners, while the practical assignments focus on the *demonstration of skills*. Therefore, the two assessment methods cannot be separated as the one complements the other in ensuring that the *purpose* of the qualification was achieved. Theory and practice are integrated in the following ways:
> Theory: Tests and an externally moderated final examination
> Practice: Projects and assignments, case studies, portfolios containing proof of learning process

Excerpt 2: Certificate: Tourism Management

When examining the NSB definition and the above two excerpts, the notion that applied competence is theoretical knowledge (but is also more than that) emerges quite strongly. In all cases, learners are required to demonstrate, as well as to understand. Also, both of the two excerpts from the qualifications link integrated assessment to the *purposes* or the *core* of the qualifications.

In both excerpts a clear distinction is made between practical knowledge and theoretical (or discipline-based) knowledge. The weighting of the practical knowledge in the second example is at the level of formative assessment. It is not subject to external moderation. In the first example, users of the qualification are warned that the "distinction between practical knowledge and disciplinary knowledge [should be] maintained so that each takes its rightful place".

This brief analysis seems to suggest that in this instance integrated assessment is interpreted both as assessment of theoretical knowledge, and also (but separately) as assessment of practical skills. Instead of attempting to assess integrated learning (the combination of knowing, doing, understanding and *application of knowledge*) this approach perpetuates the distinction between knowledge and skills.

This publication therefore will explore the current understanding of integrated assessment and how (as a guideline for the users) it is expressed in the following: qualifications and unit standards and in policies, guidelines and practice.

It is important to realise that integrated assessment will be understood in many different ways and on different levels. It varies according to the context in which the approaches are developed and used. For example, an integrated approach may be used to assess the smallest coherent unit of learning – a unit standard, or to assess across disciplines and fields of learning.

Kraak holds the following view:

> Knowledge is problem-oriented; it attempts to solve problems by drawing on multiple disciplines, which interact in the real-world contexts of use and application, yielding solutions and new knowledge which are not easily reducible to any of the participating disciplines (Kraak 2000: 15).

This is in keeping with the notion of applied competence. Therefore, to support the development of problem-oriented knowledge, integrated assessment needs to occur throughout a learning programme. The levels where integrated assessment approaches could be used are highlighted in Figure 1.1:

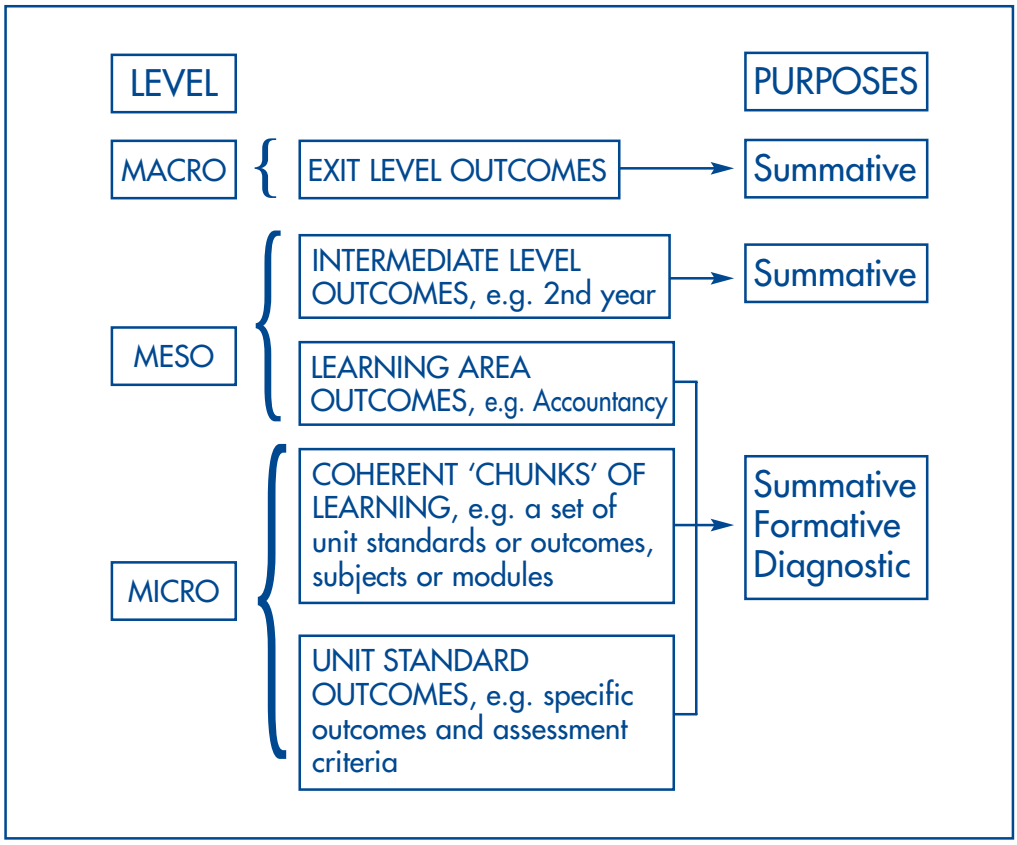


Figure 1.1: The possible different levels and purposes of integrated assessment approaches

Many possible permutations of integrated assessment exist. Mainly it depends on the context and the purpose of the assessment. It is important not to force integrated assessment across disciplines or fields of learning. For example, should the two majors of a Bachelor's degree be Sociology and French, it would be inappropriate to assess across such disciplines using a summative, integrated assessment instrument. On the other hand, should Financial Accounting and Business Economics be the majors in a Bachelor of Commerce degree, clearly these disciplines could be assessed by the integrated assessment approach at the summative level.

1 INTRODUCTION

The relationship between theory and practice varies in the different sectors and learning programmes. The way in which the idea of "theory applied in practice" is integrated in an Engineering curriculum will not be the same as the way it is integrated in an English Language or a Social Anthropology curriculum. In the NSB Regulations (1998) integrated assessment is explicitly required within the rationale and structure of a qualification. It is also required in a curriculum that will lead to the attainment of a particular qualification.

Assessment needs to be an integral part of a learning programme's teaching and learning activities. This infers that it should be part of a curriculum and learning programme development. We cannot assess in an integrated way if we do not teach and learn in an integrated way, because integrated *learning* comes before *integrated assessment*. The way in which teaching, learning and assessment activities can be developed as a coherent process is illustrated in Figure 1.2. This shows the progressive achievement of the purpose of a unit standard or qualification.

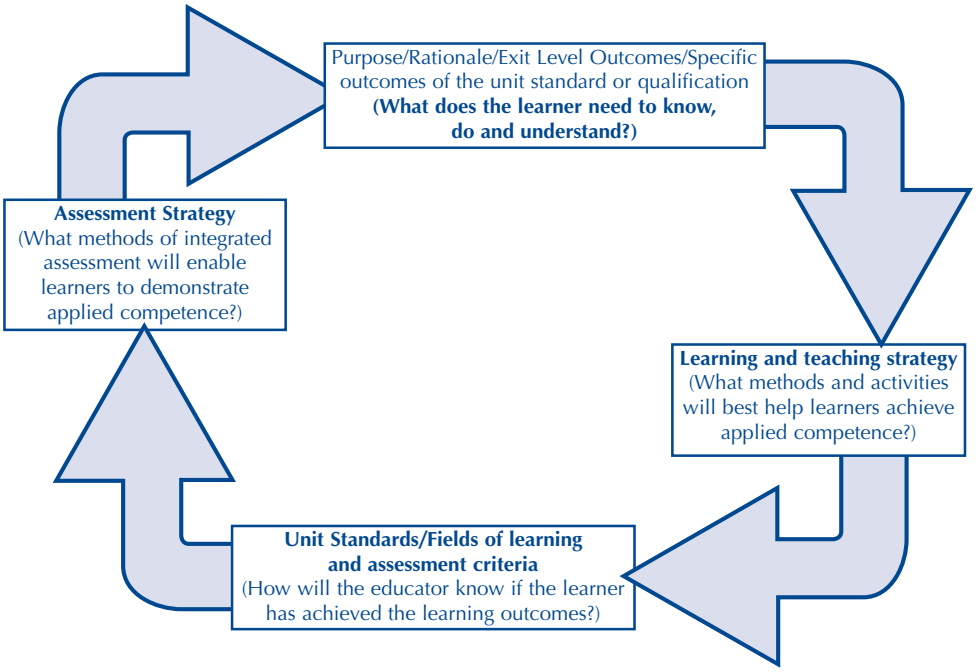


Figure 1.2: Towards teaching, learning and assessing in an integrated way

The process illustrated in Figure 1.2 suggests that careful planning of integrated teaching, learning and assessment is necessary. In a learning programme, the sequence and purpose of assessment obviously needs to support and enhance learning. It should not be seen merely as an add-on to be administered at the end of the programme.

A plan for an integrated assessment approach (especially across disciplines or fields of learning) needs to include sufficient evidence of a learner's competence. *The Criteria and Guidelines for the Assessment of NQF registered Unit standards and Qualifications* (SAQA, 2001: 37) asks: "Is there enough evidence to meet all the criteria needed to certify the learner

as competent?" The evidence considered as *sufficient* should be described in detail. The possibility that *naturally occurring evidence* may emerge through workplace practice and the like should also be borne in mind. Often "sufficiency of evidence" has been interpreted as meaning that the minute detail of a learning outcome and the assessment criteria must be assessed. Regardless of the purpose of the assessment (i.e. diagnostic, formative or summative) only a representative sample of learning can be assessed. During the planning process it must be decided which evidence will best demonstrate[3] applied competence.

"Sufficiency of evidence", is linked to the need to report on discrete disciplines or fields of learning. A plan should therefore include the details of the weighting of the composite parts of an assessment. These will relate both to the awarding of credits to the composite parts and to the integrated assessment results.

The following example shows how this could work in practice:
In the assessment of *Communication* integrated with the development and presentation of a *Business Plan*, the weighting of *Communication* will be determined by the extent to which an oral presentation of a *Business Plan* contributes towards the achievement of the required credits for *Communication*. In terms of the total number of credits required for *Communication*, an oral presentation could "count" 2 credits. The credit-rating and weighting of the integrated assessment should therefore indicate that *Communication* will "count" 2 credits, while the *Business Plan* will "count" 8 credits.

CONCLUSION

Rowntree (2003: 82) reminds us of the importance of meaningful assessment in an education and training system. He maintains that:

> If we wish to discover the truth about an educational system, we must look into its assessment procedures. What student qualities and achievements are actively valued and rewarded by the system? How are its purposes and intentions realised? To what extent are the hopes and ideals, aims and objectives professed by the system ever truly perceived, valued and striven for by those who make their way within it? The answers to such questions are to be found in what the system requires students to do in order to survive and prosper.

Many recently developed policies express the "hopes and ideals" of the education and training system of South Africa. The purpose of these policies is to create a process both accessible and enabling to support learning. Another is to develop in learners the skill of applying knowledge appropriately and in meaningful contexts. We hope that the *Guidelines for Integrated Assessment* will contribute to the growing understanding of the mechanisms to achieve meaningful learning.

[3] To 'demonstrate' encompasses practical, observation-based assessment approaches, but is also understood to mean to 'demonstrate' understanding through knowledge tests or other theory tests, as appropriate to the context within the assessment will occur.

CHAPTER 2:
WHAT IS INTEGRATED ASSESSMENT?

PURPOSE OF THIS CHAPTER

The purpose of this chapter is to develop a common understanding of integrated assessment within the context of an assessment plan or strategy. Integrated assessment will be defined; the various purposes of assessment will be explored. These purposes range from a developmental (or formative) focus, to a judgemental (or summative) focus. Because assessment is considered to be such an important tool to determine the health of an education and training system, the validity and reliability of assessment, particularly in terms of the reporting on integrated assessment will be discussed.

2.1 DEFINING INTEGRATED ASSESSMENT

Integrated assessment differs from the historical approaches to assessment. It is unavoidable therefore that the concept is interpreted in different ways. The following definitions and descriptions of integrated assessment are presented to explore the commonalities (and differences) in understanding:

(i) … integrated assessment should [assess] the ability to combine key foundational, practical and reflexive competence with some critical cross-field outcomes and apply these in a practical context for a defined purpose. The context should be relevant to real life application (SAQA/CIDA, 2003: 62).

(ii) … it should measure the extent to which candidates have integrated the knowledge, skills, personal qualities taught and/or modelled through the different unit standards which make up the programme (proposed Advanced Certificate in Education – School Management and Leadership) (www.saqa.org.za).

(iii) … assessment should ensure that the candidate is a consistently competent individual, capable of undertaking the whole activity being assessed rather than small time-consuming and trivial tasks. It is advisable to plan to assess not only one outcome as a whole activity, but several….across a number of different units. This process is called integration of assessment. Integrating assessment in this way will considerably lighten the burden on both assessor and candidate and will lead to more coherent and meaningful assessments (Scottish Qualifications Authority, 1997: 23).

(iv) Integrated assessment at the level of qualification provides an opportunity for learners to show that they are able to integrate concepts, ideas and actions across unit standards to achieve competence that is grounded and coherent in relation to the purpose of the qualification ((www.saqa.org.za) National Certificate: Tourism: Guiding)

(v) … making use of integrated tasks and activities, and a variety of methods, tools, techniques and contexts in assessing learners' performance (Department of Education (DoE), Draft revised National Curriculum Statement for Grades R – 9 (Schools)).

(vi) … the integration of knowledge and skills across subjects and terrains of practice is crucial for achieving applied competence as defined in the NQF … the NCS [National Curriculum Statements] seeks to promote an integrated learning of theory, practice and reflection (DoE, Qualifications and Assessment Policy Framework Grades 10 – 12 (Schools)).

(vii) The testing again and again of the same restricted range of skills and abilities can no longer be justified; instead of simply writing about performance, students should be required to perform in authentic or simulated real-world contexts. This demands innovative assessment approaches and methods, which ensure that all learning outcomes are in fact assessed, and that assessments add value to student learning (CHE, Draft New Academic Policy for Programmes and Qualifications in Higher Education (NAP), 2001: 112).

(viii) Integrated assessment refers to:

- Assessing a number of outcomes together
- Assessing a number of assessment criteria together
- Assessing a number of unit standards together
- Using a combination of assessment methods and instruments for an outcome/outcomes
- Collecting naturally occurring evidence (such as in a workplace setting)
- Acquiring evidence from other sources such as supervisor's reports, testimonials, portfolios of work previously done,
- logbooks, journals, etc. (SAQA, 2001: 55).

(ix) Integrated assessment at qualifications level enables learners to show that they are able to integrate concepts, ideas and actions across unit standards to achieve competence that matches the purpose of the qualification (LGWSETA, 2004: 13).

The key elements emerging from these definitions and descriptions of integrated assessment include the following:

KEY ELEMENT	SOURCE (see above)
The need to demonstrate applied competence, including the provision of evidence of the achievement of critical cross-field outcomes	(i); (vi)
Relating the assessment to a defined purpose (of unit standards and qualifications)	(i); (iv); (ix)
The context in which the assessment should be undertaken is key	(i); (v); (vii)
The practicability and efficiency of assessment approaches are important	(iii); (vii); (viii)
Integrated assessment approaches should "add value to student learning"	(iii); (vii)
Specifically linking the underpinning theory with practice makes integrated assessment a more authentic and coherent method to evaluate learning	(iii); (iv); (vii)
Integrated assessment should make use of a variety of assessment instruments whereby more than one mode of learning is assessed	(v); (vii); (viii)
Integrated assessment aims to assess in an appropriate manner, the extent to which learners can "integrate concepts, ideas and actions"	(i); (ii); (iv); (vi); (ix)
Integrated assessment is the assessment of knowledge, skills and personal qualities	(ii); (vi)

Table 2.1: Key elements emerging from various interpretations of integrated assessment

2

WHAT IS INTEGRATED ASSESSMENT?

Clearly integrated assessment is actually no different from good practice. The purpose of this publication is to encourage a deliberate engagement with a form of assessment that promotes meaningful learning. This form of assessment supports the achievement of the purpose of the qualifications and unit standards.

In this publication, the formal definitions derived from the SAQA regulations are used.

Assessment is defined in the following way:

> A structured process for gathering evidence and making judgments about an individual's performance in relation to registered national standards and qualifications (SAQA, 2001: 16).

Integrated assessment is seen as an important mechanism to present evidence of applied competence. (See the description of it that appears in the NSB Regulations (SA, 1998: 4) quoted in the Introduction on p10).

These two definitions encapsulate many of the principles and concepts that are used to describe assessment in the emerging South African education and training system. Integrated assessment is put into practice by doing the following:

- Assessing a number of outcomes together [or]
- Assessing a number of assessment criteria together [or]
- Assessing a number of unit standards together [and]
- Using a combination of assessment methods and instruments for an outcome/outcomes [and]
- Collecting naturally occurring evidence (such as in a workplace setting) [and/or]
- Acquiring evidence from other sources such as supervisor's reports, testimonials, portfolios of work previously done, logbooks, journals, etc. (SAQA, 2001: 55).

In the new education and training model the term *applied competence* points to one of the key principles of the NQF, i.e. that knowledge should reflect foundational, practical and reflexive competencies. This means that learners must be able to demonstrate *understanding* of the underpinning theory, i.e. the basis of their *practice* in a particular context and through reflection, be able to *integrate performance* with *understanding* (SAQA, 2001: 21).

The NSB definition also suggests that integrated assessment is not a once-off event because it "uses a range of formative and summative assessment methods". These assessments may have more than one purpose and may take different forms. In the *Criteria and Guidelines for the Assessment of NQF registered Unit standards and Qualifications* (SAQA, 2001: 26) *formative assessment* is broadly described as "assessment that takes place during the process of learning and teaching", with the purpose of supporting learning. *Summative assessment* is used to make a "judgement about [learner] achievement" that is used at a particular point (usually at the end) of a learning programme to measure progress in terms of the requirements of national standards and qualifications so that credits can be awarded.

Summative assessments take place throughout a curriculum (refer to Figure 1.1), at points when a judgement is made about whether a learner is able to progress to the next level/semester/unit of learning. The curriculum will therefore consist of a series of small or large learning programmes. A learning programme can be considered small if it covers only a particular unit of learning, (for example a skills programme, or short course, or part of the module) and large if it ends only at the completion of a full year of study in a discipline (refer to Figure 3.4 and 3.5 in chapter 3).

It is important that a learning programme should have a range of assessments (i.e. diagnostic, formative and summative) planned to take place at the appropriate moments. The NSB Regulations state that designers of qualifications should ensure that "integrated assessment [is] appropriately incorporated to ensure that the purpose of the qualification is achieved" (SA, 1998: 8).

Integrated assessment should offer an *opportunity to demonstrate the depth and breadth of learning* at all stages and in a variety of ways throughout the learning programme. As mentioned in Chapter 1, integrated assessment can be used at different levels and for different purposes during a learning programme. For example, at *qualification exit level* , a set of integrated assessments could be used when credits have been accumulated over time and at different learning sites (possibly through a series of skills programmes). This would be done in order to assess the integration of knowledge and skills in terms of the purpose of the qualification (LGWSETA, 2004). This approach contrasts with assessing a learner in discrete parts of a qualification (i.e. in terms of subject areas) where the assumption is that the overall purpose of the qualification has been achieved. In practice, educators seldom have an overview of the purpose of the qualification. Instead they focus on their own disciplines and the linkages between the parts of the qualification are not necessarily made. This suggests that it may be necessary to develop assessments at the qualification exit level that will evaluate learning across subjects and *terrains of practice*.

Throughout the learning programme, educators must seek to assess the *application of knowledge within their disciplines*, both for formative (or developmental), as well as for summative (or judgemental) purposes. This means that coherent "chunks of learning", including theory and practice, will be assessed. This can be achieved through "clustering" of unit standards and learning outcomes. The advantage is that the understanding of *theory, in support of practice*, is assessed. It also avoids duplicating the assessment of learning outcomes that overlap with outcomes in other disciplines or modules.

Integrated assessment, in terms of the assessment of more than one unit standard or learning outcome, should never be forced. Unit standards or learning outcomes will need to be assessed discretely, particularly in the early stages of a learning programme. However, educators should guard against over-assessment where each outcome "(or worse, each assessment criterion) [is assessed separately resulting in] hundreds of little fragmented meaningless assessments of the check-list type, taking up valuable learner and educator time without anything of value being learnt" (LGWSETA, 2004: 13). Assessments are important moments in the course of learning programmes. The cost and practicability of assessment

should be carefully considered when planning integrated assessment.

2.2 THE PURPOSES OF (INTEGRATED) ASSESSMENT

In line with the changing focus of the emerging South African education and training system the primary function of assessment is understood to be to support learning. For example, the following point is made in the National Curriculum Statement Grades 10—12 (DoE, 2002b: 23):

> … there are many reasons why learners' performances are assessed. These include assessment for monitoring progress, diagnosing or remediating barriers to learning, selection, guidance, supporting learning, certification, and for promotion.

This understanding of assessment is in agreement with international trends in education and training. In the *International Encyclopedia of Education* Keeves describes the purposes of assessment "as the basis for instructional decisions" (Keeves 1994: 364). These purposes include the following:

(a) placement decisions
(b) formative or monitoring decisions
(c) diagnostic decisions
(d) summative or attainment decisions.

Assessment also serves the purpose of quality assuring the process and the instruments of assessment and the performance of assessors[4].

Assessment is increasingly seen to be in the service of learning and the learner. Mothata confirms this when he argues that "the overall message [emerging from the new approach to assessment is] that assessment is now more about learning than testing; assessment for the benefit of the learner and their teacher rather [than] for accountability to some outside body or programme" (Mothata et al., 2003: 86).

Yet, Brooks and Brooks observe that all too often:

> Test results become not the means to assess movement toward ends and to shift directions if necessary, but the ends themselves. Schools over-emphasize test results – teachers gauge their own efficacy by them, parents fixate on them, and students come to fear them. Ultimately, test results obscure opportunities to honor and value individual differences and instead translate differences into classifications that place, even trap, students in a range of settings such as remedial and gifted programs.
>
> Further, most tests, particularly fact-based, multiple-choice tests are unreliable as indices of what students do or do not "know". In preparing for tests, student must guess which discrete bits of information the teacher – or the state – consider most important. Worst of all, in most school settings, testing is not part of the instructional program (Brooks and Brooks 1993:85).

[4] The different purposes of assessment which are discussed in detail in the *Criteria and Guidelines for the Assessment of NQF regsitered Unit standards and Qualifications* (SAQA, 2001) are not included here. Consult the SAQA website: www.saqa.org.za for an electronic copy

For assessment to be meaningful it should be fully integrated into teaching and learning and should guide decisions about the activities that will support and enhance learning. Assessment should not be an "add-on" used at the end of a learning programme in the form of a once-off written examination. This type of examination does not provide learners or educators with opportunities to determine the gaps in learning where remediation can be undertaken. Neither does a written examination generally attempt to assess the integration of learning in line with the purpose of a qualification. This does not mean that written examinations cannot be used as a form of assessment. However, an over-reliance on one form of assessment and assessing only one mode of learning is no longer defensible (SAQA, 2000).

Unisa's National Professional Diploma in Education (NPDE) General Tutorial Letter states the following:

> … assignments and examinations by their very nature cannot tell us everything about what you know and can do … In order to get a better picture of your overall achievements, we need to offer you additional opportunities to demonstrate what you can do [through the] inclusion of integrated assessment (UNISA 2004: 3).

Other key purposes of assessment such as ensuring accountability of providers within the system and measuring the health of the system must be taken into account when drafting an assessment plan. The NCS Grade R – 9 (Schools) suggests that:

> … assessment of learner performance should be a routine part of monitoring the performance of the education system … systemic assessment [should be] undertaken at the end of each phase within the general education and training phase (DoE, 2000: 94).

Monitoring both the efficacy of policies and the effectiveness of teaching and learning is an important purpose of assessment. Nuttal notes in the *International Encyclopedia of Education* that monitoring is "of major importance" [to most countries] and that they "devote substantial resources "to this aspect. The purpose of such monitoring is as follows:

> … [to] provide information about how the educational system as a whole is functioning, and usually … chart[s] changes in the level of student achievement over time. This monitoring or evaluation can contribute to demonstrating the accountability of the educational system, and the information derived from national monitoring commonly attracts much public attention and is extensively used in political debate (Nuttal 1994: 3904).

For example, a national monitoring system is required to report on discrete parts (or subjects) of qualifications in the South African Senior Certificate examination. This could influence the design of integrated assessment and have an impact on the way in which results of such assessments are reported. Large-scale assessments (such as the Senior Certificate examinations) rely heavily on the validity and reliability of the results. The next section therefore includes a brief discussion of the validity and reliability of integrated assessment approaches.

2.3 VALIDITY AND RELIABILITY[5]

The Council on Higher Education (CHE) maintains the following:

> … if we are to take assessment seriously, it is important to grasp how [validity and reliability] apply to … education practice and to understand that there tends to be a trade-off between these two qualities of assessment (CHE, 2001, 113).

Validity is concerned with the appropriateness, usefulness and meaningfulness of inferences made from the assessment results. Validity, therefore, refers to "measuring what is says it is measuring, be it knowledge, understanding, subject content, skills, information, behaviours" (SAQA, 2001: 17). The questions "Are we assessing the right things?" and "Are we assessing things right?" are important and provide guidance in terms of the fitness *of* and fitness *for* purpose of the assessment (CHE, 2001: 114).

The following strategies could improve the validity of assessment:

- Clarifying learning outcomes and their links to specific assessment criteria within an overall assessment strategy
- Ensuring that the methods selected are "fit for purpose"
- Using a range of assessment methods to ensure that all learning outcomes are assessed. Avoiding testing only those which are easy to test.
- Establishing good links between assessment, learning and personal development, by allowing students some element of choice, encouraging self-assessment and reflection (CHE, 2001: 114).

The validity of assessment is best achieved by setting authentic or applied tasks in the learning programme that closely simulate real world contexts.

The following may be concluded:

> … the closer the assessment is to the teaching and learning process, the more valid, accurate and fair it is likely to be … due to high levels of validity, assessment results should be dependable and comparable, although not necessarily statistically reliable (CHE, 2001:116).

Reliability in assessment is about consistency and the extent to which in similar contexts same judgements can be made in order to analyse the results statistically (SAQA, 2001: 18). The Scottish Qualifications Authority (SQA) maintains the following:

> … an assessment which is reliable gives consistent results on different occasions with different candidates and different assessors. Achieving a reliable assessment involves minimising the factors which give rise to errors (SQA 1997: 17).

Errors may arise from assessor practices, the environment for the assessment or from the sample of learning that is to be assessed.

[5] Validity, reliability, and practicality are discussed in detail in the *Criteria and Guidelines for the Assessment of NQF registered Unit standards and Qualifications* (SAQA, 2001) see Chapter 3. Consult the SAQA website: www.saqa.org.za for an electronic copy.

In integrated assessment it is not always possible to reconcile the requirement of statistical reliability with the criteria of validity and authenticity. In the past in many a standardised assessment, validity was sacrificed for reliability. In international literature the assessing of learning and the assessing of system efficacy are not considered to be entirely comfortable bedfellows. For example, Whitford and Jones (2001: 1163) argue that standardised tests do not provide a clear picture of learning achievements. They suggest that assessing learning with the same instruments and at the same time as assessing for accountability confuses the issue. It is unclear "whether it is the school or the student that is being assessed" and as a result "learning and achievement are fundamentally confused". Accountability, according to them, "reduces school quality to a numeric formula" and this approach is "over-simplified and ill-suited to evaluate many important aspects of schooling".

Integrated assessment plans have to take into account the requirements of reliability and validity. Currently, standardised testing is still the most commonly used tool to evaluate student learning. It is intended to measure simultaneously both the success (and lack thereof) of the learners and of the education and training system. The task of designers of assessment strategies (including integrated assessment approaches) is to balance the requirements of validity and reliability as far as possible. The following are some useful ways of reducing inconsistencies in evaluating assessment results:

- establish clear [and common] manageable assessment criteria
- use internal moderation (where [educators] meet during and after the [assessment] to compare … interpretations of the criteria and marking categories or bands)
- establish institutional frameworks to ensure consistency in the use of numerical quantification and verbal descriptions of [*inter alia*] level descriptors
- use several assessment tasks including a range of assessment methods (CH2001:155)
- evaluate the assessment criteria for efficacy and relevance.

CONCLUSION

All over the world educators are increasingly convinced of the following:

> … the intent of instruction is to promote students' abilities as thinkers, problem-solvers, and inquirers… Assessments, if they are to be aligned with current views on instruction and human learning, must more closely resemble meaningful learning tasks and assess the acquisition of high-level thinking and reasoning abilities as integral to subject-matter knowledge (*International Encyclopedia of Education*, 1994: 370).

Integrated *assessment* approaches therefore need to support integrated *learning*. They need to develop and measure learners' abilities not only to understand the underpinning theory, but also to apply it in authentic contexts and to reflect on what they are doing, and why.

CHAPTER 3:
TOWARDS DESIGNING INTEGRATED ASSESSMENT APPROACHES

PURPOSE OF THIS CHAPTER

The purpose of this chapter is to highlight the need for the planning of assessment as an integral part of teaching and learning. This is in keeping with the stated ideal that assessment should be undertaken in support of meaningful learning. The planning entails the articulation of principles and the development of policies and infrastructure that consciously promote the implementation of integrated assessment approaches.
In addition, the broad principles guiding the design of appropriate fit for purpose, integrated assessment approaches will be discussed and the broad steps to facilitate such designs will be provided.

3.1 PLANNING FOR INTEGRATED ASSESSMENT

The target audience of this publication are the education and training practitioners of particular providers (including workplace-based providers). However, it is the responsibility of the Education and Training Quality Assurance (ETQA) body to articulate education and training principles and to provide clear guidelines regarding delivery and assessment. This suggests that ETQAs should provide guidance and coherent definitions at the policy decision-making level to facilitate the interpretation of integrated assessment.

An over-arching assessment strategy needs to be developed. Providers need to implement the strategy following the principles set down by the ETQA. They will expand on and contextualise the assessment approaches for particular institutions. Such strategies should take into account the following:

- the provider's reporting and quality assurance requirements
- the ways in which responsibility for different aspects of assessment are shared between different assessors
- the composition of summative judgements within the context of a qualification, e.g. the role and weighting of exams, work-based assessment, group-based assessment, peer- and self-assessment, etc.
- the role of external examiners or external moderators, for example are they focusing on the validity of the assessment or only on its reliability?
- policy requirements for individual learners, e.g. the use of learning contracts, transcripts or records of achievement, a process for learner appeals, etc (CHE, 2001: 115,116).

The assessment strategy expresses the provider's generic approach to assessment. Depending on the context, the strategy could include guidelines as to how the generic approach will be implemented in a provider's various structures, e.g. faculties, departments or sub-units. The relevant unit standards and qualifications will also be mentioned. This stage entails curricula development. In the NQF context a curriculum has to do with the following:

- Determining the purpose and values of the learning.
- Analysing the needs and nature of the learners.

- Deciding on the outcomes or learning objectives.
- Selecting the content, the subject matter that will support achieving the outcomes.
- Deciding on the activities, methods and media for teaching and learning.
- Planning how [and when] assessment will be done.
- Planning the evaluation of the overall effectiveness of curriculum delivery (Bellis, 2000: 6).

The next level of planning involves what happens in the classroom. In the document National *Qualifications Framework and Curriculum Development* (SAQA, 2000: 5) a learning programme is defined as "sequential learning activities, associated with curriculum implementation, [which leads] to the achievement of a particular qualification or part qualification" (such as unit standards or skills programmes).

The various heads (of departments; subject heads; heads of training divisions and education and training practitioners) will be responsible for planning and designing assessment approaches and instruments. They will be guided by the broad principles and proposed steps for the development of integrated assessment approaches. They will focus on the purpose of unit standards, learning outcomes and qualifications.

In planning it is important to provide for the following aspects:

- opportunities for inter-disciplinary assessments
- opportunities to assess theory and practice together within one field of learning
- a logical sequence ensuring that integrated assessment approaches enable the progressive attainment of applied competence
- opportunities for review and quality assurance interventions.

Figure 3.1 shows the planning cycle – starting with the development of ETQA policies and guidelines. ETQAs are responsible for verifying that learning programmes leading to nationally registered qualifications and unit standards use integrated assessment appropriately within a particular context.

This is followed by policies and guidelines at an institutional level, agreed integrated assessment approaches at qualifications level, through to integrated assessment approaches to be used across and within subject areas and coherent "chunks of learning" in the classroom as illustrated in figure 3.1:

3 TOWARDS DESIGNING INTEGRATED ASSESSMENT APPROACHES

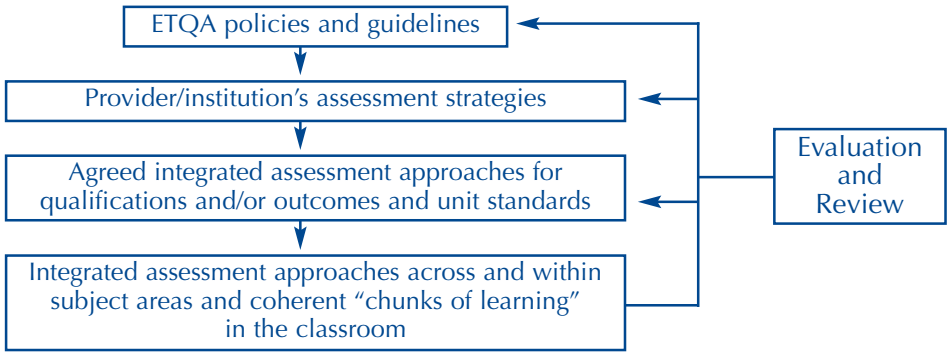


Figure 3.1: The planning cycle

In planning for integrated assessment, designers should be aware that there are several ways of talking about integrated assessment. (Chapter 2 may also be consulted for the various definitions of integrated assessment). For example:

- In integrated assessment we talk of the integration of skills, knowledge and attitudes required for the demonstration of applied competence in a particular area – the so-called 'head, hand and heart'. This includes, where appropriate, the assessment of critical cross-field outcomes. This kind of integration may take place within the smallest unit of learning, i.e. one unit standard, or across a number of units of learning or coherent "chunks of learning".
- Assessment should be of the whole, for example in terms of the title and purpose of the unit standard and/or outcome. Designers should avoid assessing small fragmented parts of the learning.
- Assessment should be of clusters of learning areas that have something in common. These may represent skills programmes, clusters for job purposes or exit level outcomes.
- Assessment could be across domains, terrains and disciplines, if appropriate, in line with the purpose of the unit standards, outcomes and qualifications.
- Integrated assessment should not be forced across units of learning and/or disciplines if it is not viable.

3.2 BROAD GUIDING PRINCIPLES FOR THE DESIGN OF INTEGRATED ASSESSMENT APPROACHES

A set of broad guiding principles for the design of integrated assessment approaches were developed in a consultative workshop that included stakeholder representation from Higher Education, Further Education and Training (FET) and General Education and Training (GET) (public and private). These guidelines are discussed below.

The key over-arching principle that emerged is that integrated assessment is not different from good assessment within the context of outcomes-based assessment approaches. As indicated in Chapter 1, the principles of fairness, validity, reliability and practicability apply to all outcomes-based assessment approaches. All meaningful assessments should attempt to incorporate the evaluation of understanding and the ways in which understanding supports and enhances practice. The extent to which it is possible to apply this principle in all forms of assessment will be dependent on the context.

It is acknowledged that many assessments will be undertaken on small (discrete) parts of learning in order to reinforce it, and to check whether learners are ready to progress to the next level of a learning programme. This is the formative and developmental purpose of assessment. However, practitioners agree that assessment should not be undertaken to test recall merely by being able to name facts. Rather the facts should be used within the context to demonstrate understanding. Such assessments are also considered to be integrated assessments. A decision about undertaking assessment should be guided by the following questions:

- Why are we assessing? (What is the rationale for the assessment?)
- What is it that we are assessing? (What do we want to find out?)
- What evidence is needed to provide proof of applied competence? (What will tell the assessor that the learner understands, knows and can do?)
- Which method is appropriate to use according to the purpose of the assessment? (Which instruments and approaches will allow learners to demonstrate applied competence?)

These questions could be used to evaluate the emerging integrated assessment approach.The application of the broad guiding principles and the procedure necessary to design integrated assessment approaches are demonstrated in Chapter 4.

Bearing in mind the above questions, the broad principles guiding the design of integrated assessment approaches are discussed below. These include the following:

1. Focus assessment activities on the purpose of the unit standard or learning outcome
2. Seek ways to link theory and practice in integrated assessment
3. Remember that assessment is not a once-off event
4. Provide sufficient evidence
5. Make assessment plans accessible to role players so that they are familiar with them

These guiding principles emerged from the consultative workshop with representatives from key stakeholder bodies.

3.2.1 Focus assessment activities on the purpose of the unit standard or learning outcome

The purpose of the qualification, unit standard or learning outcome describes the core competences that will be assessed and credited. Often assessment has been of the small, discrete parts of the unit of learning, rather than of the whole. For example, in the unit standard: *Apply technical knowledge and skills to align business unit performance to business goals* (sub-field Generic Management) the specific outcomes are the following:

a) Develop a performance management programme for a business unit
b) Investigate different performance management systems
c) Monitor performance in terms of a performance agreement
d) Investigate ways of addressing under-performance issues

Each of these specific outcomes has between three and seven assessment criteria. If an assessment is undertaken for each of the specific outcomes, or for each of the assessment

criteria, the learner will be subjected to between four and 18 assessments. This would be to achieve only five credits in relation to the overall 150 credits of the qualification. Clearly this type of assessment is not feasible, practicable nor even meaningful. The assessment should seek ways in which the *technical knowledge and skills* (i.e. the purpose of the unit standard) are evidenced through one or two assessments covering the full range of learning as applicable.

3.2.2 Seek ways to link theory and practice in assessment

The definitions and descriptions in Chapter 2 show that internationally it is considered more meaningful to assess the theory as it is applied in practice in real-life situations as far as possible. This notion is becoming increasingly important in the assessment of learning. For example, in the draft Advanced Certificate in Education (ACE) (School Management) an on-site assessment is a requirement. Where a site-based assessment is not possible, a defensible equivalent is required. Where simulations, role-plays and/or case studies are used, these should be supported by evidence that the learner can apply the knowledge and skills in a real situation. In this qualification there is a conscious effort to link theory and practice. In some interpretations (see for example Chapter 1) integrated assessment is seen both as the assessment of theoretical knowledge and (but separately) of practical skills. As mentioned before (see Chapter 1 p 12), this approach effectively perpetuates the distinction between knowledge and skills. Integrated assessment approaches are intended to assess applied competence, which is a combination of knowing, doing, understanding and the application of knowledge.

3.2.3 Remember that assessment is not a once-off event

In keeping with the principle that assessment should support learning, clearly a single assessment will not provide opportunities for diagnoses, development and remediation. A range of assessments intended to build and support understanding and application will be more appropriate. However, the results of formative assessments could form part of a portfolio of evidence for a summative evaluation of the overall purposes of the unit(s) of learning.

3.2.4 Provide sufficient evidence

There is a mistaken perception that outcomes-based assessment promotes an "all-or-nothing" approach, i.e. a learner is either competent or not yet competent. Outcomes-based assessments are carried out in terms of the overall purpose of unit standards and qualifications. The assessment is of the outcome. However, not all outcomes that make up the qualification or unit standard are equally "important". The core of the standard/qualification specifies the key competencies that are critical to achieve (see 3.2.1 above). In an assessment plan the various assessments should be appropriately weighted. Elective parts of a qualification cannot "count" as much as the core or fundamental parts. The credit-rating of the composite parts of the qualification will provide guidance in this regard. It may happen that "elective" components in one qualification are the "core" components of another. The weighting of the assessment should therefore be adjusted to link directly with the main purpose, i.e. the core of the unit standard, unit of learning or qualification.

Sufficiency (of evidence) may mean the following:

- The sample of the learning to be assessed is sufficiently representative of the overall purpose of the unit(s) of learning.
- Assessors are convinced that learners can provide sufficient evidence in relation to the sample mentioned above for them to infer that the performance can be repeated at the same level and with the required quality.

3.2.5 Make assessment plans accessible to role players so that they are familiar with the plan

The principles of transparency and fairness mean that at the start of the learning programme learners should have access to and are familiar with the following:

- the purpose of the assessment(s) (i.e. formative or summative).
- how the assessment(s) will be conducted (i.e. written, oral, assignment, project, case study, workplace-based, etc.) at what stage assessments will be conducted (i.e. at intermediate stages or at exit level stage).
- what the assessment(s) is/are intended to evaluate and what the criteria are for successful achievement.
- the weighting of the assessment(s) in relation to the overall purpose of the unit(s) of learning.
- how and when feedback will be provided.

3.3 BROAD GUIDELINES FOR THE DESIGN OF INTEGRATED ASSESSMENT APPROACHES

The following non-prescriptive guidelines were developed at the consultative workshop. They attempt to assist education and training practitioners to make sense of and to integrate assessment activities with learning and teaching in a supportive way. It is hoped that these guidelines will clarify the purposes of assessment throughout the learning programme and facilitate the sequencing of assessment "moments". The guidelines (or steps) include the following:

1. Study the level descriptors for a particular NQF level
2. Study the purpose of the qualification
3. Analyse the exit level outcomes, the critical cross-field outcomes and the main learning areas that deal with each dimension of the purpose of the qualification
4. Identify discrete areas that need to be assessed separately
5. Identify ways to facilitate integrated teaching and learning in areas where applied competence will be assessed
6. Sequence the assessment in accordance with the assessment plan
7. Design the assessment instruments
8. Review the process, instruments and application

3.3.1 Study the level descriptors for a particular NQF level

Level descriptors are those statements describing learning achievement at a particular level of the NQF. Level descriptors furthermore attempt to ensure the following:

> … coherence across fields of learning in the allocation of qualifications and standards to particular levels, and (shall) [to] facilitate the assessment of the international

comparability of standards and qualifications (Regulations relating to Level Descriptors for Levels 1 to 4 of the National Qualifications Framework, No 1348, September 2003: 3).

It is necessary to consider carefully the level, breadth and depth of learning required on a generic basis and at a particular level of the NQF to get an idea of what should be taught, learnt and assessed to ensure that learners meet the requirements for credits on a particular level. Level descriptors will form part of a matrix against which the purpose, exit level outcomes and assessment criteria can be matched to ensure that the full range of learning is covered in the learning programme. This will include the teaching, learning and assessment activities that inform the assessment plan.

For example, level descriptors on NQF level 4 indicate the following:

A learning programme leading to the award of a qualification or unit standards at NQF level 4 shall develop learners who demonstrate the following attributes:	
(a) applied competence	
(i)	a capacity to take the initiative to address any shortcomings they find a fundamental knowledge of the most important areas of one or more fields or disciplines, in addition to the fundamental areas of study
(ii)	an informed understanding of the key terms, rules, concepts, established principles and theories in one or more fields or disciplines
(iii)	an understanding of the organisation or operating environment as a system within a wider context
(iv)	an ability to apply essential methods, procedures and techniques of the field or discipline
(v)	an ability to apply and carry out actions by interpreting information from texts and operational symbols or representations
(vi)	an ability to use their knowledge to solve common problems within a familiar context;
(vii)	an ability to adjust an application of a common solution within relevant parameters to meet the needs of small changes in the problem or operating context
(vii)	an ability to motivate the change using relevant evidence
(vii)	a basic ability to gather relevant information, to analyse and evaluate it
(x)	an ability to communicate and present information reliably and accurately verbally and in writing
(b) autonomy of learning	
(i)	a capacity to take personal responsibility for learning within a supervised environment
(ii)	a capacity to take decisions about and responsibility for actions
(iii)	a capacity to evaluate their personal performance against given criteria
(iv)	a capacity to take the initiative to address any shortcomings they find.

Table 3.1: Level descriptors for NQF level 4

3.3.2 Study the purpose of the qualification

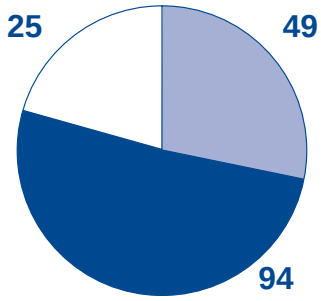
The *purpose* of the qualification highlights its core or rationale.[6] The assessment plan should therefore focus on the ability to demonstrate applied competence in terms of the requirements stated for the qualification. This should be in keeping with the breadth, depth and level of learning required for a qualification at a particular NQF level.

The assessment of these aspects will carry the most weight in terms of the overall assessment. For example, the purpose of the following qualification indicates that *managerial and entrepreneurial* competencies within a particular context will "count" the most:

> **Purpose of the Bachelor of Commerce: Tourism Management**
> The overall purpose of this qualification is to develop future managers and entrepreneurs in the tourism sphere

Excerpt 3: Bachelor of Commerce: Tourism Management

In the assessment plan, at the exit level outcome (or summative level) integrated assessment will occur in terms of the extent to which learners display applied competence in *management* and in *entrepreneurship*. The context of the qualification and the rules of combination will influence the weighting. For example, in the draft qualification *National Certificate: Information Technology: Systems Development*, the relative weighting between the composite components of the qualification out of a total of 168 credits is 49 credits for the fundamental components 94 credits for the core components and 25 credits for the elective components. This is illustrated in Figure 3.2.



The relative weighting between fundamental, core and elective components of the qualification

Figure 3.2: Weighting of assessment results

3.3.3 Analyse the exit level outcomes, the critical cross-field outcomes and the main learning areas that deal with each dimension of the purpose of the qualification

(1). Analyse the purpose of the qualification.

(2). Match the exit level outcomes or specific outcomes (for unit standards) and the critical cross-field outcomes with the level descriptors and the purpose of the qualification/unit standard/unit of learning.

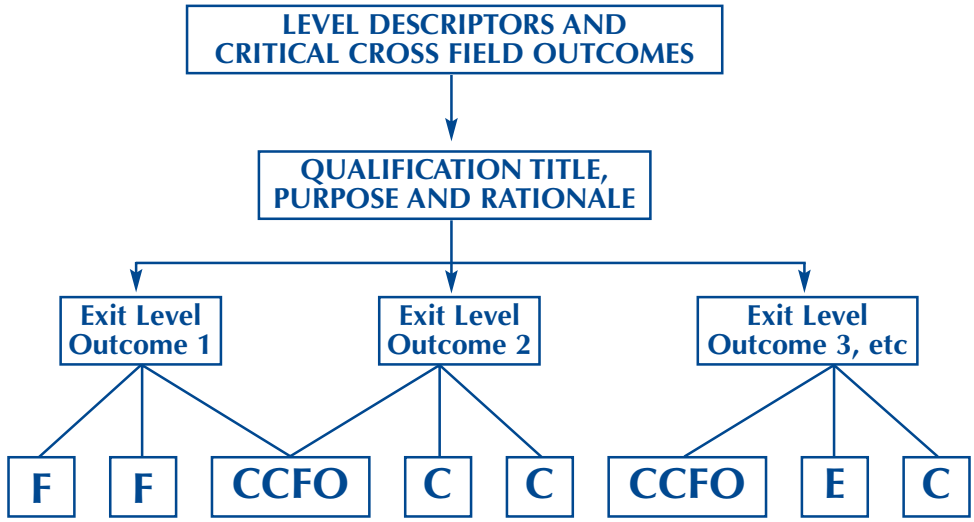
(3). Link the composite parts of the unit(s) of learning with 2 above, for example in a matrix.

[6] For additional details on a model for designing integrated assessment approaches, please refer to the publication obtainable from the website: www.saqa.org.za *Criteria and Guidelines for the Implementation of the Recognition of Prior Learning* (SAQA, 2004).

(4). Indicate the relationship between the following:[7]

- The level descriptors
- The title, purpose and rationale for the qualification/unit standard/unit of learning
- The exit level outcomes/specific outcomes (for unit standards)[8]
- The critical cross-field outcomes
- The assessment criteria
- The range

The relationship between these parts within the context of the qualification can be presented as follows:



Key: F – Fundamental components or unit standards of a qualification
C – Core components or unit standards
E – Elective components or unit standards
CCFO – Critical cross-field outcomes

Figure 3.3: The relationship between the various components of qualifications

3.3.4 Identify discrete areas that need to be assessed separately

As mentioned before (see Chapter 1, p 13; Chapter 2, p.24; Chapter 3, p. 35), integration should not be forced. The use of integrated assessment approaches to cover multiple learning areas is dependent on the context of the qualification. However, this does not mean that if a learner is to be assessed in a discrete learning area, it is not necessary to assess applied competence in that particular area. It only means that integrated assessment across disciplines is not justified in that case and the learner will therefore be assessed within the context of a particular unit of learning.

[7] Descriptions of each of these components are available in Appendix 4.
[8] Two types of qualifications are registered on the NQF: unit standard-based qualifications and non-unit standard-based qualifications. Unit standard-based qualifications are made up of unit standards, which are the smallest coherent units of learning linked to the overall purpose and exit level outcomes of the qualification, while non-unit standard-based qualifications specify only exit level outcomes and assessment criteria and are not made up of distinct unit standards.

3.3.5 Identify ways to facilitate integrated teaching and learning in areas where applied competence will be assessed

It needs to be emphasised once again that an assessment plan should not be an add-on, conceptualised and conceived at the end of a learning programme. Assessment, to be *in the service of the learner and of learning* must be integral to the development of the curriculum and the learning programme. Furthermore, in order to assess applied competence, it needs to be at the forefront of *what is being taught*. All learning and teaching activities undertaken in the course of the learning programme must focus on integrating understanding, practice and reflection.

A useful guide for conceptualising the teaching, learning and assessment activities as a coherent whole appears as Figure 1.2: "Towards teaching, learning and assessing in an integrated fashion" in Chapter 1.

3.3.6 Sequence the assessment in accordance with the assessment plan

In the beginning stages of a learning programme, opportunities for inter-disciplinary or inter-unit standard integrated assessment may be limited. This is because "novice" learners need to be exposed to the basic operations, concepts and principles of a field of learning before they can be expected to form linkages between various components. At the beginning stages of a learning programme integrated assessment could focus on how theory and practice can be integrated in that particular field of learning. As learners progress in the learning programme, an assessment plan should make clear at what stages and for what purposes inter-disciplinary (or inter-unit standard) integrated assessments will take place. For example, if a programme consists of *Communication, Accounting* and *Business Management*, then the assessment plan should indicate why and when integrated assessments could be undertaken. This is illustrated in figure 3.4.:

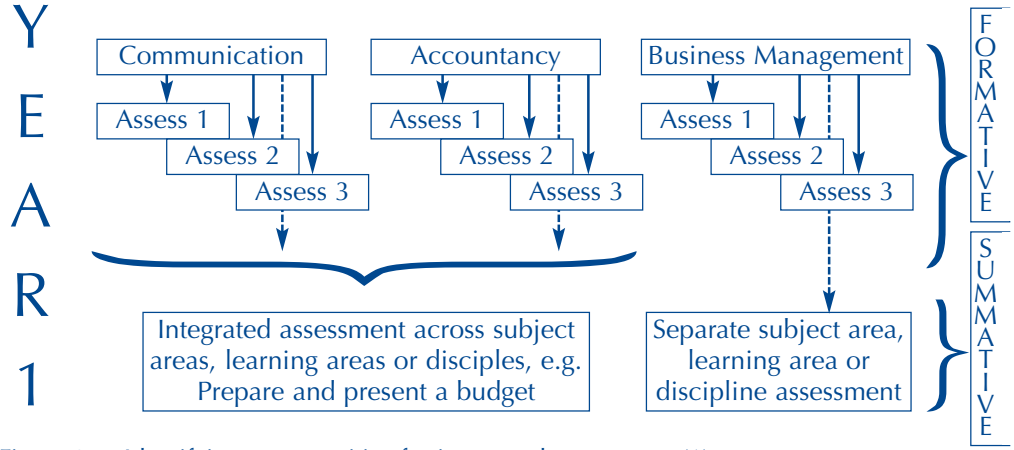


Figure 3.4: Identifying opportunities for integrated assessment (1)

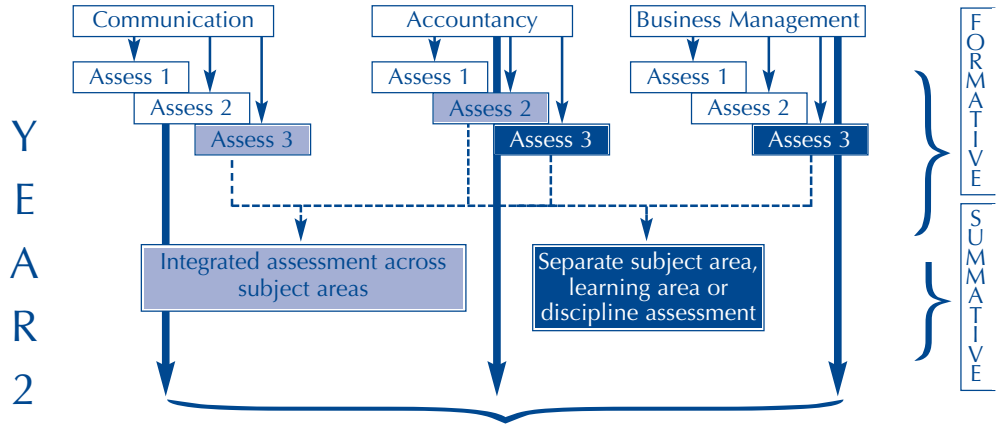
Note:

- *"YEAR 1" can be replaced with "Semester/Term" or any other appropriate logical end point of the learning programme.*
- *It may be necessary to develop a range of integrated assessment approaches.*

3 TOWARDS DESIGNING INTEGRATED ASSESSMENT APPROACHES

As mentioned before, in the early stages of a learning programme it may be necessary to structure a much greater range of formative (or developmental) assessments before inter-disciplinary/inter-field of learning integrated assessments can be undertaken. The use of the latter can be increased when learners becomes familiar with the differing concepts and principles of the various disciplines/fields of learning. This is illustrated in Figure 3.5.

Figure 3.5: Identifying opportunities for integrated assessment (2)



Integrated assessment across subject areas, learning or disciplines, e.g. Prepare and present a business plan

Note:

- *Integrated assessment will not always occur across subject areas. Coherent "chunks of learning" within a particular subject area, learning areas or discipline should also be assessed through integrated assessment approaches. As noted before , a range of integrated assessment approaches may be required.* The above diagrams show that there are many possible and appropriate opportunities for making use of integrated assessment approaches. The context, including the infrastructure and resources of the provider, will determine the feasibility of such processes.

3.3.7 Design the assessment instruments

At the point when assessment instruments are designed practitioners should decide how best learners will be able to demonstrate applied competence (refer to Figure 1.2 Chapter 1). **To reiterate, assessment should not be a once-off procedure, applied at the end of the learning programme, but should be integral to the teaching and learning throughout the learning programme**. A range of assessment instruments will be needed for different purposes, for example for diagnostic or formative purposes and for summative purposes. The assessment instrument must indicate clearly the relative weighting in relation to the assessment.

3.3.8 Review the process, instruments and application

This is a critical part of the overall process and will be used for quality assurance purposes. More importantly it should be used to evaluate the integrated assessment approaches developed and to test the effectiveness and practicability of the instruments and their application.

CONCLUSION

The principles and approach described in this chapter are intended to simplify complex curriculum questions. This does not imply that it is a simple process but that it is a useful tool with which to develop approaches to assessment that will enhance and encourage meaningful learning.

The broad principles and guidelines given in this chapter are not intended to be prescriptive. It is to be expected in a new approach to assessment that such guidelines will improve with practice. It is also important to remember that assessments must be contextualised for the qualification and for the situation within which they will take place. An important and critical principle is the need for holistic planning. Assessment strategies can no longer be planned and implemented as an end in themselves. The key to assessment is the way in which integrated assessment can be used to assess applied competence.

The final chapter of this publication will deal with the application of the principles and guidelines proposed in this chapter.