Enhancing Student Learning through Assessment and Feedback

Assessment handbook

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Bibliography

This is a revised edition of the Institutes Assessment Tool Kit prepared in 2005. The preparation of this resource is aimed at providing academics with reference material that will both enhance student learning through a positive experience of assessment while providing the appropriate material for scholarly engagement. The development of this handbook follows on from the aims set down in the Institute's Learning Teaching and Assessment Strategy. The working group consisted of the following members:

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Introduction

"Students can, with difficulty, escape from the effects of poor teaching, they cannot (by definition if they want to graduate) escape the effects of poor assessment". (Boud 1995:35)

'assessment frames learning, creates learning activity and orients all aspects of learning behaviour' (Gibbs, 2006)

'Intended learning outcomes should be contained in the assessment tasks'

What is Assessment?

The UK Higher Education Academy defines assessment as 'processes such as examinations or coursework through which a learner's achievements are measured'. We tend to use the general term *assessment* to refer to all those activities undertaken by teachers, and by their students in assessing themselves, that provide information to be used as feedback to modify teaching and learning activities. Such assessment becomes *formative assessment* when the evidence is actually used to adapt the teaching to meet student needs (Black, P. & Wiliam, D. 1998)

What is the effect of assessment *for* learning?

It is generally acknowledged that ' a student's approach to learning and the quality of learning achieved will be influenced by the way in which this learning is to be assessed' (Gibbs, 1999, Entwistle and Ramsden, 1983). Cross (1996) cites three conditions for learner success in student learning and these are:

<blockquote>
i)   high expectations,
ii)   student participation and involvement, and
iii)   assessment and feedback.
</blockquote>

How can assessment improve learning?

Research (Black, & William, 1999) indicates that improving learning through assessment depends on five key factors

➢ the active involvement of students in their own learning

➢ the provision of effective feedback to students

➢ adjusting teaching to take account of the results of assessment

➢ a recognition of the profound influence assessment has on the motivation and self-esteem of students, both of which are crucial influences on learning

➢ the need for students to be able to assess themselves and understand how to improve.

'In short, the effect of assessment *for learning*, as it plays out in the classroom, is that students keep learning and remain confident that they can continue to learn at productive levels if they keep trying to learn. In other words, students don't give up in frustration or hopelessness.'

(Stiggins, R. J. 2002)

What is the purpose of this handbook?

The purpose of this handbook is to help you ensure that your assessment and feedback practices will add significant value to your students' learning in DIT. However, while perhaps the most important principle of assessment is that it should enhance student learning, this guide is not just about the student point of view. Recognising that the context of Higher Education is changing we now need to consider the assessment of learning in a more adaptive way.

This resource will introduce you to the purposes of assessment, define the characteristics of good assessment, differentiate between the different methods of assessment used in third level education, and help you to think about how assessment can benefit your courses. It will help you to review and revive your approaches to assessment, thus enabling you to construct a more fertile learning environment and a more rewarding learning experience for both you and your students. The role of feedback in the learning process is considered and how this might be included to enhance student learning.

Why do we assess?

If questioned lecturers may say that we assess for the following reasons:
• To determine that the intended learning outcomes of a programme module are being achieved
• To provide feedback to students on their learning, enabling them to improve and develop
• To motivate students to undertake appropriate work
• To support and guide learning
• To describe student attainment, informing decisions on progression and awards
• To demonstrate that appropriate standards are being maintained
• To evaluate the effectiveness of teaching

Brown, S and Knight, P (1994) suggest that there are other reasons why we assess:
- Students expect it
- It helps students remedy mistakes
- It helps with option choice and selection
- It indicates readiness for progression
- It provides a performance indicator for students, staff and the Institute
- It can help diagnose faults
- It enables grading and final degree classification

Why do we need to consider our assessment approaches?

For teachers to be able to develop new approaches to formative assessment and relate them to different theories of learning, they must be able to investigate and reflect upon their own classroom practices – particularly the way they question and give feedback to students (Torrance, H. & Pryor, J. 2001). The effective teacher constantly monitor what is happening to students as they set about learning and investigate when things do not proceed as planned or expected. They also interrogate their own practice so they might get better at ensuring that their students learn successfully. (Demos 2004)

Take a few moments to think about a programme(s)/ module(s) you are associated with. Jot down the various types of assessment you use during the course, and when you use them.

Below are some examples:

	Type	When it occurs
1	Essay for continuous assessment	Semester One
2	Essay for continuous assessment	Semester Two
3	Practical exams	Continuous
4	Case study analysis	End of semester two
5	Examination	End of semester two

How many more methods of assessment do you use? Do not be surprised if you don't add too many more to this list; you're not alone - higher education is too often dominated by the same few methods of assessment, *"Something like 90% of a typical university degree depends on unseen time-constrained written examinations, and tutor-marked essays and/or reports."* (Race 2001),

The problem is, however, using the same assessment process can disadvantage the same candidates time after time, because individual students demonstrate their abilities for learning in different ways.   Student success in higher education can often becomes dependent on mastering those same old assessment formats.   "Good learning, teaching and assessment projects will, in the nature of things, be developing practices that are also likely to help students make good, well-founded claims to employability" (Knight 2003) So, while exams and essays should and will continue to play their part in third level education, by using a variety of assessment methods you can assess a range of skills, competence and/ or knowledge get more reliable and balanced results, and hopefully produce more rounded and more employable graduates'

Handbook Overview

This Handbook is divided into six sections as follows:

Section 1: Basics of assessment – what I should be thinking about and what should I know
This section introduces the reader to the fundamentals of successful assessment, defines and explains the difference between formative, summative and continuous assessment, and provides a very brief introduction to the importance of feedback.

Section 2: Planning and designing assessments – the basics, when to do it and how?
In this section the link between assessment and learning is explored, and the importance of constructively aligned modules/units which link assessment to content and learning outcomes. Also the fundaments of combining formative and summative assessment are considered.

Section 3: Management of assessment more effective, efficient and interesting for you and your students
In this section the reader is introduced to a variety of different assessment methods and consideration of ways and means of making the assessment process more efficient are explained along with exploring worth to both the lecturer and student in using the most appropriate assessment methods.

Section 4: Technology and assessment
The use of technology in assessment has been expanding and this section consider some of the technology driven forms of assessment that might be considered for both formative and summative purposes by lecturers

Section 5: Feedback
The benefit of using appropriate feedback that enhances student learning is explored. Practical steps on providing feedback are explained along with possible ways to reduce the work load while providing effective feedback**.**

Section 6: Reflective Practice
The concept of reflective practice is introduced and the importance of this component of our practice is considered in the context of enhancing learning and teaching.

Section 7: The future for assessment: drivers for change

Appendices and Bibliography

Section 1: Basics of assessment

1.1 Assessment determines student approaches to learning.

One of the most common questions a lecturer hears from students is, "Will this be in the exam?" It is well recognised by educationalists that students are preoccupied with what constitutes the assessment in their chosen field, so like it or not, we need to accept that assessment usually drives student learning. Indeed, assessment '*determines much of the work students undertake (possibly all in the case of the most strategic students) and, it can be argued, indicates to students which aspects of the course are valued most highly*' (Brown, Rust and Gibbs 1994, p. 4).

Gibbs (2006) states that '*assessment frames learning, creates learning activity and orients all aspects of learning behaviour*' (p. 23). Thus it is crucial to identify the types of assessments that best support our students' learning.

If students allow assessment define and prioritise what is important to learn, and ultimately how they spend their time learning it, then it is up to us as lecturers and assessors to deal with this fact, and react accordingly. The methods and timing of our assessment sends messages to students. So when creating assessment plans, we need to think about these messages: we need to take care to prioritise the most important areas we want our students to learn from, create clear and upfront learning outcomes (see section two), and assess appropriately. We should also be aware of the differences between 'deep' and 'surface' learning, and use assessment to produce students who are deep rather than surface learners.

Gibbs (2006, pp. 29-30) outlines the conditions under which **assessment supports learning**:

Quantity and distribution of student effort
1. Assessed tasks capture sufficient study time and effort
2. These tasks distribute student effort evenly across topics and weeks

Quality and level of student effort
3. These tasks engage student in productive learning activity
4. Assessment communicates clear and high expectations to students

Quantity and timing of feedback
5. Sufficient feedback is provided, both often enough and in enough detail
6. The feedback is provided quickly enough to be useful to students

Quality of feedback
7. Feedback focuses on learning rather than on marks or students themselves
8. Feedback is linked to the purpose of the assignment and to criteria
9. Feedback is understandable to students, given their sophistication

Student response to feedback
10. Feedback is received by students and attended to
11. Feedback is acted upon by students to improve their work or their learning

Value of assessment
The value of assessment
Assessment should be (Race 2001, p. 33-35):

- **Valid**: it should assess what you want to measure.

- **Reliable**[1]: there should be inter-tutor and intra-lecturer reliability.

- **Transparent** and in line with the learning outcomes.

- **Fair**: there should be equivalence of opportunities to succeed for all students.

- **Equitable**: assessment practices should not discriminate between students.

- **Formative**, even when it is also intended to b summative; assessment should let students know how they are doing.

- **Timely**: early opportunities should be provided for rehearsal and feedback.

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[1] In Brown and Knight (1994) reliability of assessment refers to the '*attempt to make sure that any assessment result describes the phenomenon being assessed and is not a product of the measurement instrument used*' (p.14). Reliability has two main dimensions: reliability of the assessor and of the measuring device. The notion of reliability in HE has been displaced by the concept of quality assurance in assessment, based on procedures that ensure fairness of assessment (Brown and Knight, 1994)

- **Incremental**: small units of assessment should build up into a final mark or grade.

- **Redeemable**: assessment strategys should contain within them opportunities for the redemption of failure.

- **Demanding**: a good assessment system should permit all students considered capable of undertaking a course of study to have a chance of succeeding in the assessment, provided they learn effectively and work hard.

- **Effective and manageable**.

1.2 What kind of knowledge, competence and/or skill do I want students to develop?

When devising your assessment plan, think about different skills you would like your students to achieve based on your learning outcomes set. Assessment should help equip students with a wide range of transferable skills and competencies. For example, a well-devised essay question is a good way to measure and assess your students' analytic skills. However, while it might be a wholly appropriate assessment method when testing for knowledge and evaluation of, say, "the theme of Irish tradition in contemporary reviews of 1930's art exhibitions", it would be less appropriate to set an essay to assess whether a student had mastered a particular brushstroke.

Both deep and surface learning have a place in assessment. Assessment can test memorising, acquiring facts or skills, or methods that can be reproduced when and if required. However, it can also test making sense of, or abstracting meaning, or of interpreting or re-interpreting knowledge. One of the most important aspects of assessment is to know what level of learning you are trying to achieve with your students and to assess accordingly. The level and type of skills and competencies imparted through assessment will depend on the level and type of programme. The National Qualifications Authority of Ireland's (NQAI) have produced a Grid of Level Indicators for each of the ten levels in the National Framework of Qualifications developed under section 7(a) of the Qualifications (Education and Training) Act 1999.

Please refer to the following link: http://www.nfq.ie/ for details of the grid of level indicators.

Brown's, "Assessment: A Guide for Lecturers" (2001) provides a useful starting point to consider the variety of assessment possible. Here is an extract which includes some of the possible assessment methods available for use:

Cases and open problems	An intensive analysis of a specific example.
Computer-based assessment	The use of computers to support assessments.
Essays	Written work in which students try out ideas and arguments supported by evidence.
Learning logs/ diaries	Wide variety of formats ranging from an unstructured account of each day to a structured form based on tasks.
Mini-practicals	A series of short practical examinations undertaken under timed conditions. Assessment of practical skills in an authentic setting.

Modified Essay Questions (MEQs)	A sequence of questions based on a case study. After students have answered one question, further information and a question are given.
Multiple Choice Questions (MCQs)	Select the correct answers.
Orals	Verbal interaction between assessor and assessed .
Objective Structured Clinical Examinations (OSCEs)	Candidates measured under examination conditions on their reaction to a series of short, practical, real-life situations.
Portfolios	Systematic collections of educational or work products that are typically collected over time. Wide variety of types from a collection of assignments to reflections upon critical incidents.

Poster sessions	Display of results from an investigative project
Presentations	Oral reports on projects or other investigative activities.
Problems	Measures application, analysis and problem solving strategies.
Group Projects and Dissertations	Assessment by a tutor/lecturer of the products of student group work.
Questionnaires and report forms	One or more questions presented and answered together.
Reflective Practice Assignments	Measures capacity to analyse and evaluate experience in the light of theories and research evidence.

Reports on Practicals	Methodically written account of a practical investigation
Self-assessed questions based on open learning(distance learning materials and computer-based	Strictly speaking, a method of learning not of assessment. A process by which an assessment instrument is self-administered for the specific purpose of providing performance feedback, diagnosis and prescription recommendations rather than a pass/fail decision.

approaches)	
Short answer questions	Brief answers that can measure analysis, application of knowledge, problem-solving and evaluative skills..
Simulated interviews	Useful for assessing oral communication skills.
Single Essay Examination	Usually three hours on prepared topic.
Work based Assessment	Variety of methods possible including learning logs, portfolios, projects, structured reports from supervisors or mentors.

This Oxford Brookes site also provides a useful guide to help you select methods of assessment: http://www.brookes.ac.uk/services/ocsd/2_learntch/methods.html

1.3 What is the difference between Diagnostic, Summative, Formative and Continuous assessment?

Depending on the purposes of assessment (not on the methods used), assessment can be summative, formative, or both.

Diagnostic Assessment, in some instances is referred to as pre-assessment, and is a form of assessment that provides the teacher with an opportunity to determine a student's prior knowledge in a unit of learning. It provides an opportunity to ascertain a students strengths, weaknesses, knowledge and/or skill which in turn can enable the teacher to plan and adjust the module to cater for the needs of the learner. Diagnostic assessment can be carried out on an individual or group basis. This type of assessment can also provide a baseline for understanding how much learning has taken place after a learning activity/ unit is completed. This type of assessment can be aligned with formative assessment to provide feedback to learners.

Summative assessment is assessment that is used to signify competence or that contributes to a student's grade in a course, module, level or degree.

Formative assessment, on the other hand, is assessment strictly used to provide feedback to the student on their learning. It provides the student with advice on how to maintain and improve their progress, but generally it does not form part of their summative grade or mark. Formative assessment is based on the assumption that '*growth is to be promoted, not left to the swirling patterns of 'natural' development by exposure to the subject matter of the degree*' (Brown and Knight 1994, p. 38). Formative assessment also helps students develop self-directed learning.

Continuous assessment usually involves a series of tasks that are individually assessed, though sometimes it is appropriate to add a final assessment to continuous assessment. It is best used when there are several distinct module learning outcomes which are achieved at definable stages during the module. Whereas unseen examinations can help eliminate plagiarism, they only give the student one chance to show their capabilities, tend to measure particular types of knowledge, and can favour those who can withstand stress and have good recall skills. Continuous assessment can provide a more reliable estimate of a student's capabilities and indirectly measure a student's capacity to manage time and handle stress (Brown, 2001). With continuous assessment, the total assessment workload on both staff and students may seem greater that that experienced with one-off final assessment, but it is more evenly distributed.

Timely feedback is an important part of continuous assessment as it informs the learner on how well students are progressing and how they can improve. If students are given feedback on each piece of continuously assessed work, then they can direct their future learning in relation to this feedback.

The most important principle of summative assessment is that it should determine whether, and to what extent, the student has attained the learning outcomes specified for that module, and should lead to a grade or mark that will affect the student's progression, result, or both. What students learn, how much effort they put into it, and the nature if their learning is often determined by the extent and nature of the summative assessment they expect to receive. However, formative assessment is essential to learning, and ideally curricula should be designed to maximize the amount of formative feedback students can receive on their work.

1.4 Can you combine formative and summative assessment?

You may find that you often provide feedback on a module essay to a student as well as providing a grade for it that will count towards the student's summative profile of marks. Arguably, all summative assessment should give students feedback that has formative value. After all, if a student has to write a series of essays, each of which contributes to a final grade, then good improvement-centred feedback on each essays should help them enormously in subsequent ones.

However, setting a formative assessment task for summative purposes is not generally advised by experts in the field, who believe that these two assessment purposes are not mutually exclusive. This is because once a high stake assessment (summative) is introduced, students are slower to disclose what they do not know, and the purpose of formative assessment is to find out what students have difficulty with in order to help them. With purely formative assessment the stakes are not so high for students, so they can be more open about their knowledge gaps, or areas of difficulty.

It is possible to use both summative and formative assessment for the same module. For example, you may set an assignment that has a series of questions on a programme that will be assessed summatively. But you may also ask the student to provide a summary of the programme as a formative assessment of learning, where the student is clear that this summary is not being graded or will not influence their final assessment in any manner. The difference here is that the student is fully aware which part of their learning is being assessed summatively and which part is being assessed formatively.

1.5 Plagiarism

Plagiarism is defined as 'passing off' others work as one's own and has become a major concern within Higher Education. Reasons cited for the increase in plagiarism include the widespread use of technology and students being over assessed. For some students, and indeed staff, there is a lack of awareness of what constitutes plagiarism. You can test your own understanding here! http://education.indiana.edu/%7Efrick/plagiarism/

Many HEIs have started to purchase software like Turnitin that function by a comparative analysis of documents in order to detect where plagiarism has occurred. In some departments, students are asked to submit a Turnitin report with each assessment submitted as part of their coursework. http://www.turnitin.com/static/home.html Companies like Blackboard have now

responded to this issue by developing their own version of antiplagiarism software called SafeAssign.

As well as educating students around the area of avoiding plagiarism, another way to respond is to review current assessment methods used within programmes, is there clumping of assessments at certain points of a course, do assessment methods encourage students to copy or paste text, are students lacking confidence in undertaking the assessment? In addition, can more creative assessment methods be developed that would reward individual personalized contributions?

The UK JISC provides some useful guidelines round plagiarism and supports a Plagiarism service http://www.jisc.ac.uk/publications/publications/pub_plagiarism.aspx

Section 2: Planning and designing assessments: when to do it and how.

Assessment is an integral part of the learning process and, ultimately, should aim to improve the quality of student learning. However, often assessment is viewed as being somehow separate from the learning process, something that is done to students at the end of a module/semester to test what they know and what they don't know.

When designing, running and assessing a module, it is vital to know and be able to clearly communicate to the student what that module is intended to achieve, what the student should be able to do upon completing it, and what they will have to demonstrate in order to pass it.

2.1   What has alignment to do with assessment?

It is the lecturer's responsibility to fashion a learning environment where the learning activities are wholly appropriate to achieving the desired learning outcomes. Designing a module using a learning outcomes approach recognises the need to plan assessment as part of a whole curriculum experience. That way assessment is congruent with the aims and learning outcomes and with the teaching/learning methods adopted.

Constructive Alignment is a theory of learning that begins with the premise that the learner *constructs* his or her own learning through relevant learning activities (Biggs, 1999). The key to achieving this goal is that all components in the teaching system (ie. teaching process from planning through assessing) are *aligned* to each other to facilitate the achievement of the intended learning outcomes. Thus, the curriculum, the intended aims, learning outcomes, teaching methods and resources and the assessment tasks and criteria for evaluating it, are all aligned as illustrated at Figure 1 below.
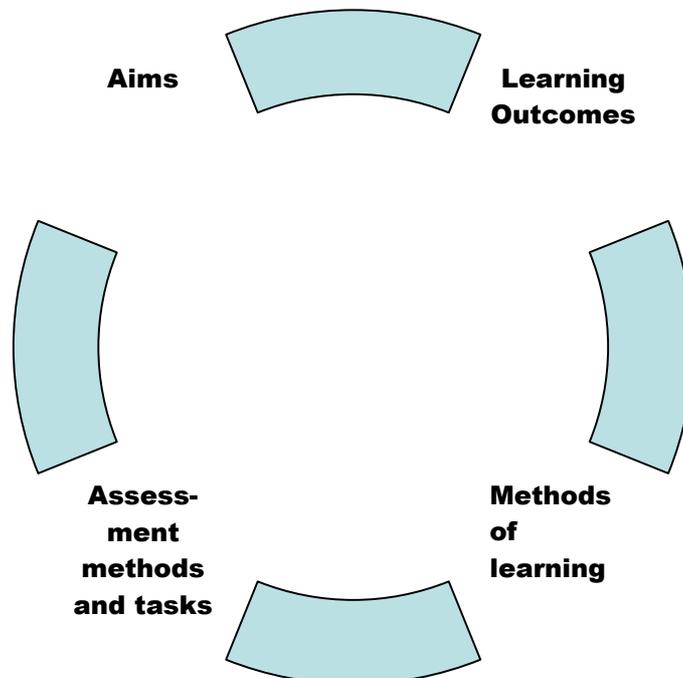

Aims   Learning Outcomes

Assess-ment methods and tasks   Methods of learning

Figure 1

2.2   Matching assessment with learning outcomes

Learning outcomes are statements that predict what successful learners will gain as a result of learning, so there should be a clear relationship between learning outcomes and assessment. Alignment is central to effective assessment. It is possible to assess more than one learning outcome at once as long as all assessment tasks are appropriate to, and in harmony with, the learning outcomes they are meant to assess.

So remember:
- Ensure the assessment method tests the stated learning outcomes
- Ensure the assessment method does not test any significant learning outcomes that are not explicitly stated. Assessment should never go beyond the learning outcomes. For example, if the learning outcome states that the student should be able to "select an appropriate method", then the assessment task should not go beyond this limit by asking to "analyse the method".
- Ensure all major programme or module outcomes are assessed. However, be prudent, if you assess every minor learning outcome of every module, then you run the risk of over-assessing students.

The clearer the learner outcome, the easier it will be to devise an appropriate assessment. A carefully thought-out learning outcome will give a solid indication to the lecturer of what kinds of assessment are appropriate, and of the skills and knowledge the learner will have to demonstrate to pass.

Most programmes aim to provide students with an opportunity to experiment, develop and be assessed on a range of different skills. These are reflected in the module and programme learning outcomes. Bloom's Taxonomy of Educational Objectives (1956) is a well-known, detailed structured framework that helps to identify and write appropriate learning outcomes. For an effective run-down of Bloom's taxonomy in all domains, cognitive, affective, and psychomotor, see this PDF from the Teaching and Educational Development Institute at the University of Queensland: http://www.tedi.uq.edu.au/downloads/Bloom.pdf Biggs (1999) SOLO taxonomy (Structured Observed Learning Outcomes) has also been designed to describe the increasing complexity of a learners understanding of a subject. For an overview see http://www.tedi.uq.edu.au/downloads/Biggs_Solo.pdf

Once the learning outcomes have been clearly defined, it becomes easier to develop the assessment methods to determine whether these learning outcomes have been met. When choosing assessment items, it is important to consider the immediate task of assessing student learning within the context of the module, but also keep in mind the broader aims of the programme and the qualities of the graduating student. Ideally this should be undertaken at the programme level in order that an assessment strategy is designed across a program.

2.3   Provide a variety of different assessments across a programme

When referring to methods of assessment, we mean the approach used to assess learning. Most programme documents refer to a range of learning outcomes from those relating to knowledge and comprehension to higher level skills of problem solving and evaluation as well as many key skills, but these are often not always evident or explicit in their assessment practice. With an increasingly diverse student population there is also now an increasing need

to encourage staff consider both the effectiveness and efficiency of assessments This involves consideration of individual assessments and their link to the proposed learning outcomes and desired skills as well as a holistic approach exploring the diversity, development and management of assessments across programmes Hornby (2003). Is their an overdependence on one kind of assessment? Are students overloaded at certain times in the year forcing them to adopt a surface approach to their learning or are there variations in the demands being made on students between different assessment methods and is this appropriate?

When selecting assessment methods, it is particularly useful to think first about what qualities or abilities you are seeking to engender in the learners. If the intention is to encourage students to develop a diverse set of skills varying from analytic and problem solving skills, critical awareness, vocational demonstration of skills as well as generic skills then the assessment methods must be both diverse and appropriate in their design and implementation to assess whether this learning is or has taken place and how the learner might improve the next time.

For some assessment ideas have a look at the DIT's online assessment database and make consider contacting colleagues to draw upon their experience of using these assessments http://intranet.dit.ie/ltc/html/assess_currentprojs.htm

2.4 Making assessment more transparent

o Constructing assessment criteria

In order to provide a fair and transparent assessment strategy within modules and across programmes, it is fundamental that both students are staff are clear on what students are expected to do, the circumstances in which they are asked to do it and how the marks are going to be awarded. In many instances, students aren't aware of the assessment criteria or how assessors interpret them – this knowledge is often considered the property of examiners, but there is no reason for this secrecy. Be upfront with your criteria – it will help your students enormously to know what they are aiming for, or to see where they fell short, and consequently lead to much deeper and effective learning.

A criterion for assessment explains the relationship between how well a student answers the questions set or performs the task set, and the mark and grade which they are given. Whereas learning outcomes say what a student is expected to do, assessment criteria say how well they should be able to do it to obtain a particular grade.

Assessment criteria, describe as clearly as possible, the characteristics of what is acceptable, good, excellent etc. Of course, it is impossible to be always precise in describing what makes a piece of work 'very good', or 'excellent', but we should go as far as possible to try to write them, either individually or with other lecturers for a programme, as they make life a lot easier for both the student and the assessors. For other examples of assessment criteria, see Appendix 4.

o Using exemplars and Scoring grids

Another way to make assessment more transparent is to create model answers or marking schemes which show how marks and grades will be awarded, though often the use of model answers and marking schemes is more appropriate in scientific or technical disciplines. Phil Race has some good examples of marking schemes in his article, 'Quality of Assessment'. http://www.city.londonmet.ac.uk/deliberations/seda-pubs/Race.html

Scoring grids are another useful and cost-effective way to support timely, efficient assessment practice. They are used by markers to assess fairly and efficiently, can be used to develop and enhance student feedback, but should also be given to students to guide and inform their assessment preparation. Margaret Price and Chris Rust, of Oxford Brookes University have developed an excellent assessment grid for staff which provides a comprehensive list of criteria that can be tailored to suit your modules. Simply select the criteria/descriptors you wish to use for an assessment relevant for your module, and create your grid. To access this grid, click on the following web link:
http://teaching.econ.usyd.edu.au/groupwork/Evaluation/docs/OxfordBrookesBusAsstCriteriaASS016.pdf

2.5 A checklist for quality in student assessment

1. Assessment is treated by staff and students as an integral and prominent component of the entire teaching and learning process rather than a final adjunct to it.
2. The multiple roles of assessment are recognised. The powerful motivating effect of assessment requirements on students is understood and assessment tasks are designed to foster valued study habits.
3. There is a faculty/departmental policy that guide individuals' assessment practices. Subject assessment is integrated into an overall plan for programme assessment.
4. There is a clear alignment between expected learning outcomes, what is taught and learnt, and the knowledge and skills assessed — there is a closed and coherent 'curriculum loop'.
5. Assessment tasks assess the capacity to analyse and synthesis new information and concepts rather than simply recall information previously presented.
6. A variety of assessment methods is employed so that the limitations of particular methods are minimised.
7. Assessment tasks are designed to assess relevant generic skills as well as subject-specific knowledge and skills.
8. There is a steady progression in the complexity and demands of assessment requirements in the later years of courses.
9. There is provision for student choice in assessment tasks and weighting at certain times.
10. Student and staff workloads are considered in the scheduling and design of assessment tasks.
11. Excessive assessment is avoided. Assessment tasks are designed to sample student learning.
12. Assessment tasks are weighted to balance the developmental ('formative') and judgemental ('summative') roles of assessment. Early low-stakes, low-weight assessment is used to provide students with feedback.
13. Grades are calculated and reported on the basis of clearly articulated learning outcomes and criteria for levels of achievement.
14. Students receive explanatory and diagnostic feedback as well as grades.
15. Assessment tasks are checked to ensure there are no inherent biases that may disadvantage particular student groups.
16. Plagiarism is minimised through careful task design, explicit education and appropriate monitoring of academic honesty.

Section 3: Management of assessment

3.1 Making assessment efficient, effective and interesting for students

All too often assessment is an end-product, a non-avoidable chore that is used to evaluate, measure and box students. But there is more to the process of assessment than this. This section will draw attention to the benefits, for both and your students, of adopting more innovative forms of student assessment.

For academic staff, assessment can be a final consideration in the lesson planning process once learning outcomes and course content have been defined. In contrast, students will often start by focusing on the assessments, and what needs to achieved to pass a module or progress to the next stage of a programme. This is often referred to as tapping into the hidden curriculum Snyder (1976). *"If you want to change student learning then change the method of assessment" (Brown et al. 1997)*

Capitalising on their strategic approach to their studying, Gibbs and Jenkins (1992) suggest that lecturers should review assessment strategies across a programmes in terms of workload and student study patterns and in order to encourage students to engage in the kinds of activities that will help them to attain what they consider to be the desired learning outcomes:

- How well are students performing on the module/programme and what are they poor at?
- What do students do during study time and is this study evenly distributed?
- How is their learning behaviour influenced by the assessment strategies used?
- Are there any areas where their learning strategies could be improved?

Reviewing assessment strategies across modules and programmes should reveal a range of methods that develop in line with the programme learning outcomes and that are weighted accordingly within the assessment criteria. For example you might want to weight criteria towards eg innovation and/or research towards the later stages of a programme.

3.2 Streamlining assessment

Recent reviews (e.g. Scottish QAA 2005 report) have identified a number of key issues relating to Higher Education assessment practice. These include the need to avoid over assessment and assessment workload, often through the clumping of mid or end of module assessments, and a need to try address a lack of diversity or the introduction of more innovative assessment practice. Boud (1995) identifies a need to move from seeing particular assessments in isolation towards recognising them as linked to the other kinds of assessment used, the proximity, frequency and also the context of their usage within programmes.

Assessment can be viewed not only as Certifying achievement (summative assessment), Aiding learning (formative assessment) but as a way to Foster lifelong learning (sustainable assessment). Boud suggests two ways of streamlining assessment practice in order to increase the sustainability of assessment practice in a way that "Assessment meets the needs of the present without compromising the ability of students to meet their own future learning needs." (Boud, 2005)

1) Control perspective where traditional methods are made more efficient for example setting fewer, shorter assignments, using standardised feedback forms, setting limits on assignment length, penalise those going beyond the limit, maintaining deadlines and using other assessors

2) Shifting the responsibility for assessment to the student by for example front loading assessment providing clearer student guidelines, devising group tasks and assessing the group, or introducing Self and or peer assessment methods asking students to use a marking scheme to mark each others work (Gibbs and Jenkins, 1992).

Either way an efficient assessment should link to learning outcomes of the course in a way that is efficient for lecturers and a reasonable workload for students. All too often, assessment is something that lecturers do in a vacuum. It is thus important that we realise that our students are attending other lectures and possibly have other assessments to carry out at the same time. To avoid undue burden place on students by having to complete numerous assessments at certain times during the year, consult with other lecturers on your programme as to the nature and scheduling details of their assessments, and co-ordinate your assessments accordingly.

3.3 Involve others in the assessment process

Traditionally, the role of the assessor usually falls to the lecturer/tutor. However, it is often worthwhile to consider involving others in the assessment process. For example, industry experts can be a valuable resource when creating and marking assessments. Or consider involving students in their own assessment. Effective and appropriate use of involving others in the assessment practice can enhance the learning experience, enrich the teaching experience, and reduce the marking burden placed on staff.

It worth remembering that giving informed, meaningful feedback can be an effective use of class teaching time. One way of increasing the efficiency of assessment is to ask students to work together as a group and to assess the group's work.

- #### Group assessment
Group assessment occurs when individuals work collaboratively to produce a piece of work. The advantage of group work for the assessor is often that the burden of marking many individual pieces of work is significantly reduced, but there is also the educational justification that collaboration is an important generic life skill that third level education should be developing in its students.

The biggest challenge when assessing group work is that it is rare that all group members will contribute equally; therefore, how can you assess fairly? There are various strategies to help deal with this (Rust, 2001):

1. Award a group mark, but allow for a "yellow card" if all the group members feel a member of the group is not pulling their weight. If the offending member changes his behaviour before a certain date, the card will be rescinded. If not, a 5% penalty in their mark will be imposed. In a worst case scenario, a red card can be awarded where a student has to produce an individual piece of work instead.
2. Assign individual responsibilities and assess each member on the degree to which they have met their individual contracts.

3. Allow the group to divide the group mark depending on individual contributions. Thus, if the lecturer decides that the group project has received a total mark of 120, the group members decide how to allocate the figure. In practice, this is often challenging to execute, as group members have to reach agreement and be very clear in justifying their marks against the assessment criteria.
4. Peer-assess contributions. Instead of giving the group all the marks to allocate, only a certain percentage is allotted to this process. Thus the lecturer may allocate 80% of the project mark to the group her/himself, and the group may divide the remaining 20% among its individual members as they see fit.
5. Conduct a viva. A common group mark is awarded, and the remaining marks allotted by the lecturer after a group or individual viva, which should be able to throw insight on individual contributions.
6. Set a project exam. Again, a common mark is awarded to the group, but the module exam will have a compulsory question related to the project which individual students must answer. (Rust, 2001)

Another way of increasing the efficiency of assessment is to allow students play a role in assessing themselves or each other. This is called self assessment or peer assessment, two sources of assessment that can be used with a variety of methods of assessment.

- **Peer Assessment**

Peer assessment may be defined as the assessment of the work of others of equal status and power. In the context of student learning, peer assessment is used to estimate worth of other students' work, and to give and receive feedback. With appropriate training and close moderation, it is possible that students can play a role in summative assessment, but generally peer assessment works best in formative assessment where students give each other feedback on each other's work.

This approach to assessment requires careful planning, agreement of criteria and use of common tools for analysing marks. Further, you may need to encourage your students to take this practice seriously, and developing the necessary skills does need time and support. But the benefits of peer assessment are many:

- Peer assessment is becoming widely used as a means of giving feedback to students, arguably more feedback than a lecturer can normally provide.
- Peer assessment should benefit both those giving the feedback as well as those receiving it. Giving constructive feedback is a valuable skill. To acquire this skill the student will learn how to study marking/grading schemes or assessment criteria, construct sentences that impart effective comments, and be able to defend their feedback.
- Critical reflection, a key skill involved in giving feedback, is an academically valuable one. Students also learn diplomacy, how to receive and act on constructive criticism, as well as the more obvious skills of making explicit and criterion-referencing judgements. In studies carried out, students have reported real benefits in retention of knowledge, enhanced creativity, greater resourcefulness and increased motivation. There are also reported gains in specific deeper knowledge in the subject area itself.
- Peer assessment can deepen the student learning experience as students can learn a great deal about their own work from assessing other students' attempts at a similar

task. They will also learn about the assessment culture of the Institute, become autonomous learners, and develop skills of life long learning.

- ○ **Self assessment**

With self assessment, students check their work, revisit assignment drafts and texts, and research and reflect upon their past practice. Care is needed to teach the student to make judgements on what was actually achieved rather than what was 'meant'. But once mastered, in addition to judging one's own work, the concept of self-assessment develops skills in self awareness and critical reflection. Many of the benefits of peer assessment apply to self-assessment.

Self assessment has been defined as "the involvement of students in identifying standards and/or criteria to apply to their work and making judgements about the extent to which they have met these criteria and standards" (Boud, 1991). According to Boud there are two parts to this process: the development of criteria, and the application to a particular task. Assessment decisions can be made by students on their own essays, reports, presentations, projects, dissertations and so on, but it is believed to be more valuable when students assess work that is personal in nature, like a learner log, portfolio etc (Race, 2001)

3.4 How much time should be spent on assessment?

As lecturers and course designers we should make reasoned and conscious decisions on how much time we should spend setting and correcting assessment, and giving feedback. Obviously, with economies of time, assessment needs to be efficient as well as productive, and should achieve its various purposes (returning reliable marks, giving feedback, generating appropriate student activity, and motivating learning) in a way that makes best use of staff and student time, and other resources. Assessment can consume a large amount of staff and student resources, so it needs to yield a high return in order to be efficient.

By deciding how much time you want to spend and how much time you want your students to spend on assessments, you can then decide how you want to spend this time. For example if you have a class of 50 who submit 4 essays per semester, you might spend approx 100 hours marking time. If you cut this back to 2 essays and allocate the remaining time to other activities, this will become more interesting for both groups as well as enable students to demonstrate their learning in different ways. For example, ask the students to perhaps give a poster presentation in class which includes a peer review element or to review a selection of websites and add these to an online discussion board or to work through a case study to come up with alternative possible solutions

Boud's, (2000) concept of "sustainable assessment" gives equal level of importance to assessment as a tool for developing learning alongside its function of measuring performance. This can be achieved by
1 Strategic reduction of summative assessment
2 Front-end loading
3 In-class assessment
4 Self and peer assessment
5 Group assessment
6 Automated assessment and feedback (Hornby (2003)

Assessments that are designed to match with lower level learning outcomes should correspondingly be allocated less time allocation to those demanding the development of higher level learning outcomes.

3.5 What can you do once the assessment is over?

Of course, assessment should also help to improve teaching. When assessment and exam boards are over, there is a temptation for lecturers, a bit like there is for students, to breathe a sigh of relief and not to think about it until the following semester. However, even a fairly perfunctory assessment analysis will tell the lecturer if the students have difficulty in mastering one particular area of the course. The lecturer can accordingly devise extra learning experiences to address this problem, or fine tune their course where necessary.

When analysing assessment tasks, you might ask the following:

- What types of questions did students do particularly well on? In what respects?
- What types of questions did they struggle with? In what respects?
- What kind of tasks was their a variety of responses to?
- Which assessment questions did students avoid?
- Which assessment questions were the most popular?
- What can this tell us about the teaching, learning, and assessment?

It is thus advisable to give a little time to analysing the assessment experiences in order to contribute to continuous improvement of teaching and learning, and to refine practices and policies of assessment.

Section 4: Technology and assessment

4.1 Why consider using technology to support assessment?

An increasing diversity of technologies are now available and being used within both formal and informal learning contexts. These technologies can, for example, provide tailored personalized options to individuals through adaptive systems or access to wider communities of learners or experts for support and guidance. As these become more widespread in their usage, it would appear to be a natural progression and indeed an expectation that these new technologies be used to support the student assessment process and facilitate timely appropriate feedback to students in a cost-effective way.

Indeed, eAssessment is now well recognized as a term to cover 'end-to-end electronic assessment processes where ICT is used for the presentation of assessment activity and the recording of responses. This includes the end-to-end assessment process from the perspective of learners, tutors, learning establishments, awarding bodies and regulators, and the general public' (JISC Glossary of terms).

A JISC-funded project Roadmap for eAssessment reviewed current policies and initiatives in the UK and found that one of the main drivers for implementing e-assessment was to improve student learning with faster feedback. http://www.jiscinfonet.ac.uk/InfoKits/effective-use-of-VLEs/resources/roadmap-for-eassessment

In a climate of increasing academic workloads, the adoption of online assessment may help to manage large volumes of marking and assessment-related administration efficiently as well as provide useful support for student learning and helpful diagnostic information for staff. For some, eAssessment is synonymous with basic skills testing and is perceived as limited in its usefulness, although many of the new and emergent technologies are starting to provide increased adaptive functionalities that have the potential to provide a much richer menu of eAssessment options.

4.2 Advantages and disadvantages of using online objective testing:

Online assessments, in particular objective tests, lend themselves to online delivery: there is only one correct answer and feedback can easily be tailored to specific student responses. Questions can be embedded within text documents and associated with online activities to test understanding. Hints can be provided in pop-up windows to prompt ideas with exemplar answers included to assist progress.   In addition, these questions can be used diagnostically to identify learning grey areas thus enabling immediate support to be provided at key stages of the learning process. Questions, can also be used as a prompt to stimulate discussion in small groups, as a revision tool for students or as student constructs where students create their own questions.

Mobile phones and 'clicker' classroom 'who wants to be a millionaire' systems are becoming more widespread in their usage in order to produce interactive classrooms where a lecturer can ask questions as part of class and get an immediate summary and analysis of responses. Steve Draper's website provides a useful overview on this

http://www.psy.gla.ac.uk/%7Esteve/ilig/ One criticism of objective testing however, is the time taken to produce 'good questions'. Question banks provided by publishers alongside their hardcopy publications or ePack assessments can be a useful way to get started with eAssessment either as an individual or as part of a programme team.

Here is a summary table of some of the other perceived advantages/disadvantages of using online objective tests

Advantages	Disadvantages
Reduced marking time/ administration	Significant time required to construct good questions
Can cover wider range of topic content	Writing questions to test high level skills is problematic
Analysis of individual questions is possible	Open to guessing
Enables immediate, automated, tailored feedback	Difficult to assess written expression/ creativity
Potential for use of multi-media	
Question pre-evaluation possible	
Useful as a diagnostic or revision tool	
Question banks already available	

Table 4.1   Advantages/disadvantages of using online objective tests

4.3 Different ways of using technology to support assessment

While objective tests are viewed by some as being the main eAssessment option, a variety of other on-line tools are becoming more commonplace as ways to assess and support learner progress toward learning outcomes.

Many of these are relative easy to set up including:
  o Electronic submission of written assignments
  o Parallel print and online assessment options to provide student choice
  o Online exams with monitored and controlled start and stop times
  o Publication of documents/ exemplar answers incl. assessment guides and grids
  o Labelling of online diagrams/ Manipulation of online graphs and simulations
  o Construction of online concept maps, flow charts and diagrams
  o Completion of online short answer questions, simple tasks or problems
  o Tasks or group activities using online discussion boards
  o Evaluation of web-based materials, information retrieval exercises

To assess higher level learning outcomes, methods including online role playing activities where students can explore different perspectives to a problem, WebQuests when different kinds of information is provided as part of a case study or problem, the creation of virtual worlds, games and simulations can provide a rich array of learning opportunities for an increasing heterogenous off-campus student population. ePortfolios blogs or reflective diaries can be used to provide a flexible way to capture or support

learning and evidence of attaining learning outcomes can be negotiated with a workplace mentor or lecturer as part of learning agreement or contract. In this way different kinds of learning can be demonstrated within a potentially media rich learning environment.

Like any other method, for eAssessment to be effective, it is important that the assessment method is constructively aligned with the intended learning outcome(s). Technology can be used more effectively if embedded within the curriculum and not used as a bolt on to face to face teaching and assessment practice more effective if assessment methods are selected appropriately. For some other eAssessment ideas in practice   see http://www.jisc.ac.uk/media/documents/programmes/elearningpedagogy/eassessmtcase studies.pdf

4.4 Using eAssessment as part of a module or programme

There are four main areas worth considering, that impact upon or are affected by eAssessment: (JISC, 2006) Institutional (Culture, strategic, operational) Technical (Infrastructure, software, standards, security etc), Technical learning support, design etc) and pedagogical (new opportunities for teaching and learning). However despite this, it is important to plan and design assessments in a way that is pedagogical and not technologically driven. A badly designed assessment strategy or question doesn't improve when used online! For some guidance on writing good objective questions see the CAA guide http://www.caacentre.ac.uk/resources/objective_tests/index.shtml JISC have also provided an easy to use guide relating to the use of assessments within VLEs http://www.jiscinfonet.ac.uk/InfoKits/effective-use-of-VLEs/e-assessment/assess-interop

With more technology supported options becoming available, assessments can now be more appropriate, relevant and timely in their support of the learning process. A range of assessment options are possible both within the face to face and the virtual classroom. Tracking facilities within VLEs also means that teachers can see who has taken an assessment, how long was spent answering the question and when it was submitted. Even general applications such as Office or subject discipline software such as CAD or modelling packages can be integrated within your assessment process to help students outline designs, support group problem solving or plan collaborative projects. However, as well as making sure that your assessment methods are transparent to students, it is also important that your assessment is fair - check that all students have equal access to a PC and the appropriate IT skills. Here are some examples of different ways to select an appropriate assessment method and to be aware of some of the pitfalls:

If the goal or purpose is to:

develop/ assess…	one might use…	but in addition to learner access to and competence with technology, one may need to consider, for example…
(objective)	(mode) an on-line exam	(learner characteristics) • The likelihood of cheating
Learner autonomy	An on-line quiz with formative feedback	• That some students' ICT-related anxiety will dissuade them from using this mode

Group work skills	On-line study groups	• Learner comprehension of how to contribute effectively • Learner understanding of group product/process assessment • Varying learner commitment to collaborative learning
Understanding of basic concepts	Web-based, self-paced, interactive modules with automated responses and no recorded marks or grades for students	• Learner interest, motivation and engagement with modules/material given absence of marks/grades • Effects on learners of heavy traffic at peak times
Student problem-solving skills	On-line 'role-play' where students adopt allocated roles and then solve a problem in role, with a minimum participation requirement only	• Learner comprehension of how to contribute effectively • Learner interest, motivation and engagement with role play/material given absence of marks/grades
Ability to think critically and articulate critical analysis	On-line scenarios and information with accompanying prompts and a discussion board, with a minimum participation requirement	• Learner comprehension of how to contribute effectively • Varying learner commitment to collaborative learning • Possible variation in starting and completion times for distance and other students

Learner ability to reflect	Rhetorical, ethical or other questions and a web forum which learners must use to share their reflections, with a minimum participation requirement	• Learner comprehension of how to contribute effectively
		  • Varying learner commitment to collaborative learning
		  • Possible variation in starting and completion times for distance and other students

Table 4.2: Objectives, modes and learner characteristics of on-line learning adapted from Leask (1999) and the University of South Australia

4.5 Harnessing new technologies to support assessment

In parallel to increased eAssessment options and usage, research into the most effective ways to use new and evolving technologies such Web 2.0 social networking tools has also started to emerge. Transformation projects like the REAP project in Scotland http://www.reap.ac.uk/assessment/index.html aim to 'enhance teaching and learning practices that support reflection, self and peer assessment and through devising higher quality, and more strategically aligned, teacher assessment and feedback (i.e. aligned to the development of self-regulation).' The project has, as a result, produced evaluated assessment re-designs including virtual learning environments (VLEs), e-Portfolios, electronic voting systems, computer simulations, podcasts and new communication tools across several institutions.

There are also a range of support materials and resources available to support these developments within the DIT. A good starting point for staff is the DIT's Learning Technology Team for guidance in this area.http://ltt.dit.ie/

Some other interesting resources can be found online For example, Ferl's e-assessment website provides users with guidance, ideas, tips, case studies, articles and quiz links: http://ferl.becta.org.uk/display.cfm?page=189. The University of Melbourne provides some useful resources http://www.cshe.unimelb.edu.au/assessinglearning/03/online.html and the CAA centre is designed to provide information and guidance on the use of CAA in higher education. http://www.caacentre.ac.uk/

Section 5: Feedback

It is a truism that student learning requires timely feedback (Gibbs in Bryan and Clegg 2007)

5.1 Why is feedback so important?

Good quality, comprehensive, timely feedback is a very important factor in enhancing student learning. Assessment should provide feedback to students on their progress towards the achievement of learning outcomes. The effective use of feedback will provide the opportunity for students to realise where they have done well and indicate what they could improve on, as well as justifying the grade/mark of summative assessments.

The importance of timely feedback cannot be over emphasised. If provided too soon, it may disrupt the student's reflective process. However on the other hand, provided too late it may no longer salient to the student and be worthless as contributing to the learning process. Feedback should not be held off until the end of a stage or semester, as the learner is unlikely to derive much benefit from it once the task is complete and they have moved on to a new one.
The benefits of successful feedback set in the context of learning outcomes are many. For example, successful feedback will:
- build learner's confidence,
- motivate the learner to improve their learning;
- provide the learner with performance improvement information,
- provide an opportunity fort he learner to address and correct errors,
- identify strengths and weaknesses

5.2 Will students take formative assessment seriously?

As has been indicated earlier in this guide, students are generally most motivated by what is going to contribute to their final mark. However, even though formative assessment will not contribute directly to a summative mark, it does play a vital role in helping students improve their grades. And if students apply their energies to activities that earn them grades, then it is important to impress on them how they can improve their own grades through embracing formative assessment.

Formative assessment is essential to learning in its aim is to give appropriate and timely feedback to students on their learning, and to help them to improve their future work. This should be enough to motivate your students to take formative assessment seriously, but students will also be motivated if they clearly see the point of their work; how it relates to the course, the module, and their career goals; if it is inherently rewarding or interesting; or if they can see their skills and expertise advancing. Good quality formative assessment will exude all the qualities, and more.

5.3 The principles of providing assessment feedback to students

The role of feedback in the learning process is to inform the student of where and how their learning and performance can be improved. Feedback on learning can come a number of different sources, namely, fellow students, lecturers/teachers, and/or staff supporting the learning process such as demonstrators, or the student themselves.

While feedback to students is often thought of as being given in response to assessment there are many types of feedback on learning, which do not relate to assessment at all, ranging from feedback on work in progress (eg during lab work and workshop sessions) to more generic feedback on how effective a student is performing their studies overall (end of semester/stage study advice).

Feedback on an assessment can be given to sum up the final decision of the quality the students work (**summative** feedback), or to help the student improve their work as they progress through a programme, module or unit (**formative** feedback). A form of feedback used less extensively in higher education is one that helps the student identify their aptitude and ability for a particular kind of learning (**diagnostic** feedback). A particularly individualised form of feedback, used in (performing) arts, sports, design and professional disciplines takes into account the students' previous developments, and uses this as the starting point for assessing progress or improvement of skills, knowledge and competence **(ipsative** feedback).

Consideration of best practice in providing feedback to students should be well thought out by academics and the following principles can be used as appropriate:
   - Feedback is most effectively provided as soon as practicable after the assessment has taken place, so that any learning from that feedback can still be connected to the assessment content and to enhance student learning.

   - Feedback should be critical, but supportive to learning, in order that it encourages a student's confident scrutiny of their future work.
   - Feedback should, in as much as can be practically achieved, be directly related to learning outcomes and given assessment criteria, (in order that each student is very clear on what was and will be expected of them). In line with best practice it is appropriate to indicate the right assessment criteria matched to learning outcomes.
   - Feedback on work should go beyond editing comment (i.e. grammar, spelling, mathematical notation, presentation) and link to the broader learning outcomes. Common editing type feedback can be given through the use of a feedback defined check list.

   - Feedback should be given with due care and attention to standards of respect for diversity and individuality, and should rarely be directed at the student, but rather at their work.

   - Feedback is most likely to have a significant effect on their learning if students are fully aware that what they encounter is meant as feedback. .

5.4 Practical feedback methods

The most common forms used in higher education for giving feedback is written feedback on student self assessment's' individual work, or verbal feedback either to individuals or groups of students. The pressure on work load can lead to more innovative means of assessment and feedback. These practical feedback methods include:

   - Providing **generic feedback** in lectures, tutorials or workshops: feedback is given on

what the majority of students seem to be struggling with, without reference to each individual's assessment. This can be helpful as it does not single any particular student out

o **Class marking:** collate parts of actual student work, to let students themselves mark and provide feedback on an assessment they have in fact, all handed in. Question by question, the collated work could for instance consist of an example of a great answer, and an example of problematic answer to the same question.

o **Self assessment:** provides students with an opportunity to self assess at the end of their assessment work. This can be achieved when gauged against a set grid or checklist of assessment criteria.

o **Student steered feedback**: the student is asked at the end of their assessment to put forward a request for feedback on a particular part of their learning. This is one of the strongest means to make a student evaluate their own progress, and allows the assessor to target a student's concerns most precisely.

o **Feedback statement banks**: collate a structured listing of carefully phrased feedback remarks you most often use for a particular assessment. You can then use it alongside your marking for each piece of assessment work. When marking, simply cross reference to the relevant feedback comment, or use a fixed coding system and give the student the marked up feedback statement list along with the marked work. Ideally, your feedback statement listing also leaves space for individual feedback.

   Introducing feedback statement banks are a prime opportunity to improve the quality of feedback, by commenting on how improvements can be made regarding the issue for which the student is being marked down.

o **Electronic feedback** can combine the benefit of speedy feedback returns, with the advantages using feedback statement banks which list standard feedback given to common mistakes (tackling repeated feedback on, say, grammar problems or notational mistakes).

o **Peer marking and feedback**: provide clear assessment criteria and possibly model answers to students provide opportunities for students to mark each other's (anonymous) work and provide full written feedback. This not only helps the individual receiving the feedback, but also moves the learning from the assessing student, to a higher level. It is not uncommon to find that students mark each other much "tougher" than you might ever consider, so do remind them of the need to mark the work, not the student and to be respectful and careful of each other.

o **Individual verbal feedback:** most suitable for thesis type assessment, which includes PhD progress feedback, or feedback on project work. In many ways, this is the individual tutorial on which university learning once used to depend.

o **Grouped needs-**led feedback: students are grouped by their need for feedback on particular content or learning. Feedback is then delivered to those students who have had difficulty with the same problem(s) as a group. With this type of feedback some students may find themselves in more groups than one, and may self select or be selected for particular groups. This method is particularly suitable where feedback on complex learning and content is required.

o **Marking schemes:** using a checklist of assessment criteria, onto which the feedback for student is written, allows students to receive their feedback in a very structured manner. A blank comment box should always be added to marking scheme forms, so

as to allow for individual feedback where necessary.

- **Co-grading:** one of the best kinds of feedback and the most direct form possible. The student and the assessor mark the work together, so that feedback and explanation of marking decisions are given immediately. In Arts and Architecture subjects fro example, the assessment method of the 'Critique' is often used, which – if verbal – can take the form of co-grading.

- **On line feedback conferences:** by providing a generic feedback form online, student can be enabled to discuss further solutions to the learning problems they have encountered. The considerable advantage is that students can return to their peer feedback discussions at a later stage. Such techniques work well when developing intellectual discipline skills (programming, lab work, design drawing etc.)

Which type of feedback is chosen, depends on a number of different contextual factors. Some types of feedback fit better with specific types of assessment than others. Peer, self, grouped needs feedback, co-marking and class marking are likely to be more appropriate for formative assessments, whilst marking schemes, feedback statement banks and individual verbal feedback are more commonly – but not exclusively – associated with summative feedback.

Often there is value in using different feedback (or indeed assessment) methods throughout the learning experience of a student. It may benefit the student to consider the improvement of their learning from different angles, provided by different forms of feedback.

An important factor is the workload on both students and staff, and some effective approaches to deal with that aspect are set out below:

5.5 Possible ways to reduce feedback load but provide effective feedback.

- Provision of a set of **model answers**, annotated with key comments on why these answers are both appropriate and excellent, with explanation on common mistakes made. Reference to these should be provided to individual feedback to students.

- Use **feedback statement banks or reports**.

- Use **marking schemes** or assignment return forms as there are sometimes referred to by assessors. Combined with the use of a feedback statement bank, this can speed up marking and feedback provision tremendously, but this carries the risk of impersonal feedback.

- Use in-class feedback to a whole group of students, thereby highlighting and providing feedback on common problems made. This should only be used for part of a unit or module's overall assessment. Important to note here, that if there are some individual elements to be fed back that this might not be the most effective mechanism.

- Consideration of the use of peer (marking) and feedback. This can be remarkably effective in providing critical but positive feedback to students.

- **Self assessing during a summative assessment:** using the principles of self assessment, you invite students to self assess their work before handing it in. You will then still need to assess the work, but you will find it works a lot faster, whilst student have already benefited from direct feedback and reflection.

- **Consider using and setting up electronic assessment and feedback mechanisms.**

It is important to provide feedback to the learner and the development of a strategy to fulfill this is encouraged bearing in mind having a balance between maintaining and providing quality feedback while at the same time coping with the required academic loading.

Section 6: Reflective Practice

While not a main focus of this handbook, it is however important to spend some time on the concept of reflective practice. The importance of reflecting in action while you are engaged in doing something and reflecting on what you are doing, as part of any learning process, has been emphasised by many investigators and is increasing feature of professional training programmes. In education, it refers to the process of the educator studying his or her own teaching methods and determining what works best for the students. Methods such as Portfolios, ePortfolios, learning contracts/agreements and reflective diaries and logs are increasingly being used to encourage reflective practice. Citing critical incidents or incremental changes in practice have started to become part of the assessment process in the move away from capturing the assessment product moves towards the learning process.

For a short tutorial on reflective writing have a look at this online resource.
http://www.rlo-cetl.ac.uk:8080/rlo/reflective_writing/reflective_writing.html
Jenny Moon's website also provides some useful guidelines
http://www.services.ex.ac.uk/cas/employability/students/reflective.htm

Reflective practice can be a beneficial process, to both learner and the teacher. Boyer (1990) makes the point that teaching is about learning and is not just some routine function and it is the role of the teacher/lecturer to teach for understanding and so reflection is an important aspect of the work of academics. Good educational practitioners constantly, often sub-consciously, consider how effective they are, how they can improve and provide a more meaningful learning experience for their students. Donald Schön (1986) introduced the concept of reflective practice as a critical process in refining one's artistry and craft in a specific field. Reflective practice of teaching should combine the Schön process of reflective practice with Dewey's argument on reflective thought, 'the kind of thinking that consists in turning a subject over in the mind and giving it serious and consecutive consideration' (Dewey:1933:3-16).

Most academics have a good sense of what is good practice in learning and teaching often based upon personal experience but now increasingly supported through an expanding body of educational research. The importance of reflective practice, as an essential component of all teaching and all learning, is fundamental. It gives the teacher/lecturer a deeper understanding of their own teaching style. By gaining a better understanding of their own individual teaching styles teachers/lecturers, in turn, can improve their effectiveness in providing students with, as Rogers suggests, an environment in which we can learn. The emergence of teaching portfolios, as a means of documenting teaching practices which encourages critical self-reflection have

begun to take effect in some higher-educational institutions in Ireland. The DIT annual awards for Excellence in teaching for example are based on the model of the teacher as reflective practitioner and are designed to evidence this approach as part of the reviewing process.

It is proposed over time to add to this section of the booklet/website, in particular to provide examples and links to best practice in reflective practice.

Section 7: The future for assessment: drivers for change

7.1 Resourcing implications of supporting an increasingly diverse student population:

Assessment is a significant key cost in Higher Education. Most institutional learning, teaching and assessment strategies seek to adopt a student centred approach with many emergent and increasingly available technologies being seen as one option to help achieve this vision (see, Nicol & Milligan, 2006). Research evidence demonstrates that assessment processes determine largely what students see as being important, how they decide to allot their time, and how in general they understand the nature of their role as students (see eg Gibbs and Simpson, 2004) While current best practice assessments would seek to be appropriate, timely, relevant, fair, valid, and accessible to an increasing diverse student population are new assessment methods including those using ICTs helping us to achieve these parameters any more effectively or efficiently? If not, how might our assessment practices be improved.

Most third level institutions support a VLE and an increasing number have dedicated staff to support eLearning development. The UK JISC eAssessment roadmap (2007) highlights 'the potential of eAssessment to significantly enhance the learning environment and the outcomes for students, in a wide range of disciplines and applications'. Perceived potential increases in student retention, enhanced quality of feedback, flexibility for distance learning, strategies to cope with large student/ candidate numbers, objectivity in marking and more effective use of virtual learning environments are also cited as benefits of moving to technology supported assessments (JISC, 2007).

In a study conducted over a 10 year period Black and William (1998) demonstrated that assessments focussing on generating and encouraging use of feedback were most effective in supporting 'learning gains'. (Boud, 2000) also proposes that through a frontloading process to develop a sustainable assessment practice, assessment can be used to actively encourage the development of student lifelong learning skills. Various online assessment methods can provide additional support mechanisms to assist in this process.

7.2 Changing assessment practice?

New technologies such as broadband, mobile technologies do offer the possibility for new personalised learning environments, but with each new development opportunity often comes

an associated challenge: 'high stakes assessments' have to be supported by new accessible, secure and reliable systems to address issues such as plagiarism. Resources will need to be reallocated, appropriate training and support infrastructures put in place if this vision is to be achieved effectively: a cultural change towards a truly learner centred approach.

Recent HEA funding promises a Change agenda for teaching learning and assessment in Ireland including eLearning. This aims to build upon, develop and share existing best practice between institutions. There is evidence that assessment practice is slowly changing and that there are best practice models from which to learn, however for this funding model to be successful in achieving effective change it needs to be not led by these new technologies but pedagogically driven and at a level that encourages positive, constructive involvement from all stakeholder groups.

Appendix 1: Assessment Checklist

• Are the aims and learner outcomes of the module clear?	
• Would attainment of these learner outcomes mean that the aims of the module have been achieved?	
• Are the assessment criteria for this module clear and explicit?	
• Are all the appropriate learning outcomes assessed?	
• Does the assessment scheme enable students to obtain feedback on major elements of the module?	
• Is each assessment method or task appropriate?	
• Is the marking scheme likely to be reliable?	
• Is the assessment task efficient?	
• Have you performed an analysis of the assessment results?	

Appendix 2: Planning assessment for course documents – what to consider

Is the assessment aligned with the aims?	
Is the assessment aligned with the learning outcomes?	
Is the assessment aligned with the teaching methods?	
Are the methods of assessment chosen appropriate?	
Are the methods of assessment varied?	
Is formative assessment used?	
Are you clear on what exactly is being assessed?	
Do the assessments fall within the program assessment requirements?	
Are progression issues dealt with?	
Are award classifications clear? How will assessments be marked (pass/fail/grade/feedback etc)?	
Have you considered the possibility of group or peer assessment?	
Do the assessments meet the individual needs of students with disabilities?	
Have you written a clear assessment criterion, or appropriate scoring grids?	
Have you considered evaluation strategies to on reflect on assessment?	

Appendix 3: 34 strategies for developing effective on-line assessment

Together these thirty-four strategies can be summarised into three checklists:
- An access and usage checklist
- A quality of teaching and learning checklist
- A technical and administrative checklist.

Access and usage checklist

1) Has any inherent unfairness if some students are less familiar with computer use than others (for example, some international students and some older students) been avoided?

2) While most students have access to computers at home, some do not – does the design of the task ensure that this latter group is not disadvantaged?

3) Is student access to assessment tasks and related material assured?

4) Has the potential issue of using the on-line medium as the principal or sole vehicle for assessment, thereby disadvantaging or excluding some learners, (Morgan and Reilly, 1999) been avoided?

5) Has the potential issue of significant financial costs associated with external access to university computer networks been addressed?

6) Has the potential issue of access to on-campus university computers been addressed? "It's very time consuming to travel to uni and line up to get a computer"

7) Has equity been ensured in relation to the cost of students printing large amounts of material?

8) Have appropriate educative resources been made available to address the issue of ICT skills?

9) Does the on-line assessment assess anything that can't be assessed as well (or more effectively) in a traditional format ?

10) Have greater opportunities been provided for students to practise their knowledge and skills than are available in traditional formats?

11) Has the highly valued and expected flexibility of time-of-day access, pace of work and time spent on task been incorporated?

12) Have the opportunities for diagnostic, continuous, case-based and/or formative assessment of student learning been taken?

13) Is student learning related to subject content knowledge, understanding and skills being assessed rather than, or in addition to, ICT skills?

14) If relevant, have opportunities for students to demonstrate creativity in their submissions, which is possible with other forms of assessment, been incorporated?

15) Where necessary, is the approach chosen to verify individual student performance/submission reliable?

16) Has the opportunity to plagiarise been eliminated or at least minimised?

17) Has the tendency, particularly where automated responses are incorporated, to focus on lower level cognitive skills been avoided or at least, supplemented with assessment of higher order learning?

18) Are mechanisms to enable rapid feedback both to and from the students included?

19) Are examples of model assignments/exam answers on the web for student access, consideration and discussion?

20) Have practice on-line exams in the same format as the real exam been provided so students can prepare adequately?

21) Are all answers able to be changed by the student up until the point where the test is submitted?

22) Have question banks and random selection of items been used, where appropriate?

23) Have dynamic on-line test questions that are in themselves learning experiences been provided, incorporating rich information and activities through the use of interactive images, sound and text?

24) Have robust evaluation strategies that produce diagnostic, formative feedback on the success of on-line assessment been integrated into planning and development?

25) Has student feedback (including on-line discussion boards) been used for reflection on the content and quality of the discussion, as part of examination of teaching practices?

26) Has interference to the on-line assessment from scheduled maintenance periods been planned for?

27) Has the system been kept as local as possible so that reliance on large (less reliable) networks is minimal?

28) Will the difficulties that some students have with passwords, access, usage and related issues be adequately managed by the system?

29) Have management systems been put in place to deal with student difficulties with matters unrelated to on-line assessment that they will attempt to solve through on-line systems (email, discussion boards etc)?

30) Where a range of computers and software packages are in use among students and staff, has the potential issue of compatibility and readability of files containing assignments that are submitted electronically been planned for?

31) Have simple but time consuming matters, such as students forgetting to put their names on electronically submitted assignments, been planned for?

32) Has adequate technical support during the development and use of on-line exams been ensured?

33) Have emergency backup procedures been put in place?

34) Has the server containing the exam questions been isolated from the internet in order to maintain security?

35) Is the server reliable?

Appendix 4: Sample assessment criteria

The following rubric will be used to assess your literature review:

Criteria and qualities	Poor	Good	Excellent	Point Value
Introducing the idea: Problem statement	Neither implicit nor explicit reference is made to the topic that is to be examined.	Readers are aware of the overall problem, challenge, or topic that is to be examined.	The topic is introduced, and groundwork is laid as to the direction of the report.	Up to 10 points
Body: Flow of the report	The report appears to have no direction, with subtopics appearing disjointed.	There is a basic flow from one section to the next, but not all sections or paragraphs follow in a natural or logical order.	The report goes from general ideas to specific conclusions. Transitions tie sections together, as well as adjacent paragraphs.	Up to 20 points
Coverage of content	Major sections of pertinent content have been omitted or greatly run-on. The topic is of little significance to the educational/training field.	All major sections of the pertinent content are included, but not covered in as much depth, or as explicit, as expected. Significance to educational/training field is evident.	The appropriate content in consideration is covered in depth without being redundant. Sources are cited when specific statements are made. Significance is unquestionable. The report is between 1,000 and 2,000 words.	Up to 20 points
Clarity of writing and writing technique	It is hard to know what the writer is trying to express. Writing is convoluted. Misspelled words, incorrect grammar, and improper punctuation are evident.	Writing is generally clear, but unnecessary words are occasionally used. Meaning is sometimes hidden. Paragraph or sentence structure is too repetitive.	Writing is crisp, clear, and succinct. The writer incorporates the active voice when appropriate. The use of pronouns, modifiers, parallel construction, and non-sexist language are appropriate.	Up to 20 points
Conclusion: A synthesis of ideas and hypothesis or research question	There is no indication the author tried to synthesize the information or make a conclusion based on the literature under review. No hypothesis or research question is provided.	The author provides concluding remarks that show an analysis and synthesis of ideas occurred. Some of the conclusions, however, were not supported in the body of the report. The hypothesis or research question is stated.	The author was able to make succinct and precise conclusions based on the review. Insights into the problem are appropriate. Conclusions and the hypothesis or research question are strongly supported in the report.	Up to 10 points
Citations/References: Proper APA format	Citations for statements included in the report were not present, or references which were included were not found in the text.	Citations within the body of the report and a corresponding reference list were presented. Some formatting problems exist, or components were missing.	All needed citations were included in the report. References matched the citations, and all were encoded in APA format.	Up to 10 points

From: http://edweb.sdsu.edu/Courses/Ed690DR/grading/literaturereviewrubrique.html

Appendix 5: A compulsory examination for all assessors

A compulsory examination for all assessors

Answer all questions. This examination is un-timed. Consultation with others (including students) and reference to texts and other sources is RECOMMENDED.

1. What intended learning outcomes do you assess? How well does your approach to assessment align with these outcomes?

2. Justify and criticize your choice of assessment methods and tasks used to assess the outcomes in question 1.

3. Refer to relevant research on assessment in your answer.

4. Describe, justify and criticize your use of criteria, methods of grading and/or marking.

5. Outline and justify your approach to providing feedback to students. Refer to relevant research in your answer.

6. With reference to research findings, describe, justify and criticise your marking techniques to overcome the following:
a) variations in standards on a single occasion;
b) variations in standards on different occasions;
c) variations between assessors;
d) differences in students' handwriting.

7. How do you ensure that your standards are similar to standards adopted in comparable assessments and examinations?

8. What values underlie your approach to assessment in higher education? How are they manifest in your practice?

Evaluate your answers to questions 1–7.

Reproduced from:
George Brown, (2001), "Assessment: A Guide for Lecturers", LTSN Generic Centre, Assessment Series No.3.

Appendix 6: Glossary of assessment terms

Assessment: Assessment can be defined as the systematic and ongoing method of gathering, analyzing and using information from measured outcomes to improve student learning in terms of knowledge acquired, understanding developed, and skills and competencies gained.

Benchmark: A description or example of candidate or institutional performance that

serves as a standard of comparison for evaluation or judging quality.

Criterion-referenced marking – This means that student achievement is measured against a set of criteria such as those linked to the learning outcomes for a specified task/test.

Course Embedded Assessment: Reviewing materials generated in the classroom. In addition to providing a basis for grading students, such materials allow lecturers to evaluate

approaches to instruction and course design.

Diagnostic assessment – assessment designed to identify skills, knowledge and other attributes which can be used to decide on specific pathways of study, or difficulties in learning which require support.

Exemplar – this refers to an example of a completed assignment which is used to illustrate the assessment requirements(criteria) and marking standards.

Feedback – Information provided to learners about their work and progress.

Formative evaluation/assessment: Improvement-oriented assessment which is not marked for summative purposes.

Indirect Measures of Learning: Students are asked to reflect on their

learning rather than to demonstrate it. Examples include: exit surveys, student

interviews (e.g. graduating seniors), and alumni surveys.

Institutional Effectiveness: The measure of what an institution actually achieves.

Key skills - this refers to a broad range of generic skills required for learning and employment. It includes communications skills, use of number, information technology, working with others, managing own performance, and problem solving.

Learning hours - The notional learning times or study hours that it is expected a learner will need to spend to complete a programme/module including taught sessions, independent learning and completing assessment. It is often presented as ECTS credits.

Learning Outcomes Observable behaviors or actions on the

part of students that demonstrate that the intended learning objective has occurred. Used to express intended results in precise terms.

Marking scheme – this is prepared by applying the grade descriptors for the appropriate level to the specific assessment criteria for an assignment, and can be presented in the form of a matrix.

MCQ - Multiple choice questions.

Measurements: Design of strategies, techniques and instruments for collecting feedback data that evidence the extent to which students demonstrate the desired behaviors.

Methods of Assessment: Techniques or instruments used in assessment.

Moderation - A process that ensures that grades awarded are fair and reliable and that marking criteria have been applied consistently and fairly.

Modifications: Recommended actions or changes for improving student learning, service delivery, etc. that respond to the respective measurement evaluation.

Norm referenced marking – This measures a student's performance in relation to his/her cohort. The grade awarded depends not only on the quality of a student's work but also on the quality of others' performance.

Performance Assessment: The process of using student activities or products, as opposed to tests or surveys, to evaluate students' knowledge, skills, and development. Methods include: essays, oral presentations, exhibitions, performances, and demonstrations. Examples include: reflective journals (daily/weekly); capstone experiences; demonstrations of student work (e.g. acting in a theatrical production, playing an instrument, observing a student teaching a lesson); products of student work(e.g. Art students produce paintings/drawings, Journalism students write newspaper articles, Geography students create maps, Computer Science students generate computer programs, etc.).

Plagiarism – Cheating in an assessment by using ideas or words from other authors without explicitly acknowledging the source of the information in the appropriate way.

Portfolio: An accumulation of evidence about individual proficiencies, especially in relation to learning standards. Examples include but are not limited to: Samples of student work including projects, journals, exams, papers, presentations, videos of speeches and performances.

Quantitative Methods of Assessment: Methods that rely on numerical scores or ratings. Examples: Surveys, Inventories, Institutional/departmental data,

departmental/course-level exams (locally constructed, standardized, etc.).

Qualitative Methods of Assessment: Methods that rely on descriptions rather than numbers. Examples: Ethnographic field studies, logs, journals, participant observation, and open-ended questions on interviews and surveys.

Reliability: Reliable measures are measures that produce consistent responses over time.

Revision – Preparation by students for an examination

Rubrics: (Scoring Guidelines) Written and shared for judging performance that indicate

the qualities by which levels of performance can be differentiated, and that anchor judgments about the degree of achievement.

Student Outcomes Assessment: The act of assembling, analyzing and using both quantitative and qualitative evidence of teaching and learning outcomes, in order to examine their congruence with stated purposes and educational objectives and to provide meaningful feedback that will stimulate self-renewal.

Summative evaluation/ assessment: Accountability-oriented assessment. The use of data assembled at the end of a particular sequence of activities, to provide a macro view of teaching,

learning, and institutional effectiveness.

Teaching-Improvement Loop: Teaching, learning, outcomes assessment, and improvement may be defined as elements of a feedback loop in which teaching influences learning, and the assessment of learning outcomes is used to improve teaching and learning.

Test – An assessment task taken in semi-controlled conditions such as an in-class or online test, usually of a relatively short duration.

Validity: As applied to a test refers to a judgment concerning how well a test does in fact measure what it purports to measure.

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