

# Assessment Guide

## Implementing criteria and standards-based assessment

## Authorship

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The *Guide* was written by **Susan Armstrong, Sandii Chan, Janne Malfroy and Rosemary Thomson.**

Susan Armstrong was on secondment to TDU from the School of Law and coordinated the consultation and writing process of the *Guide* during 2007.

Graham Hendry provided additional assistance in preparing the final draft.

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## Feedback

We welcome feedback on any aspect of this *Guide* that will help us improve future editions. Please email your comments or suggestions to [contact ltu@uws.edu.au](mailto:ltu@uws.edu.au)

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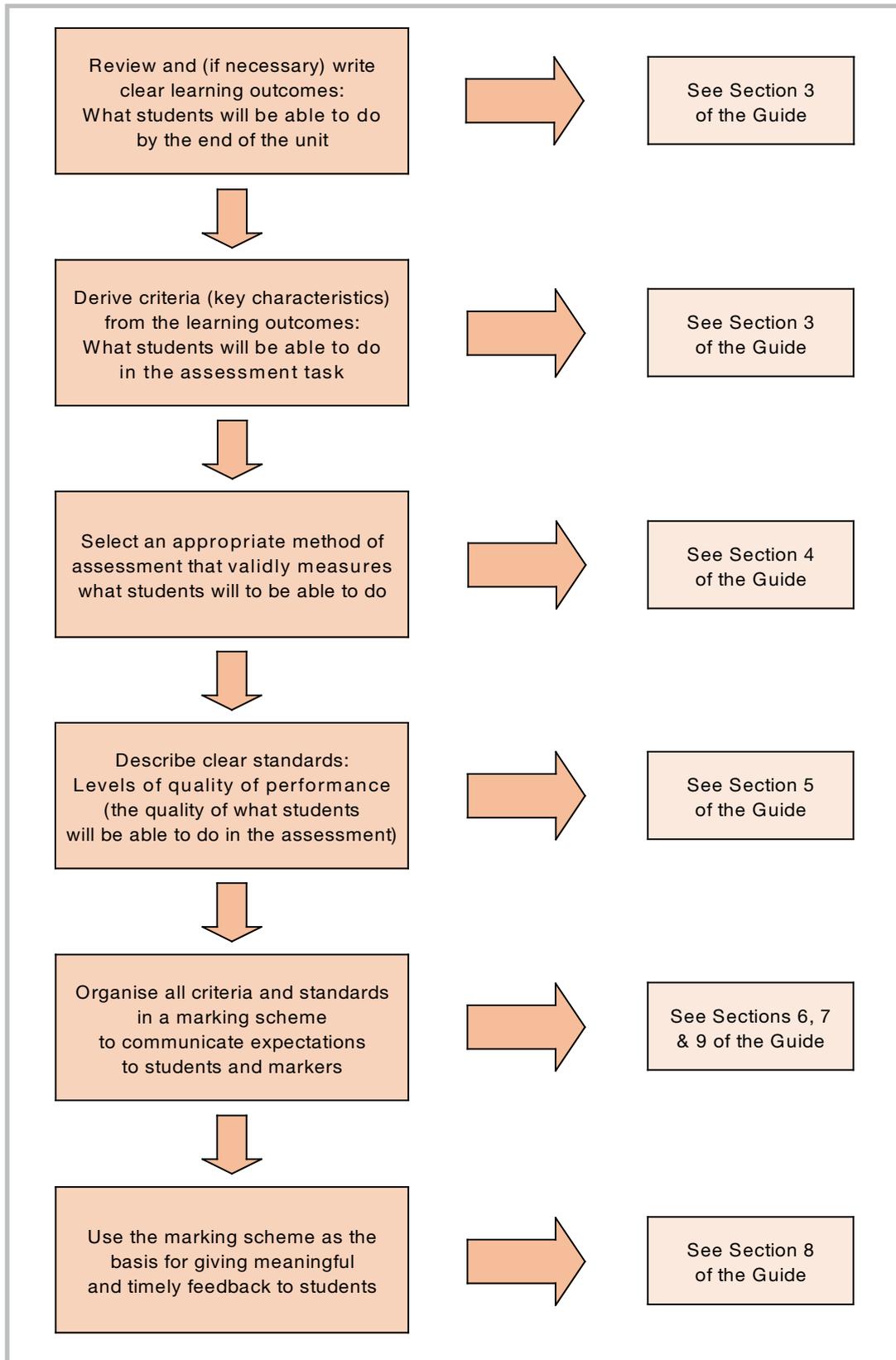
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Figure 1 Quick guide to implementing criteria and standards-based assessment  
 (your starting point may be different in different contexts)



## Purpose of the Assessment Guide

The UWS Assessment Policy is based on a criteria and standards-based approach to assessment. This model of assessment has the potential to shape effective student learning and teaching practice, and to assure quality. The policy is available on the University website.

The policy is supported by a range of initiatives. One key initiative is to provide staff with a resource that provides specific, practical advice about implementing criteria and standards-based assessment.

This *Guide* is supported by the Learning and Teaching Unit, and was developed in consultation with a range of UWS academic staff already using criteria and standards assessment. The *Guide*, together with other initiatives supporting the implementation of the policy, will assist staff to review and improve their assessment practices.

### Who might use this *Guide* and for what purpose?

While primarily designed for unit coordinators, the *Guide* may support assessment review and improvement at a number of levels.

**Table 1 Who might use this *Guide* and for what purpose?**

Who	For what purpose
Individual Teachers Tutors	<ul style="list-style-type: none"> <li>▪ To understand the practical implications of the UWS Assessment Policy for their teaching practice and units</li> <li>▪ To review assessment practice and align assessment in their units</li> <li>▪ To develop criteria and standards to evaluate student performance</li> </ul>
Unit Coordinators	<ul style="list-style-type: none"> <li>▪ To review assessment practice and align assessment in their units</li> <li>▪ In consultation with others teaching in the unit, develop a shared understanding of the criteria and standards required to evaluate student performance in unit</li> </ul>
Academic Course Advisors and Directors of Academic Program	<ul style="list-style-type: none"> <li>▪ In consultation with unit coordinators, evaluate assessment practices in programs and identify areas for development and support, particularly in the context of curriculum review</li> </ul>
School Academic Committees and Assessment Committees	<ul style="list-style-type: none"> <li>▪ To help identify a framework for reporting quality assessment practice within a School</li> <li>▪ To evaluate assessment practices in their School and identify areas for development and support, particularly in the context of curriculum review</li> </ul>

The *Guide* is presented in 11 sections and has been designed to allow the reader to dip into sections most relevant to them; see the Quick guide to implementing criteria and standards-based assessment on page iv. Alternatively, the *Guide* can be read progressively from one section to another. At the end of each section there is a summary of key questions which provide a framework for review and action.

- Sections 1 – 2 provide a good starting point for understanding criteria and standards-based assessment at UWS.
- Sections 3 – 8 provide more details about the process of implementing criteria and standards-based assessment.
- Sections 9 – 11 provide examples, a summary of key questions and a list of relevant resources.

The Quality in Learning Teaching (QiLT) website will also provide additional resources that complement the *Guide*. This site is located at [uws.edu.au/qilt](http://uws.edu.au/qilt)

# 1. Quality assessment

This section:

- explains the rationale for a criteria and standards-based approach to student assessment at UWS;
- provides an overview of the key principles underpinning quality assessment at UWS; and
- defines key terms.

UWS has a criteria and standards-based approach to assessment. This is in line with contemporary practice in Australian higher education.

A criteria and standards-based approach to assessment provides a quality framework that:

- guides and encourages effective student learning;
- fairly, validly and reliably measures student performance of intended learning outcomes; and
- defines and maintains academic standards.

A criteria and standards-based approach to assessment articulates expectations to students about what is required of them in an assessment task. It informs them what to aim for in their learning and on what basis their work will be judged. Adopting criteria and standards-based assessment also provides a defensible framework for evaluating and justifying the legitimacy of judgments about student performance. In addition, the explicit and transparent articulation of standards of performance provides greater clarity to panels reviewing results and grade distribution and aids in resolving student grade appeals (Sadler, 2005). A criteria and standards-based approach to assessment also facilitates benchmarking and maintenance of academic standards.

The criteria and standards-based approach provides a good opportunity for Schools to review the effectiveness of assessment within programs and units. The *Guide* has been designed as a tool to assist this process.

## Key principles of quality assessment at UWS

Assessment is an integral component of the student learning experience at university. Ramsden (2003) points out that for students, assessment “always defines the actual curriculum” (p. 182). Assessment is therefore a key driver of student activity. Assessment tasks which require students to engage with key content and to practise or demonstrate acquisition of key skills, knowledge and values will promote effective student learning.

Helping students understand what is required of them in assessment tasks helps them to target their efforts appropriately. Biggs (2003) states that “to get a high grade, students need to know the goals and learn how to get there” (p. 59). Students

understand goals most effectively when they are informed about the requirements for an assessment task and how judgments will be made about the quality of their performance.

When teachers clearly identify the key characteristics (or criteria) that they are looking for in response to an assessment task, students gain a much clearer idea of what they are expected to do. Similarly, when teachers publicise the anticipated levels of performance (or standards) of the assessment criteria, and provide opportunities for students to understand these standards, students know what is expected of them and how they will be judged. When both these processes occur, teachers manage expectations about assessment in an effective and transparent way. Retrospectively, providing standards of expected performance also helps to explain and justify grades awarded, for students, teachers and assessment committees. As Morgan, Dunn, O'Reilly & Parry (2004) conclude, "clear standards of expected student performance have increasingly become recognised as the vital ingredient in effective assessment" (p. 4).

### Valid assessment

Valid assessment design engages students in tasks aligned with the unit's intended learning outcomes and measures students' achievement of those learning outcomes (Morgan et al., 2004). Therefore, for an assessment to be considered valid it requires explicit alignment between intended learning outcomes of the unit, teaching and learning activities, and the assessment methods and tasks used to measure student achievement of those outcomes.

### Reliable assessment

In this *Guide* the term reliability refers to a demonstrated consistency of marking over time, between multiple markers, and across a cohort of students. When marking is done consistently (reliably) by multiple assessors, this is referred to as inter-marker reliability. When an individual assessor marks consistently from the start of a marking process to its conclusion, this is referred to as intra-marker reliability.

A criteria and standards-based approach to assessment provides a foundation for reliable assessment because it articulates the teacher's expectations of what students will achieve in the assessment task. Discussion and agreement between assessors develops a shared understanding of criteria and standards for an assessment task. This discussion is referred to as moderation and is an essential component of reliable assessment when there is more than one assessor. When moderation occurs after a trial marking of a sample of completed assessment tasks, it promotes consistent application of criteria and standards by the marking team. At the conclusion of a marking process, moderation enables assessors to come to an agreement about marks for unusual or borderline cases.

Marking from transparent criteria and standards also enables multiple assessors to provide more consistent feedback to students on their effort.

### Fair assessment

A fair assessment task is one in which students are given equitable opportunities to demonstrate their learning (Lam, 1995). Fair assessment processes require that students are not inadvertently placed in a better or worse position to demonstrate their achievement. Fair assessment is achievable within the timeframe allocated, and with the resources available. The provision of criteria and standards makes the assessment process more transparent for students.

It is also important that assessment processes and practices are fair and reasonable for staff. It can initially be time consuming for teachers to develop criteria and standards-based assessment as it requires them to articulate knowledge that is often implicit. However, this effort is well spent if it reduces time to mark student work and promotes consistency in marking. Well crafted marking schemes can minimise student questions about their result as the evaluative process is more transparent and more informative. Standards-based assessment may also reduce the time spent moderating results as standards are agreed prior to the marking process.

### Terminology

The following key terms are relevant to a discussion about assessment at UWS.

**Alignment** is the deliberate linking of stated learning outcomes, teaching and learning activities and assessment tasks to promote consistency between what is learned and assessed.

**Criteria** are specific performance attributes or characteristics that the assessor takes into account when making a judgment about the student response to the different elements of the assessment task.

**Fair assessment** is assessment that is feasible for the student's level of progression through their program, has transparent processes and provides timely and constructive feedback.

**Feedback** is appropriate and timely information provided to students about their performance.

**Formative assessment** provides an opportunity for improvement on the same task or within the same unit. The intention behind formative assessment is to promote student learning by giving feedback on progress towards the achievement of learning outcomes.

**Graduate attributes** are statements of the desired attributes that UWS undergraduates will possess upon graduation. See the *UWS Graduate Attributes Policy*.

**Learning outcomes** are statements describing what students will be able to do upon successful completion of a unit of work.

**Marking Scheme** is a document which explains how student responses to an assessment task will be assessed. It is provided to students and markers prior to assessment. Marking schemes may be analytic or holistic. Marking schemes are sometimes referred to as rubrics.

**Moderation** is the process of regulating the marking of individual assessors to achieve consistency in the application of assessment criteria and performance standards. Moderation involves discussion between assessors.

**Reliability** is a measure of the consistency of assessment results from one judgment to another.

**Standards** are statements describing the level or quality of student performance in an assessment task.

**Summative assessment** measures a student's performance in a unit and typically occurs at the end of a series of learning activities or follows formative assessment. The intention behind summative assessment is to verify performance and award grades or marks.

**Valid assessment** refers to the explicit and clear alignment between intended learning outcomes for the unit and the assessment methods used to measure student achievement of those outcomes.

## 2. Implementing criteria and standards-based assessment

This section:

- discusses a number of questions which staff may have about implementing criteria and standards; and
- overviews a suggested process for implementing criteria and standards-based assessment.

This section of the *Guide* anticipates a number of questions which academic staff may have about implementing criteria and standards in their units. The remainder of the *Guide* builds on this information and explains in more detail the process of implementing criteria and standards-based assessment and also provides a range of examples to assist staff in developing criteria and standards for their assessment tasks.

### What is the value of using criteria and standards-based assessment?

Criteria and standards-based assessment provides guidance to students about what's important in their learning and assessment. It also makes clear to students the basis on which their work will be judged. For staff, adopting a criteria and standards-based approach to assessment promotes greater reliability in marking where multiple markers are involved and, for individual markers, better consistency over time. Criteria and standards-based assessment also facilitates the provision of quality feedback to students. For the University and professional bodies, criteria and standards-based assessment provides assurance of quality learning and assessment in units.

### What is the relationship between criteria and standards?

The terms 'criteria' and 'standards' are often confused and sometimes used interchangeably (Sadler, 2005; Barrie, Brew & McCulloch, 1999). Criteria are often embedded within the description of performance standards, but standards should not be embedded within criteria. Criteria by themselves cannot constitute standards. Both are essential to assessment, but it is important to distinguish between criteria and standards.

### What are criteria?

Criteria are statements that identify the key characteristics or attributes of student performance in an assessment task. Criteria typically specify something that must be present in the student's effort at an assessment task or some role that must be accomplished by the student in order to achieve particular unit learning outcomes. See Section 3 for more detail.

### What do criteria look like?

Criteria usually take the form of brief specifications, for example if an assessment involves writing an essay or report, criteria might include 'shows evidence of reading and makes reference to relevant literature'. This criteria, which is commonly used in university assignments, will be performed at different levels (standards).

### Are criteria discipline-specific?

Since assessment tasks are normally tailored to the requirements of the unit and discipline, it follows that the criteria describing key characteristics of student performance will take account of that context. Sometimes it is possible to find a set of criteria that have been used elsewhere for a similar type of assessment task; however these will still need to be adapted to suit the new context. If you have used other assessment approaches, for example, norm referenced assessment, you will need to review your approach and develop a criteria and standards-based approach to be consistent with the revised policy.

### What are Standards?

Standards are statements which describe the level or quality of student performance in an assessment task. Establishing assessment standards requires academics to define and publish expected levels of performance in a unit. Assessment of student performance is then determined according to the agreed standards.

### What do Standards look like?

Standards can take a number of forms but are typically written in sentence format and contain brief but sufficient information about the quality and level of student performance to enable multiple assessors to make reliable judgments about the student's effort in an assessment task. For example, in an essay, standards might include 'thoroughly analyses and discusses literature sources'. For other examples see Sections 5 and 9.

### Are Standards discipline-specific?

Assessment tasks are normally tailored to the requirements of the unit and discipline, therefore the standards describing levels of performance will take account of that context. While it may be possible to find a set of assessment standards that have been used elsewhere in a similar type of assessment task, these will still need to be adapted to suit the new context. For examples, see Section 9 which has case studies from different disciplines.

### What are the implications for me, in my unit?

All types of assessment require criteria and/or standards. However, the form that these take will vary considerably depending on the type of assessment used. Even assessments that require answers which are either right or wrong are based on criteria and standards. In this case, the standard will usually specify the required number of correct answers to gain a pass. Short answer and problem-solving questions used in tests or examinations will benefit from explicit criteria and standards being provided to markers, to facilitate consistency in marking. All units are required to develop criteria and standards for their assessment tasks.

### A suggested process for implementing criteria and standards-based assessment

The summary provided below briefly outlines a suggested process for developing criteria and standards-based assessment from a unit's learning outcomes, however it is not suggested that staff necessarily start at the top and work down the list. Rather, staff will choose their own starting point depending upon the amount of work that has already been done to determine assessment methods and provide clear criteria and standards within their unit/s.

#### Summary of process:

- ✓ Write clear learning outcome statements for the unit and identify criteria which will indicate that students have achieved the intended learning outcomes
- ✓ Select assessment method/s that will appropriately assess the learning outcomes and design the assessment task/s.
- ✓ Describe qualitative standards or levels of expected performance for the assessment task.
- ✓ Organise criteria and standards for the assessment task in a marking scheme.
- ✓ Moderate the marking scheme with markers to develop shared understandings of the expected standards and facilitate consistent application.
- ✓ Explain and exemplify the marking scheme to students prior to the task and use it to provide targeted feedback following grading.

Although the summary above suggests a neat and linear process, designing and implementing criteria and standards-based assessment is often a more iterative and cyclical process as refinements are made to subsequent assessments. This process is described in more detail in the following sections.

# 3. Writing clear learning outcomes and identifying criteria

This section:

- explains why clear learning outcomes are important;
- explains the role of learning outcomes;
- illustrates how to write clear learning outcomes; and
- illustrates how to identify criteria from learning outcomes.

This section discusses the critical importance of learning outcomes and their relationship to designing effective assessment tasks. Ensuring the alignment of learning outcomes, teaching and learning activities and assessment tasks is one of the key responsibilities of educators (Biggs & Tang, 2007). Aligning assessment tasks with the unit learning outcomes also enhances the validity of assessment within a unit.

Learning outcomes are statements that describe what students will be able to do upon successful completion of a unit of work. From these observable and measurable behaviours, key assessment criteria are derived. Criteria are the specific performance characteristics or attributes that a student is expected to be able to demonstrate in an assessment task. Assessment criteria are the key to informing students about what is important and what they must *do* in an assessment task.

## Importance of clear learning outcomes

What do you expect your students to be able to do as a result of successfully completing your unit? Clear statements of intended learning outcomes communicate those expectations to students. In effect, learning outcomes tell students at the start of the unit what they should be aiming to achieve by completion of the unit. Clear learning outcome statements enable students to target their efforts appropriately.

From the teacher's point of view, learning outcomes guide the choice of content and teaching and learning activities, as well as informing decisions about the type and design of assessments that will provide evidence of achievement of the learning outcomes.

## Professional and UWS Graduate Attributes

The UWS Graduate Attributes define the qualities that students will have attained on graduation from their undergraduate degree. Graduate Attributes generally embrace knowledge, skills, 'foundational' literacies, attitudes and values (see the UWS Graduate Attributes policy at <http://policies.uws.edu.au>). UWS Graduate Attributes are intended to be defined and interpreted more precisely in the context of each academic discipline or program.

The example below illustrates how a UWS graduate attribute has been contextualised for a Law Program and unit.

### Example 1 Illustration of a learning outcome based on a contextualised UWS Graduate Attribute

UWS Graduate Attribute	A UWS graduate applies knowledge through intellectual inquiry in professional or applied contexts.
Program / disciplinary attribute for Bachelor of Laws	A UWS law graduate integrates theoretical and practical knowledge to identify, analyse and develop processes to resolve legal and related problems.
Learning Outcome for first year law unit 'Torts'	On successful completion of the unit students will be able to: analyse and solve tort problems by applying legal principles to novel fact situations.

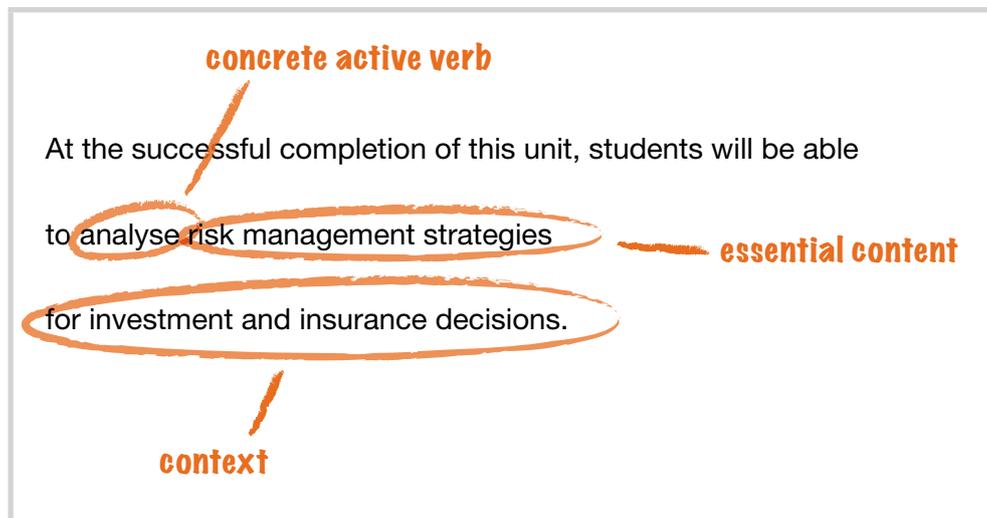
## Describing observable and measurable behaviours

Learning outcomes are statements of achievement expressed from the learner's perspective. They are framed in the future tense, as statements explaining what students will be able to do when they have successfully completed a unit. When writing learning outcomes, aim to capture the most important learning that students will develop in the unit. Describe observable and measurable behaviours so that valid judgments can be made about whether students have achieved the learning outcomes, and at what level.

Well-written learning outcomes:

- use concrete active verbs (eg explain, design, solve, apply, critique) and avoid vague verbs that are difficult to ascertain and measure (eg understand, know, gain awareness, appreciate);
- specify the essential content that students will be working on or with when they are doing the activity (eg what students will explain, design, solve, etc); and
- specify the context of the performance required.

### Example 2 Learning outcome describing an observable and measurable behaviour



It is important to write learning outcomes in language that students will be able to understand, since learning outcomes function, at beginning of semester, as advance notice to students of what they should aim for on completion of the unit.

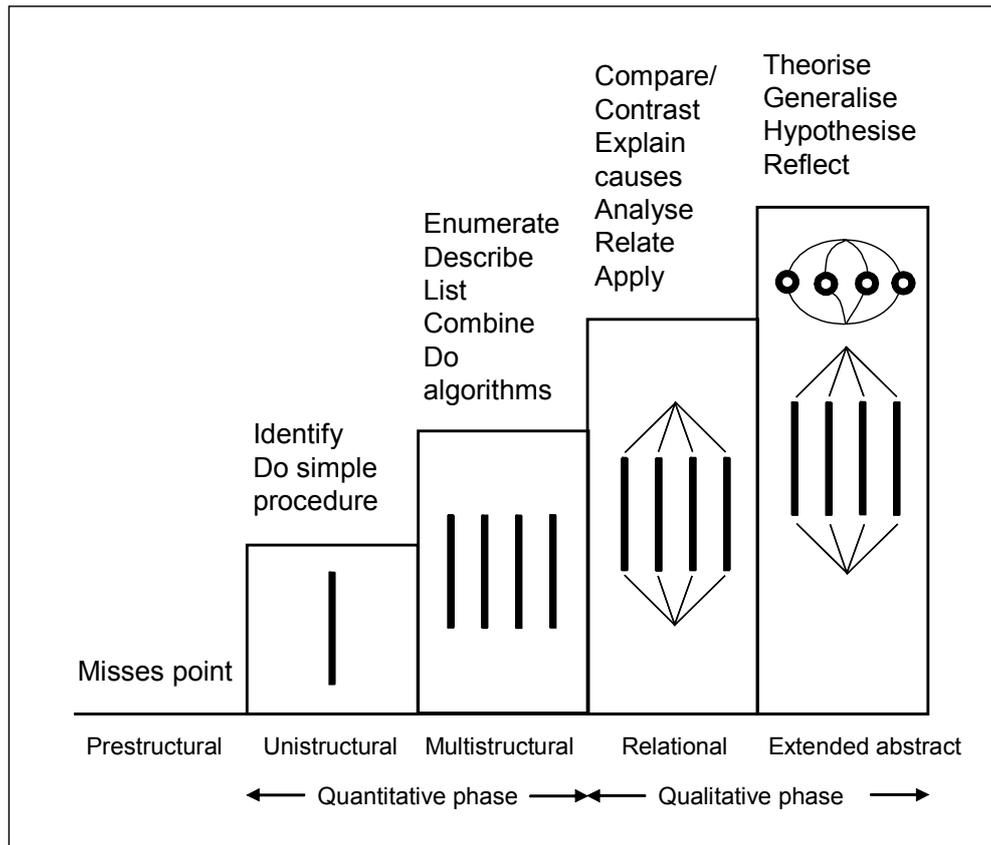
Check to see that your unit learning outcomes are achievable within the timeframe allocated for the unit and with the resources available. An important issue to consider is how much knowledge you expect your students to learn. Gardner (1993, as cited in Biggs, 2003) illustrates the tension between breadth and depth of knowledge when he observes that "the greatest enemy of understanding is coverage". Broad coverage, with little focus on the development of process skills, can promote surface or superficial learning. A balance between process and content makes deeper learning and understanding possible. It also creates a space to develop and apply intellectual and professional skills and attitudes.

To return to the question posed earlier, what do you expect your students to be able to do on successful completion of the unit? Biggs (2003) observes that most teachers state that they want their students to 'understand' or 'know'. Unpacking and naming levels of 'understanding' or 'knowing' so they are observable and measurable can be challenging. Reference to the various taxonomies of learning that have been developed over time may aid the process. These are suggestive rather than prescriptive and may not always fit neatly with the requirements of every discipline.

## Taxonomies of learning

Biggs describes understanding in a hierarchy of ascending cognitive complexity. His 'Structure of the Observed Learning Outcome' (SOLO) describes five levels of understanding using *verbs* to describe the level of understanding. SOLO is illustrated below.

Figure 2 A hierarchy of verbs that may be used to form intended learning outcomes



Source: Biggs & Tang (2007).

The five levels of understanding are explained in more detail below, along with an expanded list of verbs drawn from Biggs & Tang (2007).

### *Prestructural*

At this level the student acquires isolated facts or skills but fails to organise, connect or understand the issue or concepts. They may do initial preparation but not address the task appropriately. Students often come into a unit with a pre-structural level of understanding.

### *Unistructural*

At this level the student adequately performs one aspect of the task or masters a single conceptual issue but has not understood other essential elements. In an

assessment task performed at unistructural level, the student does not provide evidence of the relationship of this concept to broader concepts or systems.

*Sample verbs: Memorise, identify, recognise, count, define, draw, find, label, match, name, quote, recall, recite, order, tell, write, imitate.*

### ***Multistructural***

At this level the student is able to demonstrate adequate understanding of two or more concepts or aspects of a task. However, these are understood separately and, as in a unistructural level of understanding, the student does not relate these known concepts to broader concepts or systems. At a multistructural level, the student understands boundaries, but not systems.

*Sample verbs: Classify, describe, list, report, discuss, illustrate, select, narrate, compute, sequence, outline, separate.*

### ***Relational***

At this level a qualitative change in the student's understanding has occurred. The student is able to integrate parts into a coherent whole or theoretical framework. The student understands how to apply a concept to a familiar data set or to a problem. First year undergraduate units would typically have fewer learning outcomes pitched at a relational level than would a second or third year unit.

*Sample verbs: Apply, integrate, analyse, explain, predict, conclude, summarise (précis), review, argue, transfer, make a plan, characterise, compare, contrast, differentiate, organise, debate, make a case, construct, review and rewrite, examine, translate, paraphrase, solve a problem.*

### ***Extended Abstract***

At this level the student goes beyond a relational level of understanding, applying their understanding to novel contexts and/or extending their understanding in relation to other knowledge sets. They may question or go beyond existing principles, generalise, theorise and/or demonstrate understanding creatively or originally.

*Sample verbs: Theorise, hypothesise, generalise, reflect, generate, create, compose, invent, originate, prove from first principles, make an original case, solve from first principles.*

Another well-known taxonomy of learning which may assist in writing learning outcomes is that developed by Bloom (1969) and revised by Anderson and Krathwohl (2001). The revised taxonomy describes six increasingly complex levels of thinking or cognitive process: remember, understand, apply, analyse, evaluate, create.

**Table 2** The six categories of the cognitive process dimension and related cognitive process

Process Categories	Cognitive Processes and Examples
1. Remember – Retrieve relevant knowledge from long-term memory.	
1.1 Recognizing	(eg Recognize the dates of important events in U.S. history)
1.2 Recalling	(eg Recall the dates of important events in U.S. history)
2. Understand – Construct meaning from instructional messages, including oral, written, and graphic communication.	
2.1 Interpreting	(eg Paraphrase important speeches and documents)
2.2 Exemplifying	(eg Give examples of various artistic painting styles)
2.3 Classifying	(eg Classify observed or described cases of mental disorders)
2.4 Summarizing	(eg Write a short summary of the events portrayed on videotapes)
2.5 Inferring	(eg In learning a foreign language, infer grammatical principles from examples)
2.6 Comparing	(eg Compare historical events to contemporary situations)
2.7 Explaining	(eg Explain the causes of important eighteenth-century events in France)
3. Apply – Carry out or use a procedure in a given situation.	
3.1 Executing	(eg Divide one whole number by another whole number, both with multiple digits)
3.2 Implementing	(eg Determine in which situations Newton's second law is appropriate)
4. Analyze – Break material into constituent parts and determine how parts relate to one another and to an overall structure or purpose.	
4.1 Differentiating	(eg Distinguish between relevant and irrelevant numbers in a mathematical word problem)
4.2 Organizing	(eg Structure evidence in a historical description into evidence for and against a particular historical explanation)
4.3 Attributing	(eg Determine the point of view of the author of an essay in terms of his or her political perspective)
5. Evaluate – Make judgments based on criteria and standards.	
5.1 Checking	(eg Determine whether a scientist's conclusions follow from observed data)
5.2 Critiquing	(eg Judge which of two methods is the best way to solve a given problem)
6. Create – Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure.	
6.1 Generating	(eg Generate hypotheses to account for an observed phenomenon)
6.2 Planning	(eg Plan a research paper on a given historical topic)
6.3 Producing	(eg Build habitats for certain species for certain purposes)

Source: Anderson & Krathwohl (2001)

### Identifying criteria by analysing learning outcomes

Having established the central importance of well written learning outcomes, the next step is to identify the assessment criteria that will show evidence of students' achievement of the learning outcomes. Criteria are the key characteristics of student performance in an assessment task. The assessment criteria that you identify will guide students' efforts, informing them what is important and what they must *do* in the assessment task.

Earlier in this section we discussed how to write observable and measurable unit learning outcomes. Learning outcomes make explicit what students will be able to do on successful completion of a unit. Some of the terms used in learning outcomes will be picked up and used in the criteria for assessment. However there will also be further criteria implicit within the learning outcomes.

To identify implicit criteria, pay particular attention to the *verb* in the learning outcome which describes what students will be able to do on successful completion of the unit. The verb becomes the category of performance for which you will generate criteria. For example if the active verb is 'design' then ask yourself 'what are the essential characteristics of the design skill that must be performed by the learner?' These characteristics then form the criteria.

Not all characteristics will be equally important in the context of the particular assessment task. Any characteristics which you decide are not particularly important in this context could be discarded. A long list of criteria will be unwieldy for the students to address in their work and unwieldy for you to assess and mark.

### Formulating clear criteria

The following tips, drawn from Hughes (2007), will help in formulating clear criteria:

- Try to keep descriptions of criteria as concise and neutral as possible.
- Use concrete verbs that refer to observable behaviours which will signal more clearly to students what they should do.
- If possible, separate criteria so that each deals with only one behaviour.
- Remove unnecessary detail (detail will be added in the standards).
- Use the terminology from learning outcomes.
- If you intend to assess prose style, layout and structure of student's written work, specify these criteria.
- Limit the number of criteria to a manageable number. Be realistic about how many behaviours students can competently demonstrate in an assessment task and how many criteria assessors can juggle when grading.

Criteria should not contain information about quality of performance; for example avoid using descriptor words such as effectively, well, satisfactorily; instead reserve such terms for writing your standards.

In the process of formulating clear criteria you may decide that the unit's learning outcome statements need refinement. Writing clear learning outcomes is an iterative process and takes practice. Working with a colleague is often helpful in honing learning outcomes.

### Summary of key questions

The following questions may be useful when writing learning outcomes for your unit.

#### **Do your unit learning outcomes:**

- ✓ State in the future tense what students will be able to do on successful completion of the unit?
- ✓ Identify essential content, intellectual skills and professional competencies to be learned?
- ✓ Use concrete, active verbs to describe observable and measurable behaviours?
- ✓ Where appropriate, reflect graduate, disciplinary or professional attributes?
- ✓ Use clear, unambiguous language students can understand?
- ✓ Number no more than about six per unit?

#### **Do the criteria for your assessment task:**

- ✓ Clearly identify the important characteristics that students' work will demonstrate to show you that they have achieved the learning outcome/s?
- ✓ Use concise language and avoid unnecessary detail?
- ✓ Specify only one behaviour per criterion?
- ✓ Avoid describing standards of performance?
- ✓ Represent an achievable task for students?
- ✓ Represent an achievable workload for staff?

## 4. Selecting assessment methods and designing tasks

This section:

- discusses the essential link between learning outcomes and assessment method; and
- reviews issues to consider in designing an assessment task.

### Selecting assessment method to evaluate achievement of learning outcomes

Unpacking the intended learning outcomes for a unit will identify the criteria which provide evidence that students have achieved the outcomes. Intended learning outcomes also provide a guide for selecting assessment methods and designing tasks that will appropriately assess the learning outcome.

Selecting assessment methods according to how well they assess students' achievement of unit learning outcomes will promote valid assessment. Some learning outcomes are more effectively assessed by particular methods of assessment. Nightingale, Te Wiata, Toohey, Ryan, Hughes & Magin (1996) identified eight broad types of learning outcomes considered desirable across higher education programs and often reflected in graduate attributes. The table below draws on the work of Nightingale et al. (1996) and illustrates a range of appropriate assessment methods to evaluate student performance of these learning outcomes.

**Table 3** Assessment methods suited to measuring students' achievement of learning outcomes

Broad category of learning outcome	Assessment methods
<b>1. Thinking critically and making judgments</b> (Developing arguments, reflecting, evaluating, assessing, judging)	<ul style="list-style-type: none"> <li>▪ Essay</li> <li>▪ Report</li> <li>▪ Journal</li> <li>▪ Letter of advice to...(about policy, public health matters...)</li> <li>▪ Present a case for an interest group</li> <li>▪ Prepare a committee briefing paper for a specific meeting</li> <li>▪ Book review (or article) for a particular journal</li> <li>▪ Write a newspaper article for a foreign newspaper</li> <li>▪ Comment on an article's theoretical perspective</li> </ul>
<b>2. Solving problems and developing plans</b> (Identifying problems, posing problems, defining problems, analysing data, reviewing, designing experiments, planning, applying information)	<ul style="list-style-type: none"> <li>▪ Problem scenario</li> <li>▪ Group work</li> <li>▪ Work-based problem</li> <li>▪ Prepare a committee enquiry report</li> <li>▪ Draft a research bid to a realistic brief</li> <li>▪ Analyse a case</li> <li>▪ Conference paper (or notes for a conference plus annotated bibliography)</li> </ul>

Broad category of learning outcome	Assessment methods
<b>3. Performing procedures and demonstrating techniques</b> (Computation, taking readings, using equipment, following laboratory procedures, following protocols, carrying out instructions)	<ul style="list-style-type: none"> <li>▪ Demonstration</li> <li>▪ Role play</li> <li>▪ Make a video (write script and produce/make a video)</li> <li>▪ Produce a poster</li> <li>▪ Lab report</li> <li>▪ Prepare an illustrated manual on using the equipment, for a particular audience</li> <li>▪ Observation of real or simulated professional practice</li> </ul>
<b>4. Managing and developing oneself</b> (Working co-operatively, working independently, learning independently, being self-directed, managing time, managing tasks, organising)	<ul style="list-style-type: none"> <li>▪ Journal</li> <li>▪ Portfolio</li> <li>▪ Learning contract</li> <li>▪ Group work</li> </ul>
<b>5. Accessing and managing information</b> (Researching, investigating, interpreting, organising information, reviewing and paraphrasing information, collecting data, searching and managing information sources, observing and interpreting)	<ul style="list-style-type: none"> <li>▪ Annotated bibliography</li> <li>▪ Project</li> <li>▪ Dissertation</li> <li>▪ Applied task</li> <li>▪ Applied problem</li> </ul>
<b>6. Demonstrating knowledge and understanding</b> (Recalling, describing, reporting, recounting, recognising, identifying, relating and interrelating)	<ul style="list-style-type: none"> <li>▪ Written examination</li> <li>▪ Oral examination</li> <li>▪ Essay</li> <li>▪ Report</li> <li>▪ Comment on accuracy of a set of records</li> <li>▪ Devise an encyclopaedia entry</li> <li>▪ Produce an A – Z of...</li> <li>▪ Write an answer to a client's question</li> <li>▪ Short answer questions: True/False/Multiple Choice Questions (paper-based or computer aided-assessment)</li> </ul>
<b>7. Designing, creating, performing</b> (Imagining, visualising, designing, producing, creating, innovating, performing)	<ul style="list-style-type: none"> <li>▪ Portfolio</li> <li>▪ Performance</li> <li>▪ Presentation</li> <li>▪ 'Hypothetical'</li> <li>▪ Projects</li> </ul>
<b>8. Communicating</b> (One and two-way communication, communication within a group, verbal, written and non-verbal communication. Arguing, describing, advocating, interviewing, negotiating, presenting, using specific written forms)	<ul style="list-style-type: none"> <li>▪ Written presentation (essay, report, reflective paper etc.)</li> <li>▪ Oral presentation</li> <li>▪ Group work</li> <li>▪ Discussion/debate/role play</li> <li>▪ Participate in a 'Court of Enquiry'</li> <li>▪ Presentation to camera</li> <li>▪ Observation of real or simulated professional practice</li> </ul>

Source: Dunn (2002)

### Field of education context

The disciplinary context will also influence the choice of assessment task. Some assessment methods are more authentic in particular fields of education because they develop disciplinary skills and professional competencies. Recent graduates from Australian universities have indicated a range of learning methods as having been more effective for them; these preferred methods vary by field of education (Scott, 2005). Methods which are particularly effective in various fields of education in rank order include:

- *Science & Built Environment*: team/group project, assignments, field study/site visit, hands on practice.
  - *Health*: clinical placement, practical experience, lecture, hands on practice, assignments.
  - *Education*: practicum, practical experiences, assignments, hands on practice.
  - *Management & Commerce*: team/group project assignments lecture, class exercises, seminar-individual presentation.
  - *Sociology, Culture and Creative Arts*: assignments, class exercises, lecture, tutorial, group project.
- (Scott, 2005)

Often, assessment tasks will assess more than one learning outcome: in this situation decide which combination of learning outcomes are best assessed by a particular task. The following example illustrates a research and writing task in first year law assessing a range of learning outcomes. The task has been structured to give students a sense of working collaboratively as a legal team, developing facility with law specific research tools, using law to solve a real legal problem, and presenting the findings to the client in the form of a letter of advice written in plain English.

### Example 3 Research and writing task in *Introduction to Law*

In this first year foundational law unit, learning outcomes included the following statements.

On successful completion of the unit, students will be able to:

- Locate and evaluate sources of law, including primary sources (cases and legislation) and secondary sources using variety of legal research tools.
- Accurately cite sources of law using the style of the *Australian Guide to Legal Citation*.
- Contribute effectively and equitably to team tasks.
- Write clearly and appropriately to the context.

The task developed to assess this broad range of research, teamwork and writing skills was a group research exercise and individual letter of advice. To enhance authenticity for beginning lawyers, students formed teams to act as a 'law firm' and write a fictitious client a letter providing legal advice about her problem. As starting first year students, they had no familiarity with any area of law. To provide advice, the team had to identify, locate and evaluate and correctly cite primary and secondary sources of law using a wide range of electronic legal research tools. Students presented this information in a group response, explaining their research 'pathway' and the terms and databases they used to find the sources. They then had to identify the relevant parts of the sources to write individual letters of client advice in plain English.

Source: Margaret Hyland, *Introduction to Law*, 2007, UWS

## Designing the assessment task

Boud (1998) suggests that assessment will motivate and consolidate learning when it:

- is imaginative and engaging;
- communicates clear expectations;
- appropriately assesses the learning outcome;
- is authentic and set in a realistic context;
- is a worthwhile learning activity in its own right;
- adopts a holistic rather than fragmented approach;
- productively uses time; and
- develops student capacity for self assessment.

There are a number of issues to consider when designing assessment tasks to assess unit learning outcomes. These include the purpose/s of the particular assessment task, the need to minimise opportunities for plagiarism, the need to expose students to a variety of assessment experiences throughout their course, and the need to ensure a fair assessment load for both students and staff.

At this point it is also important to think about how you are going to communicate the task to students. This is explained in Section 7.

### **Purpose of the assessment task**

In addition to choosing an assessment method that appropriately assesses specific learning outcomes, the design of the assessment task will be influenced by a range of (sometimes conflicting) purposes.

#### *Encouraging learning*

The primary focus of assessment is to encourage worthwhile learning. Open ended, applied and authentic tasks are more likely to promote deeper, higher order learning and assess a wider range of competencies (Biggs, 2003). Students generally perform (and learn) more effectively in coursework than exams (Gibbs & Simpson, 2004).

Designing assessment to enhance learning is a creative exercise and often involves a degree of experimentation. It is important to recognise that refining assessment is an iterative process and you will generally need several attempts to develop a task that meaningfully engages students in productive learning.

#### *Maintaining standards*

While assessment is intended to cause students to engage in worthwhile learning, it also needs to assure the lecturer, the University, and relevant professional bodies that students have achieved the required knowledge and skills. When planning what students will do in an assessment task, pay particular attention to articulating the threshold ('pass') level for the task, ensuring that this is pitched at an appropriate level. Benchmarking processes involving colleagues in the School or beyond will be useful in developing confidence in judgments about threshold levels. See Section 4: Describing standards of performance.

#### *Providing feedback to students on their learning*

Students need time to practise the understanding and skills developed in the unit. Units staged early in the degree, or developing new concepts and skills, should provide sufficient guidance and constructive and timely feedback to enable students to acquire and practise their understanding before it is assessed. At least one task should be staged to provide opportunity for diagnostic or corrective feedback to students prior to a final task. See Section 8 for further discussion about the role of feedback in assessment.

### **Minimising opportunities for plagiarism**

Plagiarism in tertiary assessment tasks is perceived to be a growing problem in higher education. Access to a vast range of materials through the online environment has enabled people to easily copy and paste text into personal documents. Whilst Turnitin (online web-based text-matching software that identifies and reports on similarities between documents) is available to UWS staff and students through the Library website, assessment tasks can be designed to discourage plagiarism.

Strategies for designing assessment to minimise plagiarism include:

- *Design tasks which minimise opportunities to plagiarise:* Develop authentic tasks which draw on students' experiences or require them to apply theory to personal experience or current issues. Devise new assessment tasks instead of repeating assessments used in previous years. Make assessment items as current as possible so students do not have the chance to copy the work of previous years or other published works. Stage tasks so students have to demonstrate the process of independent learning and progressive use of knowledge in the task. Ask students to keep a log or reflective journal of their learning throughout the assessment task. Where online multiple choice tests are used, ensure these are available for a stated time span, or develop a rotating data base of questions to ensure no students are answering the same questions. The Australian Universities Teaching Committee (AUTC) website *Assessing Learning in Australian Universities* provides valuable information about plagiarism (James, McInnis & Devlin, 2002).
- *Provide clear guidelines for group work:* Students need to be able to distinguish plagiarism from collaboration. Provide explicit guidance and examples to assist them to distinguish and avoid plagiarism. Options for monitoring an individual's contributions to group tasks include asking students to write a short reflective paper or present a short talk about what they contributed to and learnt from the group process. Providing opportunities for peer assessment of group tasks can also help.
- *Assess students' understanding of plagiarism:* This requires that steps are taken to ensure that students understand plagiarism, can recognise it, know how to paraphrase, summarise and quote, develop appropriate practices to collect and identify information, and can apply the citation conventions in their discipline.

### Variety

A variety of learning outcomes requires a variety of assessment methods. No single assessment method can develop all educational goals (Boud, 1998). Throughout their course of study students should be exposed to a range of assessment experiences that involve interesting and challenging tasks. Ideally assessment should be planned in a staged, whole of program manner to ensure students have opportunities to develop and demonstrate a full range of graduate attributes.

### Ensuring a fair assessment load for students and for staff

A fair assessment load for students ensures that assessment evaluates achievement of learning outcomes as efficiently as possible. Morgan et al. (2004) observe that 'the principle of parsimony applies', that is, it is preferable to set as few assessments as possible to ensure assessment of learning outcomes. In most instances it is preferable to only assess each unit learning outcome once. A fair assessment load

also means that the size of the task is appropriate to the weighting. Fair assessment takes into consideration the diversity of the student population, their prior experience and the resources available to them.

### *Considering workload*

Teachers also want a reasonable marking workload. All costs of assessment increase with larger classes. The 'trick' is to generate productive student engagement in learning without creating an excessive marking load (Gibbs & Simpson, 2004).

Suggestions to do this include:

- Reducing the size and number of assessment tasks by focussing on essential learning.
- Staging assessment tasks which require less feedback in subsequent stages. Linking smaller formative tasks may be done in class or marked by self or peers whose feedback may be used in a later summative task.
- Encouraging transfer of learning across assessment tasks, for example, posing an exam question requiring knowledge gained from writing an essay or performing a practical task (Australian Universities Teaching Committee [AUTC], 2001).
- Using automated e-assessment methods designed to assess comprehension, application, analysis and synthesis, not only factual knowledge. The AUTC web site provides a valuable source of information on online assessment.
- Using group work and peer assessment to reduce the volume of marking.

These assessment modes require students to develop self-directed learning and collaborative capabilities. While these are essential skills for tertiary students, they need to be taught. Once students have developed self-directed learning skills and collaborative capabilities, group work can reduce marking time without impacting negatively on learning outcomes.

## Summary of key questions

### **In selecting and designing assessment tasks for your unit, have you:**

- ✓ Chosen assessment methods that validly assess achievement of unit learning outcomes?
- ✓ Chosen assessment methods that are effective for the field of education?
- ✓ Ensured that all the learning outcomes have been assessed?
- ✓ Exposed students to more than one type of assessment experience/method?
- ✓ Designed tasks that are challenging, authentic and holistic?

## 5. Developing standards of performance

Previous sections of this *Assessment Guide* explained how to formulate clear criteria for an assessment task.

This section:

- discusses and illustrates ways to develop standards which describe levels of student performance; and
- distinguishes holistic and analytic standards.

Explicit standards clearly communicate to students in advance how judgments will be made about the quality of their work. Standards-based assessment encourages teachers to articulate expected standards of performance and provides a clear and defensible framework within which to judge students' work. Teachers use their professional judgment in establishing assessment standards and in applying these to students' work.

### Where to begin?

There is no single or correct way to develop and describe standards. The process requires teachers to unpack “the rich evaluative knowledge [they] often carry around in their heads” (Sadler, 1987, p. 206). Sadler (2005) suggests that you start backwards by reviewing “a set of qualitative grading decisions made by teachers, and tease out the substantive reasons for them” (p. 192). In this process descriptions of different levels of performance are extracted from real judgments about levels of performance and examined against the works graded to describe standards and identify exemplars.

You may wish to draw on your experience of past student responses to similar assessment tasks to describe levels of performance you expect for each criterion or for the task as a whole. If you intend to develop multi level standards you might want to start by identifying a threshold (pass) level and then describe progressively higher and lower levels of expected performance, as shown in the following example:

### Example 4 Identifying threshold and other levels of standards for a criterion.

<i>Criterion: Shows evidence of reading and makes reference to literature</i>	
<i>Standards</i>	
Pass:	Relies primarily on recommended or standard texts with minimal or no reference to other sources.
Credit:	As well as meeting standard for pass, body of essay refers to some relevant literature and uses recommended or standard texts.
Distinction:	As well as meeting standard for credit, integrates ideas from wide reading of relevant literature and recent research.
High distinction:	As well as meeting standard for distinction, offers new understanding on ideas from literature. Distinguishes between the quality of sources and uses novel but relevant sources.
Fail:	Shows little or no evidence of reading recommended or standard texts; relies primarily on non-reviewed internet source; no reference to literature.

Identifying a threshold level of performance is often done during the process of designing an assessment, however discussing this level with colleagues and articulating it more precisely will build confidence in the appropriateness of the threshold level. Threshold benchmarking may be done with colleagues in the School or discipline colleagues at other universities or professional bodies.

### Determining the number of levels of performance

The number of levels you articulate as standards “depends on the ability of the assessment task to make fine distinctions in a reliable way and the degree to which fine discrimination is required” (Hughes, 2007). For example, most professional competency standards are single statements of the benchmark standard of competence required for registration or admission into a profession. A single standard may be simpler to construct than multiple standards, but may involve markers spending more time on provision of feedback to indicate how students fell short of the standard.

Multi level performance standards generally provide more detail about expected standards. They provide students with more guidance about how well they should perform and how judgments will be made about their work. A simple scheme is one with three levels of performance (eg meets expectations, exceeds expectations, below expectation).

Three level standards are easier to create, administer, explain and expand (Mueller, 2006). However, a three level standard may not sufficiently discriminate between student performance. The UWS final grades notations provide a five level standards framework from fail to high distinction. Individual assessment tasks may describe pass, credit, distinction and high distinction levels of performance; however it is not necessary to adhere to this framework.

### Involving colleagues in setting standards

It is desirable to develop criteria and standards with academic colleagues (Morgan et al., 2004). When colleagues debate and negotiate standards, they are more likely to develop a shared understanding of the standards and are more likely to apply these consistently.

It may also be appropriate to involve students in creating or negotiating the standards for assessment (Stevens & Levi, 2004). This can enhance student motivation, understanding of assessment requirements and performance on task (Lewis, Berghoff & Pheeney, 1999). Even if students are not involved in the process of developing standards, they need to engage in activities which will promote their understanding of the standards for their assessment task, as Section 8 explains.

Ideally, benchmarking should occur following the initial development of standards to ensure that standards are consistent with University, national and disciplinary standards of performance. Benchmarking involves comparing standards developed for comparable tasks within the university, by professional bodies or comparable disciplines in Australian and international universities.

### Holistic and analytic standards

Generally descriptions of standards will be either holistic or analytic.

*Holistic standards* embed criteria in a global description of the desired level of performance. Holistic standards judge the whole of the student's performance rather than its isolated parts, and are more likely to provide a realistic representation of student ability (Biggs, 2003). Holistic standards are likely to be useful when the sum of the student's performance in a task is more important than their performance in component parts. Holistic standards may be more suited to assessing complex higher order thinking tasks and to tasks where it is not easy to separate the performance of one criterion from another. Many academic writing standards are holistic "because it is not always easy to disentangle clarity from organization or content from presentation" (Mueller, 2006, <http://jfmuller.faculty.noctrl.edu/toolbox/rubrics.htm>). Depending on their detail, holistic standards may give only general or limited guidance to students about how to perform different characteristics of the task. Detailed holistic standards with multiple criteria may be more difficult for markers to apply.

### Example 5 Holistic five level standards for a scientific report writing assessment task in a first year science class

#### **High Distinction**

Outstanding quality experimental design with the addition of originality and/or creativity. Outstanding description of the background, communication and analysis of results and main conclusions of the investigation. Results presented in well-formatted and correctly labelled tables, graphs, figures etc. Analysis and synthesis of the main ideas from the literature are integrated and strongly linked to this investigation. Future investigations are suggested based on the investigation and synthesis of ideas from the literature. Several key references are used, cited in the text and formatted without error in the references.

#### **Distinction**

Superior quality experimental design, description, communication and analysis of the investigation. Superior quality description of the background and main conclusions of the investigation. Results presented in clear and labelled tables, graphs, figures etc. Analysis and synthesis of the main ideas from the literature which is linked and made relevant for this investigation. Superior level of analysis and interpretation of results, evaluated against scientific literature. Most aspects and formatting of references are correct.

#### **Credit**

Good quality experimental design, with controls and replicates. Good quality description of the background and main conclusions of the investigation. Raw data has been manipulated and clearly displayed in tables, graphs, and figures, and is in the appendix. Titles for tables and figures may have minor parts missing. Literature analysed and evaluated, may still lack clear linkage with the investigation. Most aspects of referencing are correct, but some references cited in the text may be missing or incorrectly formatted in the reference list. Written in the third person and past tense.

#### **Pass**

Satisfactory description, experimental design, communication and analysis of the investigation and results. All components of the criteria are present in the report, but there may be incorrect structure in some parts. For example the methods may be a series of dot points instead of a coherent description in paragraph form of what was done. Similarly in results, there may be an attempt to manipulate and analyse the data, but the best way of presenting the data has not been used eg pie graph versus a histogram. Literature has been used, but often this will include textbook instead of journal articles on the specific question under investigation. Mostly written in the third person past tense, but some minor omissions may have occurred. Most aspects of referencing are correct, however some references cited in the text may be missing or incorrectly formatted in the reference list.

#### **Fail**

Poor experimental design and description of the investigation. Limited analysis and discussion of results. Ideas are not clearly expressed and limited attention has been given to writing in the past tense third person. Inadequate and/or incorrect referencing.

*Source: Pauline Ross, UWS.*

*Analytic standards* describe separate levels of performance for each criterion. Analytic standards have the potential to provide more detailed feedback to students on how well they are doing in the various components of the task: this is particularly useful in formative assessment contexts where students are able to incorporate their learning from feedback into a subsequent task. Analytic standards may be easier for assessors to apply. They evaluate student performance more precisely, but may obscure its totality (Morgan et al., 2004; Biggs, 2003). Analytic standards are more likely to be used when the assessment task has a large number of criteria and where criteria are separately weighted (Mueller, 2006). It's worth noting however, that analytic standards with many criteria can be challenging for students to address since the task is broken up into many differentiated components. The following example of analytic standards is for an argue-a-case assignment. An example of an analytic marking scheme for mathematical problem solving, as well as other examples of analytic and holistic marking schemes, is provided in Section 9 (Case studies and examples).

Example 6 Analytic grading criteria and standards for an argue-a-case assignment

	D	C-	C	C+	B-	B	B+	A-	A	A+
<i>Percentage points</i>	1-3	5-7	9-11	13-15						
<b>Introduction</b>	15	5-7	9-11	13-15						
	Gives enough to tell what the topic is but little prioritizing	Describes topic, refers to past work, what is proposed to do here	As in C, but shows what past work has done/not done; logical progression to topic	Interesting and complex account to why this topic, what questions need to be addressed, foretaste of original contribution						
<b>Argument</b>	50	24-28	32-38	42-50						
	Some relevant points in descriptive lists, mainly either pro or con	More relevant points drawn from literature, lists both pros and cons, but has difficulty in making a convincing case	Most/all relevant points from mainstream literature; uses appropriate structure to resolve issues in convincing argument	As in B, but makes an original case in own voice, well supported by resources/references going well beyond the mainstream literature						
<b>Summary and Conclusions</b>	20	7-10	13-17	18-20						
	Summary is a list of either pros and cons leading to a lopsided conclusion	Summary recognizes differences but unable to resolve them, weak conclusion or jumps to conclusion	Summary is balanced leading to a well-reasoned conclusion	Summary leads to a surprise or original conclusion generating new issues						
<b>References</b>	15	5-7	9-11	13-15						
	Sparse; little evidence of library skills Incorrect formatting	Evidence of some search skills Standard references in mostly correct formatting	Comprehensive, showing care in researching the issue, format correct and clear	As in A, but uses unusual references to bolster an original argument Formatting as in B						

Source: Biggs & Tang (2007)

### Describe performance in clear, positive language

The standard should be described with sufficient detail to inform students how to perform at different levels. Aim to be precise and specific but don't labour to achieve so much precision that the standards become overly complex. Framing standards positively gives students a clear sense of what level of performance to aim for rather than what to avoid. Telling students what to do is preferable to telling them what not to do. The terms used to distinguish different levels of performance can be used to positively reinforce the notion of students developing competence.

Performance levels may also be distinguished by adjectives or adverbs to denote progression between levels (eg much, some, little, none). If you use adjectives which are open to a wide range of subjective interpretation (eg 'critical', 'appropriate', 'excellent', 'analytical'), explain or contextualise the terms in student activities to promote understanding of the standards (Hughes, 2007).

Finally, cross match the standards in the marking scheme with the task instructions to students to check that these are consistent.

### Summary of key questions

#### **When developing and describing assessment standards, have you:**

- ✓ Involved colleagues in setting standards?
- ✓ Identified an appropriate threshold level of performance for the task?
- ✓ Selected the appropriate number of levels to discriminate performance in the task?
- ✓ Described performance in clear, positive language?
- ✓ Benchmarked your standards against comparable disciplinary and/or professional standards, within the University and beyond?

# 6. Organising criteria and standards in a marking scheme

This section:

- discusses ways to communicate criteria and standards in marking schemes.

A marking scheme is a document which explains how student responses to assessment tasks will be evaluated. It identifies assessment criteria and articulates qualitative standards of achievement for each criterion. As explained in the previous section, this may be done either holistically or analytically. Marking schemes (terminology used in UK and Australia) may also be called rubrics (US terminology), matrices, scoring grids or scales and grading sheets. Several examples of marking schemes have been illustrated in the previous section.

This stage of the assessment design process transfers criteria and standards to a document to be published to students and provided to assessors. The documents published to students and assessors may be identical, or assessors' marking schemes may further explain expected levels of performance.

## Choosing format

Marking schemes can assume various formats, depending largely on whether you have described holistic or analytic standards. Holistic standards may be presented as a long description of a single standard, or may be presented in a table or a continuum if it contains multiple levels (for examples see Section 9). Analytic standards are generally presented in tabular form. Again, there is no single or correct way to organize a marking scheme. There are a number of electronic programs (including the 'grading sheet' in vUWS) that can assist the process. There are many examples of marking schemes and rubric models available online.

## Selecting labels

Labels describe the levels of student performance in the assessment task. Choose your labels carefully and try to use positive labels (novice, emerging, developing, needs improvement) instead of negative ones (incompetent, poor, inadequate, fail). Positive labels will encourage students to see their performance as a stage in emerging competence. The range of labels used will depend on the number of levels you have described. You may want to use the five level UWS grades: from fail to high distinction. Huba and Freed (2000) identify a number of verbal labels from a range of sources:

- Sophisticated, competent, partly competent, not yet competent.
- Exemplary, proficient, marginal, incomplete.
- Distinguished, proficient, intermediate, novice.
- Accomplished, average, developing, beginning.
- Excellent, typical, threshold.

You may also use ranges of grades or marks (1-2, 0-4), percentage bands or letters as labels distinguishing levels of achievement.

### Deciding how to allocate marks

Holistic standards commonly allocate a single mark for the whole piece of work. Analytic standards typically distribute marks for achievement of different criteria. If marks are allocated to elements of the task, consider whether the marker will determine ranges within the mark (applying further unstated standards) or simply award the mark if the student achieves at the stated performance level. The Marketing Case Study in Section 9 discusses and illustrates the process of allocating marks to this assessment task. Ensure the weighting of marks reflects the importance of criteria.

### Feedback

A well designed marking scheme can be a useful way of providing feedback to students following marking. More specific rubrics provide better guidance and/or feedback to students (Marzano, 2002). Analytic marking schemes may be useful for students doing a formative assessment task. Consider leaving space on the marking scheme for comments or further individualised feedback.

### Keeping it simple

The marking scheme should simplify marking, not make the task more difficult. Ideally marking schemes should fit on a single page with the elements being comprehensible at a glance. However, balancing utility with simplicity is often only achieved after several iterations of design and redesign. A marking scheme is also meant to enhance consistency between markers and make their task clearer. The process of promoting consistency between markers is discussed in Section 7.

### Summary of key questions

#### Does your marking scheme:

- ✓ Use positive labels to describe levels of performance?
- ✓ Allocate marks holistically or analytically, according to the standards described?
- ✓ Provide sufficient detail to guide students, assist assessors and facilitate feedback?
- ✓ Communicate criteria and standards simply, concisely and clearly?

# 7. Moderating standards with markers

This section:

- explains the purpose of moderation; and
- suggests ways moderation can be done before and after marking.

Moderation means regulating the marking of individual assessors to achieve consistency in the application of performance standards and marking criteria (Morgan et al., 2004). When markers are involved in collegially setting standards, they are more likely to develop a shared understanding of the standards and more likely to apply them consistently.

Where markers have not been involved in standard setting, it is important to moderate (discuss) the marking scheme with markers prior to it being applied by them (Morgan et al., 2004). This may include:

- unpacking terms in the marking scheme to facilitate shared understandings (eg what is meant by ‘analysis’ in this particular assessment task? What is the difference between a ‘comprehensive’ and ‘extensive’ range of sources?);
- pilot marking a sample of responses and discussing results to build consensus about how to apply the marking scheme consistently; and
- considering how to deal with any unusual response which appears to be outside the marking scheme.

Well-crafted marking schemes promote consistency amongst markers, however it is still important to moderate in the early stages of marking or following marking. This ensures that assessors have graded consistently according to the standards. Post marking moderation to verify consistency may include:

- double marking sample scripts within and between assessors;
- reviewing some graded tasks against exemplars or pilot marking sample papers used in the pre-marking process; and
- reviewing and remarking borderline or very high or very low results against the standards.

*(Morgan et al., 2004)*

Ultimately “human judgment is the most important element in every indicator of achievement” (Ramsden, 2003, p. 205). The assessor’s task is to identify the standard description which best fits the work being assessed, knowing that no description is likely to fit it perfectly (Sadler, 1987). Pre-marking moderation processes enhance the reliability of the marking scheme and can minimise post-marking moderation.

In medium to large cohorts where students have a wide range of abilities there will generally be a spread of results. Marking schemes which have been developed and moderated collegially and benchmarked against professional and disciplinary

standards are likely to confirm this spread of results. The *Marketing Case Study* illustrated in Section 9 indicates that criteria and standards-based assessment can precisely discriminate assessment performance and result in a very wide spread of results. Where the distribution of results is significantly skewed positively or negatively, it may be necessary to evaluate the marking scheme to ensure it has been pitched and applied appropriately. Marking schemes which have been developed according to the principles described in this *Guide* enhance confidence that skewed results may indicate students who are particularly able or less able, or teaching that is particularly effective or ineffective.

### Summary of key questions

**To promote understanding and consistent application of the marking scheme, have you:**

- ✓ Developed processes to ensure assessors have a shared understanding of the standards described prior to marking?
- ✓ Moderated the application of standards to determine if assessors have graded consistently according to the standards, and that there is consistency between the judgments of assessors?

# 8. Explaining, exemplifying and giving feedback to students

This section:

- discusses the importance of explaining and exemplifying assessment criteria and standards; and
- explains the significance of feedback and suggests strategies for facilitating timely and constructive feedback.

## Communicating standards

Even well designed assessment tasks need to be communicated unambiguously to students. To clearly communicate the requirements of your assessment task, the assessment instructions should be accompanied by a rationale which explains the logic of the task, as well as an explanation of the terms used. If students may be unfamiliar with the form of the task (eg what is a 'critical case study'), it may be useful to show them exemplars of the form. Early year students may also benefit from suggestions as to how they could approach the task (Morgan et al., 2004).

A marking scheme which clearly communicates criteria and standards will convey expectations about assessment performance. A marking scheme provides the basis for student activities to promote fuller understanding of what is expected. Well designed marking schemes can also provide constructive feedback to students about their assessment performance and indicate what they could do to improve.

## Explaining standards

Distributing standards to students is insufficient to ensure that students understand the standards, O'Donovan, Price & Rust (2004) argue that students need to engage in structured learning activities that examine and apply the standards. Their research found that even the most precise and comprehensive marking schemes, on their own, "failed to transfer meaningful knowledge on standards and criteria" to students (O'Donovan et al., 2004, p. 327). They concluded that knowledge was more effectively transferred by experience, preferably in a structured process involving students in activities to unpack and apply the standards.

Students can engage with standards in a number of ways. They may discuss what they think the standards mean and require, or they may apply standards to evaluate exemplars and then share their decisions. Stevens & Levi (2004) were surprised at the questions students asked when they examined rubrics, revealing "lack of awareness of some of the most basic academic assumptions" (p. 56).

Students in O'Donovan et al.'s study attended an optional marking workshop. They had to pre-mark two exemplar papers using the marking criteria and standards to be applied in their forthcoming assessment task. They then discussed in small groups

how they applied the standards, justified this to the large group and listened to the tutor's feedback in the context of annotated and marked versions of the exemplars. These students significantly improved their assessment performance compared to students who did not attend, and sustained their improvement in subsequent tasks.

Cowan (2002) developed a holistic single standard of competence for a reflective learning journal task in engineering and provided students with a copy of the standard. He then answered students' questions and discussed any issues raised by students until a shared understanding developed. Cowan claims that this process builds students' confidence in recognising the expected standard of work.

The case studies in Section 9 discuss other ways students can enhance their understanding of standards.

### Exemplifying standards

Exemplars are examples of student work chosen to indicate standards. They may be annotated to illustrate learning, achievement and quality. When formulating standards, exemplars can provide teachers with a starting point to begin articulating different levels of achievement. Exemplars are valuable to students when they are encouraged to consider how the exemplars illustrate the standards described in the marking scheme. Such activities also develop skills in self assessment, providing benchmarks against which students may judge their own performance. Exemplars can be made readily available to students through the unit's vUWS site or through a learning guide. Remember that permission needs to be sought from students to use their work as exemplars.

### Giving feedback to students

The purpose of feedback is to provide constructive guidance, to accelerate and improve student achievement of learning outcomes (Hounsell, 2003). Gibbs & Simpson (2004) state that feedback is the single most powerful influence on student achievement. Feedback is "most effective when it is timely, perceived as relevant, meaningful and encouraging and offers suggestions for improvement which are within a student's grasp" (Brown, 2001, p. 17). In Scott's (2005) analysis of student evaluations of their university experience in Australia, a common theme was that students wanted more meaningful and timely feedback.

Providing 'rich, detailed, descriptive feedback' in time for students to benefit from it is a critical part of the assessment loop (Boud, 1998). Criteria and standards provide targeted feedback, but need to be supported by other factors to ensure that students can make best use of feedback. These factors include providing prompt feedback, providing useful feedback and designing and scheduling assessment so students can make use of feedback.

### Providing prompt feedback

Feedback is effective when it is timely. Feedback is timely if students receive it when it still matters to them and in time to use it to improve performance (Gibbs & Simpson, 2004). This means returning graded assessment tasks or results to students as close to the assessment event as possible. This is not easy in multi campus units with a range of assessors, including sessional staff, and where genuine efforts are made to ensure quality control of the marking process by post marking moderation. Some ways to facilitate the prompt return of feedback are discussed below.

*Manage expectations:* Inform students when you intend to return their work. Remind them of the processes undertaken to ensure their work has been marked consistently and fairly so they understand that quality control processes may be time consuming. Explain other forms of feedback students might seek and receive about their progress and performance. Provide guidance about how they might do this effectively. Some other forms of feedback are: from peers; by questioning and listening in class; engaging in online discussion; by arranging an appointment with teachers especially early in the semester when they may have more time for feedback; from comments on past assessment performances. Consider asking students to specify whether they want feedback and on what issue or aspect of the task. Provide detailed feedback only to those students who request it.

*Use assessment methods which facilitate timely feedback:* Where appropriate to the learning outcomes, multiple choice and short answer questions may be administered and graded electronically, and feedback can be immediate and constructive. “The frequency and speed of such feedback ... may compensate for its relatively poor quality and lack of individualization” (Gibbs & Simpson, 2004, p. 17). Peer assessment can provide prompt and accurate feedback but generally not of the same quality as teacher feedback (Falchikov & Goldfinch, 2000), so ensure appropriate opportunities for both.

*Deliver feedback globally and/or electronically:* It may be appropriate and possible to provide generic feedback about the strengths and weaknesses of the cohort’s performance of the task. This may be facilitated by e-learning programs. Offering a remedial lesson to address the errors may be more desirable than individualised feedback (Gibbs & Simpson, 2004). Providing annotated model answers is excellent feedback (Ramsden, 2003). Some e-learning programs also permit the release of targeted individualised feedback electronically. You may develop banks of frequently repeated comments and use this as the basis for providing comments to individual students. Grading tools in e-learning programs make it possible to mark on screen, enter marks directly into electronic grading sheets, insert marks automatically into grade databases, and electronically release results to students along with global and individual comments, thus removing the need to touch paper. This has the potential to speed up the feedback process significantly. The use of voice technology might also facilitate the provision of more verbal feedback than is possible in writing.

*Use criteria and standards as feedback:* Once criteria and standards-based assessment has been established and mastered by markers and students, marking is more efficient. Annotated marking schemes can provide detailed formative feedback and inform students what they need to do to achieve further (Stevens & Levi, 2004). When marking schemes have sufficient detail, comments relevant to the student's performance may be highlighted to acknowledge achievement or to indicate how the student could improve. Standard comments can thus be conveyed efficiently by the marking scheme, providing scope for targeted individualised feedback. Students may also be requested to self assess their performance prior to submission by using the marking scheme and attaching this to the assessment task. This encourages students to perceive feedback as a dialogue and develop skills of self evaluation. If you ask students to self-assess prior to submission, consider marking their assignment before you look at their self assessment. Then target feedback to the area/s where your assessment differs from the student's assessment.

### Providing useful feedback

*Be sincere and positive:* Acknowledge and affirm the student's achievement. Although praise may not improve performance, it increases student's sense of self efficacy or competence (Black & William, 1998). Self efficacy is linked to persistence and effort and predicts academic achievement and deep learning (Gibbs & Simpson, 2004). Maintaining motivation is especially important for new students. Encourage learning, rather than measuring failure.

*Be constructive and specific:* Students need to know exactly what they must do to improve performance. This is particularly important for first year students. Don't pose questions. Make or refer to clear statements which tell students what to do to improve their performance. Adequate detail on marking schemes will facilitate specificity, but this detail still needs to be personalised for the individual student. Balance your comments with both positive remarks and critical (yet constructive) comments. It's good to begin and end with a positive comment, mentioning areas for improvement in between (the 'feedback sandwich'). Avoid symbols (ticks/crosses/circles) without explanatory comment.

*Feedback on the performance, not the person:* Focus on what students have done, and omitted to do, and what they can do to improve their performance. Do not remark on their personal qualities. Information on progress in the attainment of learning outcomes is as useful as information about a specific performance.

### Designing and scheduling assessment so students can use feedback

Assessment should be designed, scheduled and returned so that students have an opportunity to receive and meaningfully use feedback. With greater emphasis on fewer summative assessment tasks in many units, students do not always perceive a need to read or use feedback. Students tend to focus more on marks than feedback

in summative assessment tasks unless they understand how they might transfer feedback from one task in another. Design and structure assessment tasks to encourage or require students to read and use feedback. Some suggestions follow.

*Design a feedback / feed forward loop:* Structure tasks in stages which requires students to read feedback from the first stage and implement feedback advice in the later stage. Request students to highlight in the later stage the changes they have made. To facilitate marking and return in two stage tasks, provide written feedback on the first task with no or half marks, and only provide a grade on the second part with no comments (Gibbs & Simpson, 2004). Alternatively ask students to act on the feedback they received from a previous assessment task in the next assessment task. See the *Biology Report* assessment case study in Section 9 for an illustration of this idea.

*Encourage self assessment and reflection:* Require students to evaluate their assessment performance using criteria and standards either prior to the task or following the receipt of feedback. If the latter, only provide a mark when the student has evaluated their own work in light of the feedback.

*Anticipate tutors capabilities and students' response:* Students may not know what to do with the feedback they receive, especially at first year level. Similarly tutors may need practice in how to provide constructive feedback focussed on the strengths and weaknesses in the assessment responses.

*Guide students and tutors in how to use feedback:* Ask students to review the feedback from past assessment tasks and identify areas of strength and weakness. Have them explain how they used this feedback to improve their performance in the current task. Include such reflections in a personalised portfolio of the development of learning outcomes and graduate attributes. For tutors, pre-marking sessions can be held where they have an opportunity to practice framing feedback using the marking guide. See Case Study 2 in Section 9.

### Summary of key questions

#### In what ways have you:

- ✓ Explained the assessment task to students?
- ✓ Provided students with activities to understand the requirements of the marking scheme?
- ✓ Provided students with exemplars to illustrate standards?
- ✓ Developed strategies to facilitate timely and constructive feedback to students?
- ✓ Designed and scheduled assessment so students can use feedback?

## 9. Case studies and examples

The following case studies and examples provide further perspectives on assessing with criteria and standards. The first two case studies illustrate different ways in which criteria and standards-based assessment has been developed and implemented at UWS. The third case study (from the Queensland University of Technology) illustrates how criteria and standards have been used in an examination. Examples 15-21 illustrate a range of ways that criteria and standards can be constructed for different types of learning outcomes and assessment methods, across a range of disciplines.

While no one way of implementing criteria and standards-based assessment will suit every context, the case studies and examples provided in this section may help you to understand how criteria and standards-based assessment might be used in your own assessing context.

### Case Study 1 Using criteria and standards to assess a Marketing Case Study

Sara Denize, School of Business, UWS.

#### Context

*Brand and Product Management* is a 200 level unit taught in the Bachelor of Business program. A number of students enrolled in humanities courses and other business programs also take the unit as an elective. The task (a brand comparison) is designed to assess a number of unit learning outcomes (see Example 7). The task requires students to evaluate and compare the brand performance of two brands in a category (eg breakfast cereals such as *Special K* and *Corn Flakes*). Standards-based assessment was used to facilitate evaluation of assessment responses for a number of reasons:

- as a vehicle to clearly communicate expectations about assessment responses;
- to provide constructive feedback to students; and
- as a mechanism to standardise marking processes for a large number of staff.

#### Process

Criteria were developed to correspond to each of the learning outcomes and to clearly articulate the elements of the assessment task. Draft standards were prepared by the unit coordinator and shared with the teaching team. Feedback from the team was incorporated in the revised marking scheme. The final scheme was used to 'test mark' a similar assessment from a previous semester. This provided additional insights regarding the performance of the marking scheme. As specific marks were

allocated to each standard, careful attention was paid to determining each specific grade/standard combination. For example, some standards set the lowest level to one while others to zero to discourage poor student responses for the criterion.

### **Shared Understandings**

Staff participated in the development of the marking scheme. Prior to marking, staff cross-marked a number of student assessment responses. This process was crucial in developing a shared perspective on the marking scheme.

Students were provided with the marking scheme early in the semester. A number of tutorial sessions were specifically allocated to understanding and deconstructing the scheme and demonstrating how it aligned with the task and expected learning outcomes.

### **Evaluation and Reflection**

Most students had not been exposed to a standards-based marking scheme previously. It was for them quite a different experience. It is difficult to demonstrate that the scheme improved student learning outcomes. But the scheme did assist to standardise marking outcomes and effectively discriminate between student responses. As shown in the results illustrated in Example 10, the mean, range and standards deviation were all significantly improved. Interestingly, four students received 100%, a situation which had never before occurred. About the same number of students earned less than 20%. This suggests that the use of a criteria and standards marking scheme made assessors more confident in their judgments about poor and excellent quality. The scheme tended to minimise the subjectivity in grading students as there was a clear, agreed and transparent framework for assessing quality of student performance.

Student responses to a group assessment task which followed this task indicated that students had developed a more sophisticated understanding of the assessment requirements. In the subsequent group task, students used the marking scheme more effectively to construct their task submissions and as a result the overall grade on the second project was also higher than previous comparable tasks. Their results in the group task suggested significant improvement in achievement of learning outcomes, particularly in the application of theory to practical branding problems.

### Example 7 Learning outcomes and assessment instructions for Critical Brand Reflection case study

#### **Learning Outcomes for Brand and Product Management**

On successful completion of this unit students will be able to:

1. apply appropriate theoretical frameworks to evaluate the role of brand and product management in creating value for the organisation;
2. apply a range of business skills necessary to manage a portfolio of brands;
3. discuss the role of product portfolios in managing brands and products throughout their life-cycle;
4. explain the importance of new product development in sustaining future cash flow and shareholder value;
5. research and evaluate the importance of brand equity and of developing a distinct brand identity.

#### **Student instructions for Critical Brand Reflection Case Study**

This assessment task assesses learning outcomes: 1, 2, and 5.

You must identify a product category and select two brands from within that category. One of the brands should be a brand that you regard as successful (with strong brand equity) and the other brand should be less successful (with poorer brand equity).

You are required to:

1. Critically evaluate and compare the performance of each of your brands.
2. Describe and contrast how each of the brands you have selected has built brand equity (to do this you will need to evaluate brand equity for each brand and show how it was/is produced)
3. Formulate a strategy for the less successful brand to improve brand performance relative to the category leader.
  - Your analysis will be based mainly on information from secondary sources. You are also encouraged to conduct your own investigations of these brands (talking to friends, photographs, observations etc,) as well as using your own professional experiences and insights.
  - You must use appropriate theoretical frameworks and must draw on a wide range of theoretical materials to justify and support your recommendations (you are advised to review the marking guide as part of your preparation for this assessment).
  - Your report must not exceed six single-spaced, 12-point font, 2 cm margin pages. You must therefore be very careful in selecting relevant material to include in your case. Exhibits, figures, tables can be added and are not included in the page total (although they may be embedded within the document). A bibliography is required but is not included in the page total. You are advised that cramming in content is not an effective strategy – it is better to make critical judgments regarding the material to include.

Source: Sara Denize, UWS

### **Criteria and Standards for Critical Brand Reflection**

The following criteria and standards were developed using the 'grading sheet' tool in vUWS. After entering relevant information, the grading sheet automatically determines the presentation of the marking scheme. It permits marks to be allocated to each standard, but there is no capacity for markers to enter part-marks. This places an onus on markers to determine which standard the assessed work satisfies. If a student response for a particular criterion 'meets expectations' then they are awarded the whole mark allocated for that standard. Thus there are no 'hidden' standards.

Example 8 Criteria and standards for Critical Brand Reflection case study

CRITERIA	UNSATISFACTORY	NEEDS IMPROVEMENT	MEETS EXPECTATIONS	EXCEEDS EXPECTATIONS
<b>Identify and use relevant information</b>				
<b>Uses range of text based information to develop the case</b>	Uses only internet sources <input type="checkbox"/> 1	Uses a limited range of texts (i.e. textbook) and internet sources <input type="checkbox"/> 3	Uses a comprehensive range of texts from books and magazines and internet sources <input type="checkbox"/> 7	Uses an extensive range of texts from journals, books, magazines/newspapers and internet sources <input type="checkbox"/> 10
<b>Uses range of alternative information to develop the case</b>	Uses no alternative information sources <input type="checkbox"/> 0	Uses a limited range of alternative information (i.e. only observation etc) <input type="checkbox"/> 4	Uses a comprehensive range of alternative information (eg at least two different alternative sources) <input type="checkbox"/> 6	Uses an extensive range of alternative information, (eg observations, interviews, statistics, etc) <input type="checkbox"/> 8
<b>Uses of information that are relevant to the case</b>	Dumps information. Shows no evidence of critical evaluation of information relevant to case. <input type="checkbox"/> 1	Shows some evidence of critical consideration of the relevance of information, but content may be poorly integrated with case. <input type="checkbox"/> 3	Shows evidence of critical consideration of the relevance of information. Information may require better organisation. <input type="checkbox"/> 6	Critically chooses information and clearly integrates it to reflect the key issues in the case. <input type="checkbox"/> 10
<b>Apply relevant theory</b>				
<b>Applies relevant theory to the development and analysis of the case</b>	Does not use theoretical frameworks to analyse case questions. <input type="checkbox"/> 0	Uses theoretical frameworks in limited way but frameworks incorrectly applied in case analysis. <input type="checkbox"/> 3	Uses some theoretical frameworks, but these may be only superficially applied to the case. <input type="checkbox"/> 6	Uses theoretical frameworks clearly and consistently to analyse case. <input type="checkbox"/> 10
<b>Uses theory to justify conclusions and support recommendations</b>	No use of theoretical frameworks to justify conclusions. <input type="checkbox"/> 0	Uses theoretical frameworks in limited way but frameworks incorrectly applied to support recommendations. <input type="checkbox"/> 3	Uses some theoretical frameworks, however these frameworks may be only superficially applied to support conclusions. <input type="checkbox"/> 6	Uses theoretical frameworks clearly and consistently to justify conclusions and support recommendations. <input type="checkbox"/> 10

CRITERIA	UNSATISFACTORY	NEEDS IMPROVEMENT	MEETS EXPECTATIONS	EXCEEDS EXPECTATIONS
<b>Addresses assignment questions</b>				
<b>Demonstrates how brand management adds value by comparing brand performance</b>	Limited coverage of question and/or fails to link material presented back to questions. <input type="checkbox"/> 1	Satisfactory coverage but may fail to link material clearly to questions. <input type="checkbox"/> 4	Good coverage but may fail to completely integrate with questions. <input type="checkbox"/> 6	Exemplary coverage with all material fully integrated with questions. <input type="checkbox"/> 8
<b>Evaluates brand equity using appropriate theoretical frameworks</b>	Limited coverage of question and/or fails to link material presented back to questions. <input type="checkbox"/> 1	Satisfactory coverage but may fail to link material clearly to questions. <input type="checkbox"/> 4	Good coverage but may fail to completely integrate with questions. <input type="checkbox"/> 6	Exemplary coverage with all material fully integrated with questions. <input type="checkbox"/> 8
<b>Formulates strategy to correct brand equity problems</b>	Limited coverage of question and/or fails to link material presented back to questions. <input type="checkbox"/> 1	Satisfactory coverage but may fail to link material clearly to questions. <input type="checkbox"/> 4	Good coverage but may fail to completely integrate with questions. <input type="checkbox"/> 6	Exemplary coverage with all material fully integrated with questions. <input type="checkbox"/> 8
<b>Integrates responses to questions to produce a coherent case</b>	Poor overall integration between case questions demonstrating limited coherence and poor insight. <input type="checkbox"/> 1	Satisfactory overall integration between case questions demonstrating modest insight. <input type="checkbox"/> 4	Good overall integration between case questions demonstrating clear insight. <input type="checkbox"/> 6	Exemplary overall integration between case questions demonstrating outstanding insight. <input type="checkbox"/> 8
<b>Clarity of communication</b>				
<b>References and paraphrases correctly</b>	Material is paraphrased poorly and/or inadequate in-text citation and/or incomplete bibliography <input type="checkbox"/> 0	Satisfactory in-text citation and a bibliography provided but content is poorly paraphrased. <input type="checkbox"/> 3	Satisfactory in-text citation, paraphrasing and bibliography, with a few minor errors. <input type="checkbox"/> 5	Good in-text citation, paraphrasing and bibliography in all respects. <input type="checkbox"/> 8
<b>Uses clear prose style: sentence structure, grammar, spelling etc.</b>	Writing style is poor and difficult to follow, and/or marred by many grammatical and spelling errors. <input type="checkbox"/> 1	Writing style requires improvement but is largely coherent. There are only minor grammatical and/or spelling errors. <input type="checkbox"/> 3	Writing style is coherent with few grammatical and/or spelling errors. <input type="checkbox"/> 4	Writing is clear and error free demonstrating superior written communication skills. <input type="checkbox"/> 5
<b>Effectively structures and presents information using tables, charts, headings etc.</b>	Material is poorly structured with limited / poor use of structuring devices. <input type="checkbox"/> 1	Material is satisfactorily structured using mainly headings. <input type="checkbox"/> 3	Layout shows a clear structure and makes use of range of tables, diagrams and headings. <input type="checkbox"/> 4	Structure and layout is exemplary using a range of structuring devices. <input type="checkbox"/> 5

Source: Sara Denize, UWS

## Marking the Critical Brand Reflection Assessment Task

Markers entered marks electronically for each criterion directly onto the grading sheet (and thus into the electronic record system), producing the kind of statistical data which follows. vUWS allows for a global online report to be released about student performance in relation to different criteria and permits annotation of the results to provide further global feedback to students, as illustrated in the following examples.

### Example 9 Annotation to students explaining results of Critical Brand Reflection case study

'The average grade of nearly 62 percent is a good outcome. The median mark is very close to this suggesting the distribution (though spread) is not highly skewed. The standard deviation is nearly 17%. This is much higher than usual because the rubric has resulted in some very high marks as well as some very low marks. This means that some students will be well placed to get an HD overall. This is a good outcome - in previous semesters there have been very few Distinctions let alone HDs.'

Count: **290**

Average: **61.8%**

Median: **61.5%**

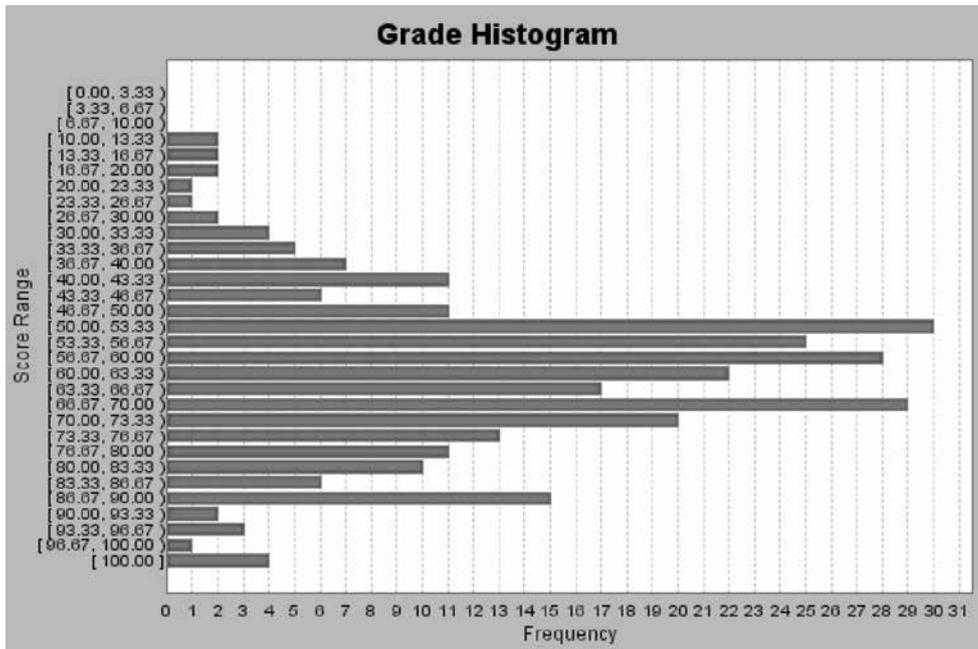
Maximum: **100.0%**

Minimum: **12.0%**

Standard Deviation: **16.66**

Source: Sara Denize, UWS

Example 10 Grade Histogram for Critical Brand Reflection case study, illustrating spread and range of marks



Source: Sara Denize, UWS

## Case Study 2

### Developing scientific report writing skills in a first year science unit

Pauline Ross, School of Science and Health, UWS

#### Context

The following case study illustrates how a supportive and developmental learning environment was created whereby students in a large (450 students) first year core science unit were guided towards achievement of the unit learning outcomes. The teaching team included the unit coordinator and 10 sessional staff. Sessional staff worked as tutors in workshops and practical laboratories. They were also responsible for assessing and providing feedback to students on the assessment activity. The unit coordinator assessed the final assessment activity.

This unit is a core unit for all science students, and critical to developing the foundational skills required for conducting and communicating scientific investigations. Time invested in developing these skills in first year means less time needs to be devoted to revisiting the basics of scientific experimentation and communication in subsequent years.

### Example 11 Learning outcomes, assessment activity and key learning activities for a first year Science unit

#### Unit Learning Outcomes

At the successful completion of this unit students will be able to:

- Analyse and integrate ideas from the scientific literature to create a story and a rationale for a scientific experiment or investigation;
- Formulate a scientific hypothesis for investigation;
- Design and conduct a scientific investigation or experiment to test the hypothesis;
- Use scientific conventions to produce a report that communicates data, trends and results arising from a scientific investigation or experiment.

#### Assessment activities

1. *Formative task*  
Based on the results of a scientific experiment or investigation submit a draft scientific report. (Weighting - 80%).
2. *Summative task*  
Incorporate feedback received on the draft report and resubmit as a final report. (Weighting - 20%).

#### Key Learning activities

Using an inquiry-based approach, a series of lectures, tutorials and workshops were held to explain and practise how to;

- Formulate a scientific hypothesis;
- Conduct a small scale take-home scientific investigation/experiment;
- Access scientific information/resources from the library and online sites;
- Communicate results from a scientific investigation/experiment using correct scientific conventions, and
- Distinguish between the performance standards in report writing.

Source: Pauline Ross, UWS

## Developing shared understandings

### Unit coordinator ↔ Tutors

Prior to the start of semester a 'working meeting' was held with the tutors to promote shared understanding of what the students were expected to achieve. This included discussions around what constituted the key elements of a conventional scientific report and resulted in a set of agreed assessment criteria and standards being developed with the input from the whole teaching team. Following this meeting a pilot marking workshop was held. Tutors were asked to apply the agreed criteria and standards to a selection of scientific reports that had been submitted by a previous cohort in the same unit. This process highlighted to tutors the value of using agreed criteria and standards to improve consistency and fairness in marking and also provided an opportunity to discuss how feedback was going to be provided to students based on submission of their draft reports.

### **Tutors ↔ Students**

Early in the semester one workshop focussed on introducing students to the detailed assessment criteria and standards that would be used to assess their achievement of the learning outcomes. The express aim of providing assessment criteria and standards to students prior to them commencing the assessment task was to help them see the links between completing the two assessment tasks and successfully achieving the unit learning outcomes. This workshop was followed by a number of tutorials/workshops where students were provided with opportunities to see and discuss model hypotheses, experiments and scientific reports. Subsequent tutorials provided opportunities for the students to apply the criteria and standards to a selection of the previous year's reports (with permission from the students concerned). This process provided the current students with a much clearer understanding of what they had to do to get a 'P' or 'D' when presenting the results of their scientific investigation/experiment. "For feedback to be effective students need to be clearly aware of what they are supposed to be learning and as they are unlikely to be perfect the first time, they need information as to where their deficiencies lie and misconceptions students may have need to be confronted and corrected" (Biggs & Tang, 2007, p. 102).

In week 7 the draft reports were submitted and assessed by the tutors. Tutors were asked to provide detailed written feedback on sentence structure, grammar and other features of data display, analysis and interpretation. Feedback was written directly on the students' reports, and a feedback sheet (based on the criteria and standards) was also used to summarise student performance. The draft reports and summary feedback sheet were returned to the students two weeks after submission. Weighting = 80%.

### **Tutors ↔ Unit coordinator**

Prior to the students receiving feedback on their draft reports, the unit coordinator met with the tutors to discuss marks and the quality of feedback offered. Cross-checking for consistency also occurred during this meeting and in some instances re-marking was required.

### **Unit coordinator ↔ Students**

In week 12-13 students submitted their improved and final report (along with the completed tutor's feedback sheet on the draft report). Marking of the final report was undertaken by the unit coordinator. Marking the final 450 final reports was a much less arduous process as the unit coordinator only needed to look at the areas marked for improvement to check if the students had acted on the feedback provided. Weighting = 20%.

### Evaluation and Reflection

Feedback received from students about this approach to assessment indicates that being able to see and critique model scientific reports and having the opportunity to receive feedback on their draft report meant that they generally felt more confident that they knew what they had to do to be successful in the unit.

While it took some time to tease out the initial set of assessment criteria and standards, it paid off in terms of student satisfaction with their learning experience in the unit. There was a noticeable improvement in the quality of scientific reports submitted in this and subsequent years. Tutors were able to provide better quality and more consistent feedback to students within a timeframe that allowed the students to use feedback to improve their outcomes.

In this model not all criteria are assigned with the same weighting. This is based on experience with earlier iterations where it was found that there needed to be greater discrimination between some criteria than there were for others due to a wider range in the quality of responses received.

While it is acknowledged that the criteria and standards developed for this unit are still very much a 'work in progress', the process of explaining, applying and exemplifying expected levels of performance has begun and regular review and refinement will be ongoing.

Example 12 Analytic criteria and standards for assessing first year draft scientific report assessment activity

Criteria	Weighting		
	0 Unsatisfactory	0.5 Satisfactory	1.0 Exceeds expectations
<b>Identifies and uses relevant information to construct a story, set the scene and sustain an argument for the scientific report.</b>	Introduction is limited /confused. Does not set the scene for the investigation. Comments on issues are isolated and/or not relevant to investigation. References are absent or at best limited.	There is some attempt to interpret and integrate ideas from the literature. Multiple references used. Sources may be limited and/or be incorrectly cited in the text.	Evidence of an analytical account of the literature that sets the scene and explains the context for the investigations. More than 3 key references are used. All references cited correctly in the text.
<b>Hypothesis is stated using 'if' / condition/'then' / there will be 'prediction'.</b>	Hypothesis is not provided or not expressed as a hypothesis.	Hypothesis is lacking one key component.	Hypothesis is correctly structured and clearly articulated. Includes all components.
<b>Designs and describes the investigation.</b>	Experimental design is poor or unclear. Procedures described may not follow logically and/or there are major omissions. Description is not in accepted scientific style, for example: no sentences, maybe just a list / dot points, if in sentences, may be written in the first person and/or present tense.	Evidence of 2 out of 3 of the following: <ul style="list-style-type: none"> <li>▪ a control</li> <li>▪ a treatment</li> <li>▪ replicates</li> </ul> Correct variable has been investigated. Minor problems with sentence construction. Some instances where past tense and third person not used.	A clear description with evidence of all three of the following: <ul style="list-style-type: none"> <li>▪ evidence of a control</li> <li>▪ evidence of treatment</li> <li>▪ evidence of replicates</li> </ul> Correct variable has been investigated. Sentences well structured and written in past tense and third person. Uses appropriate scientific terminology.
<b>Constructs and displays data in an appropriate and relevant manner.</b>	Limited and inadequate display of data, and/ or inclusion of ONLY raw data. Titles on tables and figures are too brief, in the wrong location or missing essential information. There may be no titles, or no captions. Drawing of figures may not follow explicit instructions.	Evidence that the data has been manipulated and there is some preliminary analysis. Data is displayed using titles on tables and figures.	Excellent analysis and presentation of data. <ul style="list-style-type: none"> <li>▪ Title is expressed in 10 words and is dated</li> <li>▪ Computer generated graphs and histograms.</li> <li>▪ Titles are underneath figures</li> <li>▪ Axes are labelled with units.</li> <li>▪ Numbering is sequential</li> <li>▪ Raw data is in appendix.</li> </ul>
<b>Analyses and communicates patterns and trends in the data.</b>	<ul style="list-style-type: none"> <li>▪ None/ or inadequate written description and/or communication about the data.</li> <li>▪ Attempts at describing the data may be limited to a lengthy title on a table or figure.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Satisfactory written description and communication about the meaning of the data.</li> <li>▪ Often the written description focuses on the numerical interpretation eg "Figure 1 shows..." or "Table 1 shows...", rather than communicating the scientific significance of the data</li> </ul>	<ul style="list-style-type: none"> <li>▪ Comprehensive written description and adequate-to-excellent communication of the meaning of the data.</li> <li>▪ The written description is focussed on the scientific trends in the data and referral to figures and tables is done in brackets at the end of the sentence/paragraph.</li> </ul>

Criteria	Weighting			
	0.5 unsatisfactory	1.0 Satisfactory	1.5 credit	2.0 Distinction
<p>Interprets data and draws valid conclusions.</p> <p>Analyses and evaluates ideas from the literature and integrates and links this to the substance of the investigation.</p>	<p>Evidence of at least 1 out of 4 of the following</p> <ol style="list-style-type: none"> <li>Limited or no summary of the results of the investigation.</li> <li>No reference to original hypothesis under investigation.</li> <li>Analysis and evaluation of the literature is absent.</li> <li>References are absent or limited.</li> </ol>	<p>Evidence of at least 2 out of 4 of the following</p> <ol style="list-style-type: none"> <li>Results of investigation are summarised.</li> <li>Hypothesis is supported or rejected based on these results.</li> <li>Literature has been interpreted, evaluated and their experimental investigation has been put into context of the literature.</li> <li>References have been used with only minor errors evident.</li> </ol>	<p>Evidence of 3 out of 4 of the following</p> <ol style="list-style-type: none"> <li>Results of investigation are summarised.</li> <li>Hypothesis is supported or rejected based on these results.</li> <li>Literature has been interpreted, evaluated and their experimental investigation has been put into context of the literature.</li> <li>References have been used and there are no errors.</li> </ol>	<p>Evidence of 4 out of 4 of the following</p> <ol style="list-style-type: none"> <li>Results of investigation are summarised.</li> <li>Hypothesis is supported or rejected based on these results.</li> <li>Literature has been interpreted, evaluated and their experimental investigation has been put into context of the literature.</li> <li>References have been used and there are no errors.</li> </ol>
	<b>Weighting</b>			
	<b>0.5 Unsatisfactory</b>			
<p><b>Communicates clearly using scientific conventions</b></p>	<p>Ideas are not clearly expressed and/or there is incomplete sentence structure and unclear grammar. More attention is required to ensure past tense, third person, accurate spelling and correct formatting has been used in the communication of the investigation.</p>	<p>Ideas are clearly expressed with correct sentence structure and clear grammar. Attention has been paid to using the past tense, third person. Accurate spelling and formatting has been used in the communication of the investigation.</p>	<b>1.0 Satisfactory</b>	
<p><b>References</b> Uses Harvard referencing system. Structures report appropriately...</p>	<p>Inadequate/ incorrect referencing. Some references which have been cited in the text may be missing from the references, and/or some references in the reference list have not been cited in the text.</p>	<p>All aspects of referencing are correctly done.</p>		

Source: Pauline Ross, UWS

The example below illustrates how the analytic criteria and standards shown in example 12 have been adapted to create a five level set of holistic standards.

**Example 13 Holistic 5 level standards for a scientific report writing assessment task in a first year Science unit**

**High Distinction**

Outstanding quality experimental design with the addition of originality and/or creativity. Outstanding description of the background, communication and analysis of results and main conclusions of the investigation. Results presented in well-formatted and correctly labelled tables, graphs, figures etc. Analysis and synthesis of the main ideas from the literature are integrated and strongly linked to this investigation. Future investigations are suggested based on the investigation and synthesis of ideas from the literature. Several key references are used, cited in the text and formatted without error in the references.

**Distinction**

Superior quality experimental design, description, communication and analysis of the investigation. Superior quality description of the background and main conclusions of the investigation. Results presented in clear and labelled tables, graphs, figures etc. Analysis and synthesis of the main ideas from the literature which is linked and made relevant for this investigation. Superior level of analysis and interpretation of results, evaluated against scientific literature. Most aspects and formatting of references are correct.

**Credit**

Good quality experimental design, with controls and replicates. Good quality description of the background and main conclusions of the investigation. Raw data has been manipulated and clearly displayed in tables, graphs, and figures, and is in the appendix. Titles for tables and figures may have minor parts missing. Literature analysed and evaluated, may still lack clear linkage with the investigation. Most aspects of referencing are correct, but some references cited in the text may be missing or incorrectly formatted in the reference list. Written in the third person and past tense.

**Pass**

Satisfactory description, experimental design, communication and analysis of the investigation and results. All components of the criteria are present in the report, but there may be incorrect structure in some parts. For example the methods may be a series of dot points instead of a coherent description in paragraph form of what was done. Similarly in results, there may be an attempt to manipulate and analyse the data, but the best way of presenting the data has not been used eg pie graph versus a histogram. Literature has been used, but often this will include textbook instead of journal articles on the specific question under investigation. Mostly written in the third person past tense, but some minor omissions may have occurred. Most aspects of referencing are correct, however some references cited in the text may be missing or incorrectly formatted in the reference list.

**Fail**

Poor experimental design and description of the investigation. Limited analysis and discussion of results. Ideas are not clearly expressed and limited attention has been given to writing in the past tense third person. Inadequate and/or incorrect referencing.

Source: Pauline Ross, UWS

### Case Study 3

#### Criterion referenced exam questions

Megan Hargreaves, Queensland University of Technology

*Year Level* - Third Year *Broad discipline area* - Environmental Microbiology

*This case study was originally sourced from the 'Enhancing Assessment in the Biological Sciences' web site [www.bioassess.edu.au](http://www.bioassess.edu.au), a project supported by the Carrick Institute for Learning and Teaching in Higher Education.*

*Reprinted with permission from the author Megan Hargreaves  
Queensland University of Technology: [m.hargreaves@qut.edu.au](mailto:m.hargreaves@qut.edu.au)*

#### Brief description of the initiative

In accordance with university policy regarding the introduction of criterion referenced assessment in all units, I have gradually introduced a simple “tick-box” criteria marking system for grading assignments and oral presentations.

In 2006, my team and I trialed the use of assessment criteria for the marking of final theory exam questions, in the third year Science unit, Environmental Microbiology.

The nature of the exam is such that this was relatively straightforward. The exam consists of three sections, each containing three short essay questions, of which students are required to select two to attempt an answer, six short essays in total. Each section is set and marked by a different lecturer, to parallel the three main topic areas in the unit.

Importantly, the questions are set in such a way as to explore the students' ability to apply and extend their knowledge to current issues. All questions have been set in a format that places the student in the position of a consulting scientist, requiring them to solve a “real-world” problem and justify their stance/solution. The criteria reflect that expectation.

The criteria were developed by me in the first instance, as unit coordinator, and then negotiated with the other two examiners. Since the criteria were used for marking of all six essays, they were necessarily generic in nature, but were still able to cover the scientific requirements of the examiners. An unspecified criterion was provided for use by the examiners, in case they wished to include a more specific requirement, but none took up this option.

**Example 14 Criteria and standards for exam questions in a third year  
Environmental Microbiology unit**

**Criteria as follows:**

1. Scientific information (factual material) is correct
2. Scientific information is of sufficient depth to answer question
3. Specific organisms are named in correct context
4. Micro-organism names are correctly spelled and underlined
5. Analysis/argument/opinion developed as per the question
6. Opinion/argument supported with valid evidence
7. Evidence of research beyond material provided in lectures
8. English, grammar, spelling correct

**Marks were allocated for each criterion on the following basis:**

1. Criterion not addressed at all
2. Criterion barely mentioned or met at all, alluded to in passing
3. Criterion addressed in a superficial manner, or at a very low level of compliance
4. Passing grade, criterion addressed adequately
5. Criterion addressed well, higher than average level
6. Criterion addressed excellently well, highest possible level

*Source: Megan Hargreaves, QUT*

Note that our university [QUT] policy states that all criteria should be of equal weighting, so there are some factors that appear in two or more criteria, to correctly reflect their importance.

Students were advised of the criteria early in the semester, so that they could prepare accordingly. The exam questions were also provided for formative preparation.

The value of this practice is difficult to rate in student terms. Students rarely request feedback on their final examination paper, but on the one occasion that this happened, it was very helpful to be able to consult the criterion sheets for each section of the exam, and provide comments regarding the strengths and deficiencies of their paper. In the past, the marker just noted a numerical rating (out of 10, or whatever), and feedback was quite difficult.

The value for lecturers was that this process is quicker and more reliable than conventional marking, and also gave them a secure sense of consistency between students. For me, as unit coordinator, I could be assured that all of my markers were placing value on the same criteria. In the past, one of the markers had been very “editorial”, giving low grades overall, if the spelling and grammar were poor, regardless of the scientific value of the answers. This tendency has been averted by use of the criteria.

## Further examples of standards

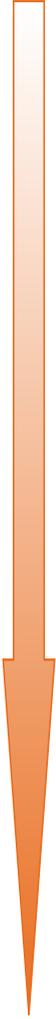
Example 15 Analytic standards for mathematical problem solving

CRITERIA	Understanding	Strategies, Reasoning, Procedures	Communication
<b>LEVEL</b>  <b>Novice</b>	<p>There is no solution, or the solution has no relationship to the task.</p> <p>Inappropriate concepts are applied and/or procedures are used.</p> <p>The solution addresses none of the mathematical components presented in the task.</p>	<p>No evidence of a strategy or procedure, or uses a strategy that does not help solve the problem.</p> <p>No evidence of mathematical reasoning.</p> <p>There were so many errors in mathematical procedures that the problem could not be resolved.</p>	<p>There is no explanation of the solution, the explanation cannot be understood or it is unrelated to the problem.</p> <p>There is no use or inappropriate use of mathematical representations (eg figures, diagrams, graphs, tables, etc).</p> <p>There is no use, or mostly inappropriate use, of mathematical terminology and notation.</p>
<b>Apprentice</b>	<p>The solution is not complete, indicating that parts of the problem are not understood.</p> <p>The solution addresses some, but not all, of the mathematical components presented in the task.</p>	<p>Uses a strategy that is partially useful, leading some way toward a solution, but not to a full solution of the problem.</p> <p>Some evidence of mathematical reasoning.</p> <p>Could not completely carry out mathematical procedures.</p> <p>Some parts may be correct, but a correct answer is not achieved.</p>	<p>There is an incomplete explanation, which may not be clearly presented.</p> <p>There is some use of appropriate mathematical representation.</p> <p>There is some use of mathematical terminology and notation appropriate of the problem.</p>
<b>Practitioner</b>	<p>The solution shows that the student has a broad understanding of the problem and the major concepts necessary for its solution.</p> <p>The solution addresses all of the components presented in the task.</p>	<p>Uses a strategy that leads to a solution of the problem.</p> <p>Uses effective mathematical reasoning.</p> <p>Mathematical procedures used.</p> <p>All parts are correct and a correct answer is achieved.</p>	<p>There is a clear explanation.</p> <p>There is appropriate use of accurate mathematical representation.</p> <p>There is effective use of mathematical terminology and notation.</p>
<b>Expert</b>	<p>The solution shows a deep understanding of the problem including the ability to identify the appropriate mathematical concepts and the information necessary for its solution.</p> <p>The solution completely addresses all mathematical components presented in the task.</p> <p>The solution puts to use the underlying mathematical concepts upon which the task is designed.</p>	<p>Uses a very efficient and sophisticated strategy leading directly to a solution.</p> <p>Employs refined and complex reasoning</p> <p>Applies procedures accurately to correctly solve the problem and verify the results.</p> <p>Verifies solution and/or evaluates the reasonableness of the solution.</p> <p>Makes mathematically relevant observations and/or connections.</p>	<p>There is a clear, effective explanation detailing how the problem is solved. All of the steps are included so that the reader does not need to infer how and why decisions were made.</p> <p>Mathematical representation is actively used as a means of communicating ideas related to the solution of the problem.</p> <p>There is precise and appropriate use of mathematical terminology and notation.</p>

Source: Hobbs (2005).

**Example 16 Holistic standards arranged on a continuum**

Presenting multi level standards in a continuum may overcome any difficulties in definitively distinguishing levels of performance. The following example of a holistic marking scheme illustrates a continuum of standards for analytical and critical evaluation skills. In this generic example from North America, the criteria are embedded.

<b>Analytical and Critical Evaluation skills</b>	
<p><b>Low level (Fail)</b></p> 	<ul style="list-style-type: none"> <li>• Student is not analysing issues clearly, not formulating information clearly, not accurately distinguishing the relevant from the irrelevant.</li> <li>• Student is not identifying key questionable assumptions or relevant competing points-of-view.</li> <li>• The student's work does not display discernible reasoning and problem-solving skills.</li> <li>• Though critical thinking terms and distinctions are sometimes used effectively, sometimes they are used quite ineffectively.</li> <li>• The student only occasionally analyses issues clearly and precisely; formulates information clearly; recognises key questionable assumptions; identifies relevant competing points-of-view and reasons carefully.</li> <li>• Only occasionally recognises important implications and consequences.</li> <li>• On the whole, student's work shows only modest, weak and inconsistent reasoning and problem-solving skills.</li> <li>• Student's work represents demonstrable achievement in grasping what critical thinking is, along with the clear demonstration of a range of specific critical thinking skills.</li> <li>• On the whole, critical thinking terms and distinctions are used effectively. The work demonstrates a mind beginning to take charge of its own ideas, assumptions, inferences, and intellectual processes.</li> <li>• The student often analyses issues clearly and precisely, recognises key questionable assumptions.</li> <li>• Usually clarifies key concepts effectively.</li> <li>• Frequently identifies relevant competing points-of-view and displays noticeable sensitivity to important implications and consequences.</li> <li>• Student's work demonstrates real achievement in grasping what critical thinking is, along with the clear development of a range of specific critical thinking skills or abilities.</li> </ul>
<p><b>High level (HD)</b></p>	<ul style="list-style-type: none"> <li>• Student's work displays excellent reasoning and problem-solving skills.</li> <li>• Student's work is consistently at a high level of intellectual excellence.</li> </ul>

Source: Griffith Graduate Program (2006)

### Example 17 Holistic multiple level standards for a formal exam in a third year Marketing unit, using the SOLO framework to distinguish levels of performance

The following extract from a marking scheme in the unit Brand & Product Management bases its standards on the SOLO framework to describe holistic standards for formal exam responses. This document was intended to be used by assessors who discussed among themselves what was meant by various descriptors. It was also provided to students prior to the exam with exemplars to illustrate the different levels of expected performance and to develop an understanding of the terms used in the marking scheme.

*The verbs distinguishing levels of performance are italicised.*

#### PASS

The answer has most of the following characteristics:

- correctly *describes* relevant facts from the case, but ...
- may or may not *identify* the relevant theoretical framework
- may or may not *describe* the relevant parts of the theory
- does not or incorrectly *applies* the theory to the object of the question
- does not or incorrectly *relates* the theory to the case evidence.

Answers at this level will make simple and obvious connections, but their significance may not be fully articulated. This type of response only meets one part of the task. Sometimes, this type of response deals with terminology but doesn't develop further.

#### CREDIT

The answer has most of the following characteristics:

- correctly and proficiently *describes* relevant facts from the case, and
- correctly *identifies* the relevant theoretical framework
- correctly *describes* the relevant parts of the theory
- may or may not *apply* the theory to the object of the question
- may or may not *relate* the theory to the case evidence, but uses case evidence well to support their argument.

Responses at this level outline the influences of a number of factors, but may not bring together and balance their influences. Straight-forward connections between theory and evidence sets may be made, but the meta-connections between them are missed, as is their significance for the whole.

*(continued on next page)*

#### DISTINCTION

The answer has most of the following characteristics:

- correctly and proficiently *describes* relevant facts from the case, and
- correctly *identifies* the relevant theoretical framework
- correctly *describes* the relevant parts of the theory
- correctly *applies* the theory to the object of the question
- correctly *relates* the theory to the case evidence, and uses case evidence well to support their argument.

A response at this level describes the case evidence and the theoretical frameworks and demonstrates good appreciation of how they are integrated. The answer demonstrates an appreciation of the significance of the parts of the question in relation to the whole. The overall answer has a coherent and appropriate structure where the parts of the answer and the connections between them are clearly demonstrated.

#### HIGH DISTINCTION

A response at this level has all the characteristics of the previous level (Distinction) and in addition demonstrates further insight, *extending* concepts and theoretical ideas into new but clearly related areas – across a number of areas. The response *demonstrates connections* not only within the given subject area of the question, but also beyond it. Answers at this level *generalise* and *transfer* the principles and ideas underlying the specific instance to a number of other contexts.

Source: Sara Denize, UWS

**Example 18** Extract from analytic five level standards for elements of recording technique in Creation of a Sound Work for Live Performance, fourth year Digital Music unit.

**Learning Outcomes – On successful completion of the unit, students will be able to demonstrate:**

- Ability to understand and productively explore the creative potentials of sound studios.
- Extended understanding of the principles of performance with electronic and digital instruments.
- Ability to design, plan, realise and assess substantial creative projects.
- Extended skills in the creative use of hard disk recording environments.
- Ability to use software patcher environments for software instrument design and interfacing with sensor technologies.
- An understanding of mapping sensing data to software instruments.
- A conceptual understanding of interactive or responsive sound works.
- Ability to technically analyse electroacoustic music and sound works.

*Qualifiers indicating shifts in quality of performance have been italicised.*

Fail	Novice	Apprentice	Competent	Professional
<b>Criteria: Dynamics</b>				
Limited or excessive dynamic range.	Fair representation of instrument dynamics. Some elements <i>obscured</i> or musically <i>inappropriate</i> variation in dynamics.	Good balance between audibility of elements, loudness, and musically <i>appropriate</i> dynamic range. Dynamics <i>used to support</i> musical structure.	<i>Thorough</i> approach to management of musical dynamics including, where appropriate, <i>reshaping</i> of instrument timbres through dynamic modification.	<i>Outstanding and engaging</i> use of dynamic. Dynamics <i>add</i> to musical content and <i>direct</i> listener's perceptual focus throughout composition.
<b>Criteria: Balance</b>				
<i>Unintelligible</i> sound material.	Some elements <i>obscured</i> or <i>inaudible</i> .	Musically <i>appropriate</i> balance of all elements.	Performance enhanced by <i>effective</i> level of balance throughout.	<i>Superior</i> musical balance enhanced by <i>creative</i> and <i>subtle</i> dynamic automation.

Source: Ian Stevenson, UWS

### Example 19 Extract from holistic multi level standards for MyStuff Journal, Industrial Design

The standards in the following UWS example are developed from comments made about different levels of performance in similar assessment tasks. Note the accessible and positive style written directly as if addressing the student.

This assessment task requires students to undertake a personal audit of their possessions and their energy, water use, resource consumption and waste. Students are required to present the data they collect, communicating their impacts in a novel way.

#### Learning outcomes

On successful completion of the unit, students will be able to:

1. Explain the ecology of post-industrial systems of production and the lifestyles these systems support.
2. Apply the methodology for systems design – fitting products to each other and to existing forms of social organisation (social ecology).
3. Design new products according to the conditions of minimal environmental cost, maximum product longevity and maintenance or replacement by a new service or product.

**CRITERIA:** Creativity of data collection methods and communication techniques (How engaging the submission is, how well it holds the audience's interest, how clever you are at coming up with counting and communication methods)

#### FAIL

You handed in raw data and summaries of your findings presented as a report. It is laborious to read because it is very procedural.

#### PASS

Your methods for counting work ok, but you didn't convey a sense of personal value creatively. You started counting everything without working out how you would communicate your findings so ran into trouble when extracting and communicating significant aspects. You used a complex series of tables to summarise the data but these were still not getting the message across in an interesting way.

#### CREDIT

You have a nice system of icons which cleverly convey frequency of use, but the overall format is not very engaging. It still reads like a well illustrated report.

#### DISTINCTION

You manage to convert your data into meaningful charts that quickly convey the environmental impact of your penchant for the latest fashion. You have included a process tree consisting of an engaging collage where it is easy to see how impacting your desire for fast, convenient travel is.

#### HIGH DISTINCTION

Who would have thought to present it like this? I get a real sense of how certain personal preferences result in environmental impact without having to refer often to your data. I really enjoyed opening up the submission and exploring the various themes. It was like opening up a birthday present!

Source: Tara Andrews, UWS

### Examples 20 & 21

#### Analytic Standards for first year Law assessment activity

#### Group research task (10%) and individual letter of advice (10%)

Margaret Hyland and Susan Armstrong, School of Law UWS

The following examples illustrate how a first year Law unit assesses a range of research, teamwork and writing skills by using a *group research exercise* and an *individual letter of advice* activity.

To enhance authenticity for beginning lawyers, students formed teams to act as a 'law firm' and write a fictitious client a letter providing legal advice about her problem. As starting first year students, they had no familiarity with any area of law. To provide advice, the team had to identify, locate and evaluate and correctly cite primary and secondary sources of law using a wide range of electronic legal research tools. Students presented this information in a group response, explaining their research 'pathway' and the terms and databases they used to find the sources. They then had to identify the relevant parts of the sources to write individual letters of client advice in plain English.

The two tasks assess student achievement of the following unit learning outcomes.

On successful completion of this assessment task students will be able to:

7. Identify and locate Australian legal and non-legal information from a range of primary and secondary sources.
8. Evaluate the quality, currency and relevance of legal and non-legal information from a range of primary and secondary sources.
9. Incorporate and accurately reference (using the *Australian Guide to Legal Citation* style) legal and non-legal information from a range of primary and secondary sources.
10. Write effectively using the principles of plain legal English.
11. Contribute effectively and equitably to team tasks.

*Note:*

- The above learning outcomes were extracted from the Introduction to Law unit outline, 2008
- The template used to form the following marking guides is based on a model developed by Sara Denize, School of Marketing UWS.

## Example 20 Law Group Research task 10%

Student Name		Student ID #	
Overall mark	/90	Submitted on time	Yes
Criteria	Unsatisfactory	Needs Improvement	Meets expectations
<b>Locate relevant sources</b>			
<b>Identify secondary sources</b>	Identifies less than three of only limited secondary sources requested (dictionary, text, encyclopaedia, article, report). <input type="checkbox"/> 2	Identifies up to three of only selected secondary sources requested (dictionary, text, encyclopaedia, article, report). <input type="checkbox"/> 5	Identifies three each of all secondary sources requested (dictionary, text, encyclopaedia, article, report). Breadth demonstrates excellent searching skills. <input type="checkbox"/> 8 <input type="checkbox"/> 10
<b>Identify cases</b>	Identifies less than three cases. Cases are not necessarily relevant. <input type="checkbox"/> 2	Identifies less than three cases, some of which are not relevant. <input type="checkbox"/> 5	Identifies three cases, which are directly on point, relevant jurisdiction and current. <input type="checkbox"/> 8 <input type="checkbox"/> 10
<b>Identify legislation</b>	Identifies less than three sections in legislation. Sections/legislation not relevant. Not include amendments, 2 <sup>nd</sup> RS, bills. <input type="checkbox"/> 2	Identifies less than three sections in legislation, not all of which are relevant. Reference to amendments, 2 <sup>nd</sup> RS, bills inconsistent. <input type="checkbox"/> 5	Identifies three current, relevant sections in legislation, correct jurisdiction. Reference to amendments, 2 <sup>nd</sup> RS, bills, demonstrates superior and thorough searching skills. <input type="checkbox"/> 8 <input type="checkbox"/> 10
<b>Explain research pathway</b>	Inadequate range of research tools and expressions. Little or no refinement or reflection – just re-telling what they did. <input type="checkbox"/> 5	Limited range of research tools, some evidence of appropriate search terms. Some refinement of searches demonstrating but limited awareness of strengths and limitations of search strategies. <input type="checkbox"/> 10	Comprehensive use of all relevant research tools with excellent development of relevant search terms and expressions. Effective refinement of search terms and tools demonstrating particular insight of the effectiveness of the overall research method. <input type="checkbox"/> 8 <input type="checkbox"/> 15 <input type="checkbox"/> 20

<b>Evaluate sources</b>	
<b>Evaluate quality and relevance of sources</b>	<p>Fails to or inadequately explains how sources are relevant and/or of good quality. <input type="checkbox"/> 3</p> <p>Limited explanation of quality and relevance or only addresses one of these. <input type="checkbox"/> 7</p> <p>Effectively Identifies how sources are relevant and of good quality for the problem. <input type="checkbox"/> 10</p> <p>Comprehensively and perceptively explains the relevance and quality of sources in relation to the problem. <input type="checkbox"/> 15</p>
<b>Evaluate currency of sources</b>	<p>Poor or absent evaluation of whether secondary sources are still current; whether cases are still current by referring to case annotators; whether sections have been or are being amended, legislation still in force. <input type="checkbox"/> 3</p> <p>Limited evaluation of whether secondary sources are still current; whether cases are still current by referring to case annotators; whether sections have been or are being amended, legislation still in force. Or only addresses some of these. <input type="checkbox"/> 7</p> <p>Effectively evaluates whether secondary sources are still current; whether cases are still current by referring to case annotators; whether sections have been or are being amended, legislation still in force. <input type="checkbox"/> 10</p> <p>Comprehensively and persuasively evaluates whether secondary sources are still current; whether cases are still current by referring to case annotators; whether sections have been or are being amended, legislation still in force. <input type="checkbox"/> 15</p>
<b>Cite sources accurately</b>	
<b>Accurately reference using the Australian Guide to Legal Citation style</b>	<p>Poor, inconsistent and inaccurate citation according to AGLC. <input type="checkbox"/> 2</p> <p>Limited or inconsistent citation according to AGLC. Frequent errors. <input type="checkbox"/> 5</p> <p>Accurately cites according to AGLC, may be some minor lapses or errors. <input type="checkbox"/> 8</p> <p>Comprehensively, accurately and consistently cites according to AGLC. <input type="checkbox"/> 10</p>
<b>Comments</b>	

Source: Margaret Hyland & Sue Armstrong, UWS

## Example 21 Law Individual (letter of advice) task 10%

Student Name		Student ID	
Overall Mark	/100	Submitted on time	Yes
Criteria	Unsatisfactory	Needs Improvement	Meets expectations
Provide legal advice	Exceeds Expectations	Meets expectations	Exceeds Expectations
<b>Identifies legal issues and summarises law</b>	Inadequate restatement of facts, or identification of legal issues and/or summary of law failing to refer to relevant cases and statutes or secondary sources, or fails to address elements of this.	Limited restatement of facts, or identification of legal issues and/or summary of law referring to cases and statutes, and secondary sources which may not be relevant.	Clearly and logically restates facts, identifies legal issues and summarises law referring to relevant cases and statutes, and where appropriate, secondary sources.
	4	10	15
<b>Provides legal advice to client</b>	Legal advice to client inadequate or largely irrelevant.	Provides limited and sometimes irrelevant legal advice to client in light of sources referred to.	Comprehensively and accurately provides legal advice to client in light of sources referred to.
	4	10	20
<b>Use appropriate legal style and presentation</b>			
<b>Uses appropriate layout: address, reference, headings, paragraphing</b>	Poor presentation in relation to most elements: address, reference, headings, paragraphing.	Presentation inconsistent or ineffective in relation to some elements: address, reference, headings, paragraphing.	Effectively presents letter, including address, reference, headings, paragraphing.
	3	7	10
<b>Writes in plain legal language</b>	Writing style generally vague, ambiguous, inappropriate, verbose and/or uses legal jargon.	Writing style inconsistently clear, precise or concise or fails to avoid legal jargon.	Writing style consistently clear, precise and concise and avoids legal jargon.
	3	7	15
<b>Writes accurately and within word limit</b>	Frequent spelling, punctuation and grammar errors, and fails to observe word limit.	Frequent spelling, punctuation or grammar errors, or fails to observe word limit.	Letter flawless in relation to spelling, punctuation and grammar and word limit.
	3	7	15
<b>Cite sources accurately</b>			
<b>Includes pinpoint references using the <i>Australian Guide to Legal Citation style</i></b>	Poor, inconsistent and inaccurate citation according to AGLC.	Limited or inconsistent citation according to AGLC. Frequent errors.	Accurately cites according to AGLC, may be some minor lapses or errors.
	3	7	10
<b>Comments</b>			

Source: Margaret Hyland &amp; Susan Armstrong, UWS

## 10. Summary questions

### **Do your unit learning outcomes:**

- ✓ State in the future tense what students will be able to do on successful completion of the unit?
- ✓ Identify essential content, intellectual skills and professional competencies to be learned?
- ✓ Use concrete, active verbs to describe observable and measurable behaviours?
- ✓ Where appropriate, reflect graduate, disciplinary or professional attributes?
- ✓ Use clear, unambiguous language students can understand?
- ✓ Number no more than about six per unit?

### **Do the criteria for your assessment task:**

- ✓ Clearly identify the important characteristics that students' work will demonstrate to show you that they have achieved the learning outcome/s?
- ✓ Use concise language and avoid unnecessary detail?
- ✓ Specify only one behaviour per criterion?
- ✓ Avoid describing standards of performance?
- ✓ Represent an achievable task for students?
- ✓ Represent an achievable workload for staff?

### **In selecting and designing assessment tasks for your unit, have you:**

- ✓ Chosen assessment methods that validly assess achievement of unit learning outcomes?
- ✓ Chosen assessment methods that are effective for the field of education?
- ✓ Ensured that all the learning outcomes have been assessed?
- ✓ Exposed students to more than one type of assessment experience/method?
- ✓ Designed tasks that are challenging, authentic and holistic?

**When developing and describing assessment standards, have you:**

- ✓ Involved colleagues in setting standards?
- ✓ Identified an appropriate threshold level of performance for the task?
- ✓ Selected the appropriate number of levels to discriminate performance in the task?
- ✓ Described performance in clear, positive language?
- ✓ Benchmarked your standards against comparable disciplinary and/or professional standards, within the University and beyond?

**Does your marking scheme:**

- ✓ Use positive labels to describe levels of performance?
- ✓ Allocate marks holistically or analytically, according to the standards described?
- ✓ Provide sufficient detail to guide students, assist assessors and facilitate feedback?
- ✓ Communicate criteria and standards simply, concisely and clearly?

**To promote understanding and consistent application of the marking scheme, have you:**

- ✓ Developed processes to ensure assessors have a shared understanding of the standards described prior to marking?
- ✓ Moderated the application of standards to determine if assessors have graded consistently according to the standards, and that there is consistency between the judgments of assessors?

**In what ways have you:**

- ✓ Explained the assessment task to students?
- ✓ Provided students with activities to understand the requirements of the marking scheme?
- ✓ Provided students with exemplars to illustrate standards?
- ✓ Developed strategies to facilitate timely and constructive feedback to students?
- ✓ Designed and scheduled assessment so students can use feedback?

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University of Western Sydney  
Locked Bag 1797  
Penrith NSW 2751 Australia  
uws.edu.au

