ASSESSMENT POLICY and PRACTICE
University of Strathclyde

Introduction

This document presents the final output from the Assessment Working Group (AWG) formed by Academic Committee to review the University's Assessment Policy and Practice. The AWG began its work by stepping back to examine what the University of Strathclyde's aspirations for assessment should be; why are we assessing students' learning and what do we hope to achieve? The result has been a greater emphasis on '*assessment for learning*' than on '*assessment of learning'*; that is, there is a stronger focus on how assessment might be used to develop in students the skills and attitudes for critical thinking and independent and lifelong learning than on the technicalities and issues surrounding the marking and grading of student performance.

As Sadler (1998) has noted:

> *…the intention of most educational systems is to help students not only grow in knowledge and expertise, but also become progressively independent of the teacher for lifelong learning. Hence, if teacher supplied feedback is to give way to self-assessment and self-monitoring, some of what the teacher brings to the assessment act must itself become part of the curriculum for the student, not an accidental or inconsequential adjunct to it (p82)*

This document provides a blueprint for the realignment of assessment practices so that they help develop in students the ability to make evaluative judgements about their own learning and to become self-directed learners. It also suggests ways in which assessment practices can help students to become fully engaged members of scholarly learning and disciplinary communities.

Guide to Readers

The document is divided into three sections and one Appendix. *There is a separate set of Recommendations for Academic Policy Committee*.

Section 1 begins with an outline of the scope of the work of the AWG. There is a brief discussion of the background context to this work and its relationship to the University's Academic Strategy and Strategic Plan, the new QAA Code of Practice for Assessment of Students and the Re-engineering Assessment Practices (REAP) project led by the University of Strathclyde. However, the bulk of this section is the presentation of ***Twelve Principles of Good Assessment Practice*** in relation to the development of independence or autonomy in learning. Each principle is described and its rationale presented. There is a substantial body of research evidence in support of each principle but this has not been provided. Instead the intention has been to try to produce a clear document that would be accessible to readers from any discipline and that does not use unfamiliar educational terminology. Those interested in the research should refer to www.reap.ac.uk

Section 2, ***Examples across the Disciplines***, builds on Section 1. It provides numerous examples of how the assessment principles have been implemented across a range of disciplines, some drawn from Strathclyde or the REAP project and others from published research or from other HE institutions.

Section 3 provides a set of ***Guidelines for Implementation***. These guidelines offer advice about how to implement the assessment and feedback principles in classes, courses and programmes. They are intended for teachers, course leaders and faculty officers, Heads of Department and the Vice-Deans Academic. This section includes a discussion of the National Student Survey (NSS) and levels of student involvement in module redesign.

Appendix 1 provides information about the **Remit and Membership** of the Assessment Working Group.

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February 14th 2008

SECTION 1

ASSESSMENT POLICY and PRACTICE

Twelve Principles of Good Assessment Practice

Assessment practice has been changing over the last ten years due to increased numbers of students, larger class sizes, modularization, new teaching and learning methods, accessibility legislation, technological developments, new research findings on the conditions underpinning student success in HE and changes in QAA guidelines. These developments and internal changes at strategy level and in procedures and practices within the University of Strathclyde highlighted a need to review the University policy on assessment.

In January 2007 a Working Group on Assessment (AWG) was formed by Academic Committee with a remit to review assessment policy and practices in consultation with academic staff. The Assessment Working Group has membership from across the faculties, a representative from the Academic Office and includes a student representative and an external advisor. The group met nine times between January 2007 and February 2008. In addition, wider consultation about the developing work of the group were enabled through discussions within the Faculties and with the Student Association (led by AWG members) and through two Learning Enhancement (LEN) events. The main activity of the AWG has been to define '*excellence in assessment*' by developing a set of *twelve principles of good assessment practice*. These principles focus on the role of assessment in helping students to learn, develop and become independent and lifelong learners.

This document presents the outcomes of all consultations to date. The principles of good assessment practice that are defined draw on published research on assessment in higher education, the QAA Code Practice on Assessment of Students (QAA, September 2006) and the findings from the Re-engineering Assessment Practices (REAP) project and internal and external consultations. Quality assessment is broadly defined as assessment that supports the development of independence or autonomy in learning. The assessment principles should help guide departments/faculties in thinking about assessment when they formulate their own teaching, learning and assessment strategies. In Section 2 there are numerous examples of good practice in assessment related to the principles drawn from Strathclyde and elsewhere. It is hoped that academic staff will contribute further examples and help the University develop and share a range of examples of implementation from across the disciplines.

The Mission and Academic Strategy 2006-2009

The mission of the University of Strathclyde is to be a place of 'useful learning' where students are provided with an educational experience that 'creates confident, motivated and self-directed learners' and that prepares them for 'a particular career or discipline'. In the current Academic Strategy 2006-2009 there is a strong commitment to the development of learner independence, to flexible delivery and to the promotion of learning communities. The Academic Strategy specifically states that through its learning, teaching and assessment processes it will promote:

- positive motivational beliefs and self-esteem in students
- active and enquiry-based learning
- tutor and peer dialogue and interaction
- learning communities amongst students and staff
- the development of self-assessment (and reflection) in learning
- feedback that is timely, constructive and that can be acted upon
- a cycle of continuous improvement in learning, teaching and assessment

Assessment has a key role in helping enact the mission of 'useful learning' and in turning the ideas in the Academic Strategy (2006-9) into effective practices.

Definitions and Purposes of Assessment

In higher education, assessment describes any process that involves evaluating or appraising a student's knowledge, understanding, skills, attitudes or abilities. In line with the QAA Code of Practice for Assessment of Students (2006) in higher education, assessment is taken to be an integral component of teaching and learning serving multiple purposes. Assessment can be used to enhance student learning (assessment for learning) as well as to judge and certify learning achievements (assessment of learning). This broad scope recognises that assessment is an act of learning and that there are different sources of assessment and feedback information, each influencing learning in qualitatively different ways – peers, self, tutors and those external to the course. When students work in groups they often get feedback from each other (peer feedback). If carefully structured (e.g. through appropriate monitoring) this feedback can supplement that provided by teachers and it can also model experiences in employment.

In some courses students might also be asked to evaluate each other's work (peer assessment). While engaging in assessment tasks students routinely generate their own feedback by reflecting on and self-assessing their progress. This feedback is also integral to the learning process. But students differ in their degree of awareness of such processes, many of which are tacit. However, awareness can be raised and the generation of inner feedback strengthened through formal procedures such as requiring students to self-assess their work before an assignment submission or to reflect on their strategies they use during a task or to reflect back on their work, for example, to compile a portfolio. Students might also be asked to comment on, or mark, each other's work (peer assessment) so as to develop objectivity in evaluative judgements. Developing the skills to monitor, manage and self-assess learning is a key requirement in the professions and for lifelong learning.

Enabling conditions for effective assessment

It is assumed in this document that the following basic conditions should underpin the formulation of any assessment policies and procedures at faculty/departmental level:

- Expected learning outcomes have been defined for courses and programmes (QAA requirement).
- There is clear alignment between the expected learning outcomes, what is taught and learned and the knowledge and skills assessed thus ensuring validity.
- There is variety and complexity in assessment methods appropriate to the learning outcomes (e.g. essays, problem-based, portfolios)
- Class (or module) assessment is integrated into an overall plan for course assessment: this is particularly challenging in modular systems.

- There is a progression in the complexity and demands of assessment requirements in later years of courses.
- Plagiarism is minimised through careful task design, explicit education and appropriate monitoring of academic honesty.
- Steps are taken to ensure that assessments are fair and reliable (e.g. through procedures such as anonymous marking and through taking into account learning disabilities).

More work might be required at class, departmental and faculty level, institutional level to ensure that these conditions are realised.

Managing Workload

As student numbers increase so does the staff burden of assessing students' work and providing useful feedback. One way forward is to increase the efficiency of traditional assessment and feedback practices by streamlining them and by harnessing new technologies. A complementary approach is to redefine the roles of teachers and students in assessment processes. Instead of viewing assessment as a teacher enacted process, the argument in this paper is that students and teachers should share responsibility for assessment processes. In this document, the vision is that over the course of an undergraduate degree, students will develop the capacity to self-assess, reflect on and manage their own learning. Taking this perspective will in the long-term lead to a more efficient use of scarce resources especially if the attitudes and skills for independence in learning are fostered in students in the early years. The REAP project led by the University of Strathclyde has shown that both learning and efficiency gains are possible by using online tutoring systems (pharmacy, mechanical engineering) and by utilising the power of WebCT to manage group working and teacher feedback processes (psychology, marketing). A key point of note from all the REAP case studies, however, was that increased efficiency was leveraged from the technologies only when they were used in contexts where there were clear pedagogical goals (e.g. a focus on developing learner autonomy) and where implementation was based on a coherent set of assessment and feedback principles backed by research.

Assessment principles for student success at University

The twelve principles in Table 1 represent a useful framework for thinking about assessment in relation to the Academic Strategy (2006-9). These principles are based on recent research on assessment (Yorke, 2001: Nicol & Macfarlane-Dick 2004, 2006: Nicol, 2007, 2008, in press: Boud, 2000: Knight, 2006: Knight and Yorke, 2003: Boud and Falchikov, 2007), current practices at the University of Strathclyde and published studies of University policies and practices that are associated with high levels of student success (Kuh, Kinzie, Schuh and Whitt, 2005: Tinto, 1993, 1997, 2005: Chickering and Gamson, 1997). Overall, these studies suggest that independent and lifelong learning, and academic and social integration, are enhanced when assessment practices take account of the ideas expressed in Table 1.

Table 1: Principles of good assessment and feedback practice.

1. **Help clarify what good performance is (goals, criteria, standards).**
   To what extent do students in your course have opportunities to engage actively with goals, criteria and standards, before, during and after an assessment task?
2. **Encourage 'time and effort' on challenging learning tasks.**
   To what extent do your assessment tasks encourage regular study in and out of class and deep rather than surface learning?
3. **Deliver high quality feedback information that helps learners self-correct.**
   What kind of teacher feedback do you provide – in what ways does it help students self-assess and self-correct?
4. **Provide opportunities to close any gap between current and desired performance**
   To what extent is feedback attended to and acted upon by students in your course, and if so, in what ways?
5. **Ensure that summative assessment has a positive impact on formative learning**
   To what extent are your summative and formative assessments aligned and supportive of the development of valued qualities, skills and understanding?
6. **Encourage interaction and dialogue around learning (peer and teacher-student).**
   What opportunities are there for feedback dialogue (peer and/or tutor-student) around learning and assessment tasks in your course?
7. **Facilitate the development of self-assessment and reflection in learning.**
   To what extent are there formal opportunities for reflection, self-assessment or peer assessment in your course?
8. **Provide opportunities for choice in the topic, method, criteria, weighting or timing of assessments.**
   To what extent do students have choice in the topics, methods, criteria, weighting and/or timing of learning and assessment tasks in your course?
9. **Involve students in decision-making about assessment policy and practice.**
   To what extent are students in your course engaged in consultations regarding assessment decisions?
10. **Support the development of learning groups and learning communities**
    To what extent do your assessment and feedback processes help encourage social bonding and the development of learning communities?
11. **Encourage positive motivational beliefs and self-esteem.**
    To what extent do your assessments and feedback processes enhance your students' motivation to learn and be successful?
12. **Provide information to teachers that can be used to help shape their teaching**
    To what extent do your assessments and feedback processes inform and shape your teaching?

In Table 1, under each principle there is a question intended to stimulate thinking about assessment practices in courses and programmes. Assessment in this context is broadly defined to include teacher, peer and self-assessment and feedback processes both formal and informal. Looking down this list from 1-10, there is intuitively some ordering with the application of the principles calling for increasing levels of learner autonomy, and an increased sharing of responsibility for learning with students. However, as will be shown below, the way the principles are implemented is as important to the development of autonomy as the principles themselves (see also, Section 3: Guidelines for Implementation). Principle 11 and 12 are somewhat different. Principle 11 is about the affective and motivational aspects of assessment whereas Principle 12 is about the teacher's role in using assessment information to inform and shape teaching. These principles are separate from but inform all the others during implementation.

Below a brief explanation for each principle is provided. In Section 2: Examples across the Disciplines there are ideas about how these principles might be implemented in different disciplinary contexts.

The twelve principles of good assessment and feedback practice

1. Clarify what good performance is (goals, criteria, standards)

Under-performance in assessment tasks has been linked to a lack of clarity regarding expectations. Students often do not understand assessment requirements even when they are provided with documents with definitions of criteria and standards. This influences the goals students set themselves and the outcomes they achieve. More time spent by students in identifying, discussing or even re-formulating criteria in their own words has been shown to elevate performance, particularly in open-ended tasks. This can be done at the planning stage but it is also helpful if students are encouraged to revisit goals, criteria and expected standards while carrying out extended tasks such as projects and laboratory work.

The more students actively engage with goals, criteria and standards the more likely they are to internalise them and to be able to use them to regulate their own learning. For example, having students before an assignment (individually or in groups) examine completed assignments from a previous student cohort to identify which is superior and why (criteria) would generally be more effective than just providing students with a printed list of criteria or even just examples of the kind of work required. Concrete representations of standards (e.g. many exemplars at each level of performance) are especially helpful where learning tasks are complex and multidimensional and where criteria are tacit and difficult to express with verbal descriptions. Explicit standards help make assessment processes transparent to students but they also help improve reliability and fairness when teachers engage in marking.

In some scenarios, where creativity or the ability to solve open-ended problems is valued, tightly specified goals or outcomes in advance may be inappropriate: for example, in engineering or design where the student is required to identify the problem and then provide a solution. However, it is still important that the teacher shares his/her intentions with the student about the nature of the assignment and actively engages them in making their own judgements about what would constitute quality.

> The key question to ask here is: *To what extent do students in your course have opportunities to engage actively with goals, criteria and standards, before, during and after an assessment task?*

2. Encouraging ‘time and effort’ on educationally purposeful tasks

It has been shown that - if students spend time studying in and out of class on a regular basis, if their in-class and out of class activities are inter-related and if they allocate time across the module rather than bunch all their work at the end - they are more likely to be successful in their studies. This is especially true in the first year where regular study helps acculturate students to the requirements of university study. Learning tasks, the basic element of a planned curriculum, are one way of encouraging this kind of balanced study pattern. Tasks should be distributed across the module, challenge students and encourage a ‘deep approach to learning’ rather than a surface approach characterised by memorisation.

Spreading activities out through learning tasks provides opportunities for early and regular feedback. Learning tasks are important because they always engage

students in assessment and feedback processes of some kind (e.g. self-assessment, self-generated feedback, discussions with peers), even if these tasks don't carry marks. However, making learning tasks compulsory or awarding minimal marks (i.e. low stakes assessment) is usually necessary to ensure student engagement and to ensure that teachers are able to ascertain what progress is being made before providing feedback. This is different from frequent high stakes assessment tasks (which carry high marks), which can result in high tutor workloads, high levels of student stress and the inhibition of student experimentation. Regular tasks also provide tutors with warning of when students experience difficulty thus allowing them to organise additional support.

Small tasks or large tasks broken down into component parts may however be necessary in order to manage tutor workload where marking is involved. Workload can also be managed by making learning tasks compulsory (but without marking) or by using pass-fail categories rather than specific marks and by providing feedback to groups rather than individuals. Another technique is peer feedback but this might have to be monitored by tutors. One problem with small assessment tasks is that they can fragment the learning experience and undermine the synthesis of concepts and ideas, or of theory with practice, associated with deep learning. Many teachers deal with this issue by requiring students to produce a final submission that integrates the component ideas or skills developed through the earlier smaller learning tasks.

> The key question here is: *To what extent do your assessment tasks encourage regular study habits and productive learning activities?*

3. Deliver high quality information to students about their learning (to help them self-assess and self-correct)

Teacher feedback is a source against which students can check their understanding of assessment requirements, criteria and standards. Through feedback students should learn from their mistakes and misconceptions and build on achievements. Over time, teacher feedback should help students to develop accurate perceptions of their abilities and to establish internal standards with which to evaluate their own work. However, the quality of teacher feedback has been criticised in more than one in ten QAA audit reports in the UK and this is the main area where problems have been identified in the UK National Student Survey (NSS). Research shows that a great deal of teacher feedback given to students is delayed (e.g. feedback on the first assignment is not given until after the second assignment is due), is not understood, is de-motivating and does not provide any guidance for future action.

Good quality teacher feedback should ultimately be geared to helping students learn to trouble-shoot and self-regulate their own performance. It should be timely –ideally it should be available when students are 'stuck', when it will have maximum impact and in time to improve subsequent assignments. Other approaches known to enhance the power of teacher feedback include linking it to stated assessment criteria, providing corrective advice not just information on strengths and weaknesses and by prioritising areas for improvement. There is evidence that 'feed-forward' information is more effective than feedback information to students: such information does not just tell students where they went wrong but tells them what to focus on to make improvements in subsequent tasks. The latter helps stimulate transfer of learning to new problems.

Feedback can be provided on different aspects of performance: on the task or product (e.g. whether the work is correct or incorrect); on the process (e.g. the strategies used to create the product); on the way students evaluate their own learning (e.g. their ability to reflect or self-assess); and on the person (personal evaluations of the learner). The last of these is the least effective and can have a negative impact on learning. The second and third types of feedback are powerful in terms of encouraging deep processing, mastery and transfer of learning.

> The key question here is: *What kind of teacher feedback do you provide – in what ways does it help students self-assess and self-correct?*

4. Provide opportunities to close any gap between current and desired performance

> '*The only way to tell if learning results from feedback is for students to make some kind of response to complete the feedback loop (Sadler, 1989). This is one of the most often forgotten aspects of formative assessment. Unless students are able to use the feedback to produce improved work, through for example, re-doing the same assignment, neither they nor those giving the feedback will know that it has been effective*' (Boud, 2000, p158).

In higher education most students have little opportunity to use directly the feedback they receive to close the gap and make performance improvements, especially in the case of planned assignments. Greater emphasis should be given to providing feedback on work in progress (e.g. essay structures, plans for reports, sketches) and to engaging students in reflecting and acting on the feedback they do receive (e.g. by formulating an action plan for future work). However, this approach will have an effect on summative assessment practices: for example, it will be necessary to devise ways of testing what students are able to do in the absence of tutor help. One way of doing this would be in an exam where students apply the knowledge they have gained in a new context.

> The key question here is: *To what extent is feedback attended to and acted upon by students in your course, and if so, in what ways?*

5. Ensure that summative assessment has a positive impact on formative learning.

It has been argued that summative, rather than formative, assessment has the largest impact on student learning. Firstly, summative assessment, whether by coursework, final examination or a combination of the two, strongly influences what knowledge and skills are given most attention during study. Some summative procedures allow students to avoid certain areas of the curriculum or be selective and still do well (e.g. choosing 5 questions from 12). If summative assessment is to be effective it should not only sample from across the full range of qualities, skills and knowledge defined in the learning outcomes but it should also test the application of these attributes to fresh problems. A second issue concerns the way that summative assessment data is conceptualised and used. When assessments are represented by a grade (first, 2/1) or a single score (e.g. 59%) this has a different backwash effect on learning than if assessment outcomes are represented as a profile of achievement. The former can lead students to focus on accumulating marks whereas the latter might encourage them to develop and demonstrate a wider range of skills, qualities and understanding. Arguments for detailed transcripts and portfolio assessments are intended to address this issue.

Summative assessment practices also influence how students interact with formative assessment and feedback. For example, where formative and summative are aligned, students often have an opportunity to gain practice on tasks that are later formally assessed: they are also more likely to be motivated to utilise any formative feedback they receive. On the other hand, where formative and summative assessments are not aligned, students often do not see the relevance of, or engage with, formative processes. Some researchers have suggested that for maximum learning, one should minimise summative assessment and maximise opportunities for formative assessment and feedback including self, peer and tutor feedback. This strategy might help enhance learning without necessarily increasing staff workload. It also recognises that, although many of the attributes we wish graduates to develop cannot be summatively assessed, either reliably or validly (e.g. self-confidence), they can usefully be formatively assessed and developed. As students learn to self-assess they will be better able to make claims about achievements in these areas, and showcase them through portfolio processes (e.g. to prospective employers).

> The key question here is: *To what extent are your summative and formative assessments aligned and supportive of the development of valued qualities, skills and understandings?*

6. Encourage interaction and dialogue around learning (teacher-student and peer)

In analysing 50 years of research in higher education Chickering and Gamson (1987) identified student-student and student-teacher interaction and dialogue as key conditions for high quality student learning. Dialogue is required to clarify the meaning of feedback messages (e.g. 'this report requires more critical analysis') and to clear up conceptual misunderstandings. In most studies of feedback, students request more opportunities for one-to-one contact with academic staff to discuss assignments and exam requirements. However, with the current numbers of students per class it can be difficult for the teachers to sustain one-to-one dialogue. This is where peer dialogue can help, if appropriately monitored by tutors. Peer dialogue is particularly powerful in contexts where students in groups have to agree and produce a common output in relation to a complex task. In this, and in other cases, peer dialogue can significantly benefit individual learning: it exposes students to alternative perspectives, it generates reciprocal peer feedback and students often 'scaffold' each other's learning. If suitably organised, peer dialogue thus helps reduce the teacher's burden in supporting students and in providing feedback.

Some lecturers have also begun to replace face-to-face lectures with online materials so as to increase opportunities for personal contact time with their students. Others have begun to use new technologies such as electronic voting systems (EVS) and electronic discussion boards to enhance dialogue and interaction. EVS makes teacher-student dialogue possible in classroom settings where there are large student cohorts: it has also been used to trigger in-class peer discussions of challenging questions and concepts. Discussion boards support asynchronous written dialogue. A key advantage of discussion boards is that there is a permanent record of the dialogue. This enables tutors to monitor peer activities and to provide feedback in a supportive and non-dominating way.

> The key question here is: *What opportunities are there for feedback dialogue (peer and/or tutor-student) around assessment tasks in your course?*

7. Facilitate the development of self-assessment and reflection in learning.

One of the most effective ways to foster independent learning is to provide students with many opportunities to practise regulating aspects of their own learning. Self-assessment tasks are a good way of doing this, as are activities that encourage reflection on progress in learning. A key principle behind self-assessment and self-regulation is that students are involved both in identifying the standards/criteria that apply to their work and in making judgements about how their work relates to these standards. Hence principle 1 above (clarify goals, criteria and standards) might be seen as a prerequisite for the effective implementation of self-assessment. Research shows that training in self-assessment can improve students' performance in final exams.

Self-assessment tasks can range from the simple to the complex. For example, students might be asked to make some judgement about their own work before an assignment submission (e.g. its strengths, whether they have met certain criteria) or estimate the mark that they think will be awarded or they might be involved in selecting and compiling work for a portfolio. While structured opportunities for self-assessment are important there are other ways of developing these skills. One approach is to provide students with opportunities to evaluate and provide feedback on each other's work (with tutor monitoring, where appropriate). Such peer processes help develop the skills needed to make objective judgements against standards, skills which are often transferred when students turn to producing and regulating their own work.

Another way to directly involve students in monitoring and regulating their own learning is through portfolios. The construction of a portfolio requires students to reflect on their achievements and self-assess and select work that meets defined standards. Portfolios help increase students' sense of ownership over their work and they treat students' achievements positively, i.e. in terms of what they have accomplished. They are especially valuable for the assessment of high level and complex skills such as problem-solving, creativity etc as they put onus on students to make 'claims' of achievement based on evidence.

> The key question here is: *To what extent are there formal opportunities for reflection, self-assessment or peer assessment in your course?*

8. Provide opportunities for choice in the topic, methods, weighting, criteria and timing of assessment tasks

The provision of choice in the topic, methods, weighting, criteria or timing of assessment tasks is about offering learners more *flexibility* in what, how and when they study. Greater flexibility gives students control over aspects of their own learning and prepares them for their future as lifelong learners. When students enter the workplace they will often be required as professionals to create the criteria for their own learning and assess themselves against these criteria. Hence at university, students should have opportunities to develop these skills. Also, although all students normally follow a fixed curricular diet based on their course, a case can be made that not all students progress in learning at the same pace. This suggests a need for more personalisation, for example, with different timings for assessments tied to individual needs or progress. At a pragmatic level, increasing numbers of students now have part-time employment while at university and this calls for more flexible assessment arrangements. Accessibility legislation is also showing that different modes of assessment might be required for students with different needs.

Some flexibility and personalisation already exist in higher education: students are often able to select topics for project work and they sometimes have choice about when they can take an online test (timing). In portfolio assessment, students are asked to choose what content to put forward for assessment, to evidence their achievement. Another strategy is to involve students in adding their own criteria to those provided by the teacher when engaging in project work (with assessment being based on both sets). However, choices of this kind are often only available in later years of study. They could be brought back into the first year if the goal is to motivate and empower students. A key issue raised here concerns comparability of standards: flexibility should not allow students to avoid critical areas of the defined curriculum. On the contrary, rigorous assessment of learning outcomes should continue where appropriate but flexibility in formative opportunities is critical where it helps students develop the skills required in order to achieve those outcomes (see principle 5 for a discussion of summative assessment).

> The key question here is: To what extent do students have a say in the topics, methods, criteria, weighting and/or timing of assessment tasks in your course?

9. Involve students in decision-making about assessment policy and practice.

In higher education a more developed and different form of academic empowerment would occur if students were involved in decision-making about assessment policies and strategies at course, department or faculty level. The latter normally occurs through student representation on faculty and university academic committees that have a learning and/or assessment brief (e.g. a programme validation committee) and/or by students providing feedback on their assessment experience with this feedback being used to make continuous improvements in assessment practices. However, deep involvement at this level is rare in higher education although this is a developing area with many possibilities. For example, final year students might work with first year course leaders to re-design assessment tasks so they are more engaging. Even involving first year students in discussion about why marks for an assignment are allocated the way they are or why assessments are structured the way they are might prove quite productive. A key idea behind such developments would be to foster ownership by students and enhance their level of stakeholder engagement in the university.

> The key question here is: To what extent are students in your course engaged in consultations regarding assessment decisions?

10. Support the development of learning groups and learning communities

Academic success at University has been shown to be highly dependent on experiences of social integration, by whether students participate in friendship groups, have a sense of belonging, feel part of the wider academic community and have contact with academic staff outside the classroom. Failure and early departure are not just the result of difficulty meeting academic demands but are often also related to a failure to integrate socially. Social integration is particularly challenging in institutions where there are large class sizes, a wide mix of cultures with students of different nationalities, ages and backgrounds and with commuter students with external commitments and part-time employment. Assessment practices not only influence academic integration, but they also influence levels of social integration in and out of class.

Group projects and assignments can lead students to study together and to form friendships and develop affinity groups. This is particularly important when students first enter university but should not be neglected in later years. In some cases, students might select the members of their own group while in other situations it may be appropriate to manage the membership mix, for example, when the aim is to enhance cross-cultural understandings or when it is beneficial that group members are exposed to contrasting perspectives. Online environments can help enable supportive relationships to develop amongst commuter students with external commitments. Key challenges here as elsewhere include achieving an appropriate solo-group-work balance, managing plagiarism and assessing individual contributions to group projects.

Contact with members of academic staff, and a sense that there is empathy, has also been shown to enhance social integration. This is difficult in large classes but there is some evidence that teachers can project their presence within online environments, for example, by sensitive responding to students in difficulty. Moving beyond social integration is the idea of learning communities where more stable communities spontaneously develop around academic study. Some learning communities form spontaneously with only minimal teacher intervention or institutional support. For example, in a large first-year biology class at Glasgow University, the setting up of a shared discussion board (virtual space) where students could interact academically was shown to stimulate students to form their own learning communities. Also, when students have a positive experience of group working in class they might be more likely to extend these activities beyond the classroom.

> The key question here is: *To what extent do your assessments and feedback processes help encourage social bonding and the development of learning communities?*

11. Encourage positive motivational beliefs and self-esteem

Motivation is of central importance in learning and assessment as it is linked to self-confidence, self-efficacy (belief in the ability to do something) and self-esteem. Students' motivation is determined by whether they perceive that their own needs are being met, whether they see value in what they are doing and whether they believe they have the ability to succeed with reasonable effort. Rather than being fixed or completely determined by the environment, motivation is 'constructed' by students based on their appraisal of the teaching, learning and assessment context. This means that teachers can have an influence on student motivation.

Research has shown that frequent high stakes assessment (where the focus is on marks or grades) can have a negative impact on motivation for learning, and especially when the marking regime limits opportunities for prior practice and feedback and each test contributes significantly to the final mark. Dweck (1999) argues that such assessments encourage students to focus on performance goals (passing the test) rather than learning goals (mastering the subject matter). Feedback given as grades and without comments has also been shown to have especially negative effects on the self-esteem of low ability students.

Factors that enhance self-esteem, self-belief and the motivation to succeed include having early experiences of success (this might require early and regular low stakes assessments), encouraging students to focus on learning goals (mastering the

subject) not just performance goals (passing the test, looking good), using authentic assessment tasks that mirror the skills needed in the workplace and providing opportunities to experiment. Group tasks, if appropriately organised, can also be highly motivating. Other strategies that help raise levels of motivation include allocating time for students to rewrite selected pieces of work (this helps focus students on learning goals), automated testing where students can test their understanding in private and at a time that suits them (e.g. online practice tests) and by enhancing learner agency and choice in assessment processes (see principles above). Moving away from expressing assessment performances in terms of 'excellence minus some qualities' to expressing it as 'threshold plus qualities ' would also enhance motivation: such a move would help transform the discourse of assessment from one of failure to one of success.

> The key question here is: *To what extent do your assessments and feedback processes enhance your students' motivation to learn and be successful?*

12. Provide information to teachers that can be used to help shape their teaching

Good assessment and feedback practice is not only about providing good information to students about their learning: it is also about providing good information to teachers. 'The act of assessing has an effect on the assessor as well as the student. Assessors learn about the extent to which students have developed expertise and can tailor their teaching accordingly' (Yorke, 2003). In order to produce feedback that is relevant and informative and that meets students' needs, teachers themselves need good data about how students are progressing.

A variety of strategies are available to teachers to help generate and collate quality information about student learning. Many of these have been discussed in relation to the principles above. For example, regular formative assessment tasks would provide rich and cumulative information about the development of students' understanding and skill. The records of online discussions would make similar information about student learning available. Angelo and Cross (1998) have also shown the value of 'one-minute papers' where students carry out a small assessment task and hand this in anonymously at the end of a class (e.g. what was the main point of this lecture?; what question remains outstanding for you at the end of this teaching session?'). This kind of task provides the teacher (and students) with information about what is or is not being learned in class. When used regularly the information provided by this technique can be used to adjust teaching in the next class in ways that promote learning. Regular use of this technique has also been shown to help build a sense of community in class. Engaging students in discussions about assessments (principle 9) would provide another source of feedback to the teacher or the department.

> The key question here is: *To what extent do your assessments and feedback processes inform and shape teaching?*

SECTION 2

ASSESSMENT POLICY and PRACTICE

Examples across the Disciplines

Below are some examples of techniques used to implement the assessment principles described in Section 1 across a range of disciplines. However, this is just a starting point and the intention would be to collect specific examples from across the University of Strathclyde and elsewhere. If collated in electronic format this would help build a resource that could serve many purposes. More developed case studies have already been written up based on implementations of these the REAP project.

1. Clarify what good performance is (goals, criteria, standards)

To what extent do students in your course have opportunities to engage actively with goals, criteria and standards, before, during and after an assessment task?

Techniques that have proved effective in clarifying goals criteria, standards include:

- Providing better definitions of academic requirements before a learning task using carefully constructed criteria sheets and performance level definitions.
- Providing opportunities for discussion and reflection about criteria and standards in class before students engage in a learning task.
- Asking students to reformulate in their own words the documented criteria for an extended writing task before they begin the task. This reformulation could be submitted with the assignment.
- Modelling in class how the teacher would think through and solve 'exemplar' problems in quantitative subjects (e.g. mathematics) paying specific attention to the concepts behind the problems (and schema) and the different solution strategies including incorrect pathways. Similarly, in the social sciences the teacher might model essay-writing strategies in Marketing or how to use primary sources in History.
- Providing students with model answers for assessment tasks and providing opportunities for them to make comparisons against their own work. In Psychology students create a group response (800-word essay) to an online essay question. Model answers are chosen from the group submissions and replayed to the students after the class submits. This helps students to know what is required and increases their motivation because they see what other students have produced. In an Economics class, model answers including feedback were selected from submissions made by students in previous years (with permission) and were made available in the library short-loan collection. A range of examples was chosen spanning different levels of achievement. Sadler (2005) advises that more than one example is required where the task is complex, as a single case cannot by itself represent a standard.
- Requiring that students before an assignment, individually or in groups, examine selected examples of completed assignments (e.g. from previous years) to identify which is superior and why (criteria). This helps students identify and internalise assessment criteria (Gibbs, 1999).
- Organising a workshop where students in collaboration with the teacher devise some of their own, or all the assessment criteria for a piece of work as

was done in the final year in Contemporary Studies in Education at Strathclyde.

2. Encouraging 'time and effort' on challenging learning tasks

To what extent do your assessment tasks encourage regular study in and out of class and deep rather than surface learning?

Techniques that might prove effective here include::

- A basic strategy under this principle is to reduce the size (by limiting the word count) and increase the number of learning tasks (or assignments) that are set and distributing them across the timeline of the module. Race (2005) argues that shorter assignments (e.g. a 300 word critical interpretation rather than a 3000 essay) might often better tap into higher-level cognitive skills. Such tasks could be made compulsory and/or only carry minimal marks (5-10%) to ensure that students engage but that staff workload does not become excessive.
- The teacher might also decompose a large assignment (project, essay) into smaller components where performance is monitored and feedback is provided in a staged way over the timeline of the module. For example essay tasks might require a structured plan, statements of the key arguments and evidence, the introduction etc.
- A more empowering strategy might be to require students to draw up their own work-plan for a complex learning task by defining their own milestones and deliverables before they begin. Minimal marks might be provided where students adhere to their own work-plan and deliver on time.
- Linking in-class and out of class activities might be achieved by providing homework activities (e.g. problem solving tasks) that are subsequently built on in class (e.g. by asking students to present and work through their solutions at the front of the class supported by peer comments)
- Another strategy is to give students online multiple-choice tests to do before a class and then focus the class teaching on areas of identified weakness based on the results of these tests. This technique has been used in Mechanical Engineering where the in-class follow-up involved interactive lectures using an electronic voting system.
- Winter, Parker and Ovens (2003) describe an innovative coursework assignment format, called the 'patchwork text' which involves using small distributed written assignments of different types (a review of an article, a news report, answers to some questions) each of which is complete in itself but that are 'stitched together' through a final integrative commentary (e.g. a reflective account or framework that synthesises the key understandings). A 'patchwork text' assignment is designed to be as varied as possible and to cover a wide range of educational objectives. Each of these short pieces of writing can be shared and discussed within a small group of students with members providing feedback to each other (principle 6). The marking regime for this format can be tailored to the context with fewer marks for early assignments or with all marks provided for the final synthesis where students might also have the opportunity to revise or edit their earlier contributions. This format can also give students some choice in learning (principle 8), in that they might be allowed to select which patches to include in the final reflective account.

3. Deliver high quality information to students about their learning (to help them self-regulate)

What kind of teacher feedback do you provide – in what ways does it help students to self-assess and self-correct?

Techniques that increase the quality of feedback include:

- In many engineering and science classes students work through problem sets in tutorials where teacher feedback is available when students get stuck This ensures the feedback is timely and is available when students get 'stuck'.
- In Engineering at the University of Strathclyde there is also a policy where for extended written assignments (essays and reports) the turn-around time for the return of the assignment with feedback is two weeks.
- Race (2005) suggests giving a lot of feedback to students at the point at which they submit their work for assessment (in class). The feedback might include a handout outlining suggestions in relation to known difficulties shown be previous cohorts supplemented by in-class explanations. Race's argument is that students will just have worked through their assignment and will be at their most receptive. Alternatively, such documented feedback might be given in advance of students attempting the assignment. An online 'frequently occurring problems' list might serve similar purposes.
- Ensuring that the feedback is provided in relation to previously stated criteria helps link feedback to expected learning outcomes. Many academics use assignment return sheets for this where comments are linked to criteria. Care needs to be taken to limit the number of criteria for complex tasks, especially extended writing tasks, where good performance is not about ticking off each criterion but producing a holistic response (see, Sadler, 1989).
- Instead of providing the correct answer, the teacher might point students to where they can find the correct answer (e.g. the pages in the textbook). This would encourage students to seek out solutions and self-assess and self-correct. Another strategy suggested by Taras (2001) in language teaching is to highlight in the text where students have made errors but leave it to the student address these errors for a resubmission. Both these techniques might be made more effective by awarding a small percentage of marks for highlighting the improvements in a resubmission.
- McKeachie (2002) suggests asking students to attach three questions about what they would like to know about a written submission or about what aspects they would like to improve. This develops the students' ability to evaluate their own writing and gives teachers guidance about where to focus their comments. Getting students to request feedback based on their questions and concerns is more empowering than just providing feedback based on teacher interpretations of students' difficulties.
- Asking students to self-assess their own work before submission and providing feedback on this self-assessment as well as on the assignment itself would directly support students as they learn to make evaluative judgements about their own achievements.

4. Provide opportunities to close any gap between current and desired performance

To what extent is feedback attended to, and acted upon, by students in your course, and if so, in what ways?

Techniques to help students act on external feedback include:

- Increasing the number of opportunities for re-submission.
- Modelling the strategies that might be used to deal with difficulties in student work in class (close a performance gap). For example, model how to improve the structure of an essay that was rambling and disorganised.
- Not releasing the grade for an assignment or task until the student has responded to the feedback by commenting on it (e.g. to say which parts they found useful and why, say what they would do to improve the assignment)
- Teachers might write down some 'action points' alongside the normal feedback they provide - this would identify for students what they should do next time, what to prioritise, to improve their performance.
- Asking students to find one or two examples of feedback comments in class that they found useful and to explain how they might help in future assignments.
- Using classroom time to involve students in identifying 'action points' for future assignments. They would formulate these action points themselves after having read the feedback comments they have received - this would involve them more actively in the generation and planned use of feedback. This strategy has been used in Marketing at Strathclyde.
- Providing online tasks where feedback is integrated into the task, for example online tests with feedback and simulations that provide intrinsic feedback.

5. Ensure that summative assessment has a positive impact on formative learning.

To what extent do your summative and formative assessments aligned and supportive of the development of valued qualities, skills and understandings?

Techniques to maximise the positive impact of summative assessment include:

- Aligning learning tasks so that students have opportunities to practice the skills required before the work is marked (summatively assessed).
- Having students work on a regular basis on small summative tasks that carry minimal marks but each with regular feedback. The marking component could increase later in the course after students have gained a clear understanding of what is required and have had practice in the task.
- Providing students with mock exams so that they have opportunities to experience what is required by summative assessment in a safe environment. This could provide useful opportunities for highly targeted feedback.
- Moving away from summative assessment for complex tasks to a pass/fail system but where students provide evidence of their achievement in areas that are more difficult to assess (e.g. initiative, working independently, group collaboration).
- Help students to understand and record their own learning achievements through portfolio processes. Encouraging students to link these

achievements, where appropriate, to the knowledge, skills and attitudes required in future employment.

- Move away from the expression of written grade level descriptors aligned to a system where the top level is 'excellence' and lower levels are 'excellence minus' to descriptors that would portray achievement in terms of 'threshold plus'. This would focus on student successes rather than their failures.
- McCreery has reported a redesign of assessment in a history course at Sydney University, The aim is to help students improve their historical analysis skills through essay writing and to align formative and summative assessment processes. Two separate assignments, an analysis of a journal article (worth 10%) and a long essay (35%), were replaced because they were not aligned with the expected learning outcomes or the final exam and feedback was limited. A three-stage essay assignment was introduced comprising an initial tutorial where the essay question is discussed in groups, a second stage, which involves producing a draft essay plan with biography (10%) and the final stage where the essay is produced (35%). There is group discussion and enhanced feedback at each stage from both peers and tutors. McCreery believes that this revised design helps students more readily achieve the desired learning outcomes, is more efficient and helps develop learner independence. Details can be found at: McCreery, C (2005), *Less is more: rethinking assessment in first year history*, http://www.itl.usyd.edu.au/synergy/pdfs/2223.pdf
- The School of Engineering and Science at the University of Edinburgh have recently adopted a teaching and learning strategy that focuses on the development of the 'responsible learner'. This strategy involves changing the summative-formative balance: they propose a reduction in formal teaching and summative assessment and a maximisation of self-assessment. The strategy states: 'Our learning environment, and the requirements and expectations that we communicate to students, will be designed to ensure that they are given, and feel, a genuine responsibility for their own learning, seeing rewards and benefits from effectively managing their activities, and negative consequences from failing to do so.' In relation to summative assessment it states that '*in pre-honours years, preparedness to progress to the next level and excellence will be assessed by separate elements of summative assessment. The extent of formal summative assessment will be the minimum required for these purposes. Students will monitor their own learning by self-assessment*'. Edinburgh has initiated a range of vanguard courses to implement this strategy.
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6. Encourage interaction and dialogue around learning (peer and tutor-student)

What opportunities are there for feedback dialogue (peer and/or tutor-student) around assessment tasks in your course?

Techniques for feedback dialogue include:

- Reviewing feedback in tutorials. Students are asked to read the written feedback comments they have been given by tutors on an assignment and to discuss these with peers – they might also be asked to provide some ideas or strategies that they might use to improve performance next time.

- Students might be encouraged in class to give each other feedback on an assignment in relation to published criteria before final submission.
- Group projects create natural peer dialogue. However, structuring this so that students discuss the goals, criteria or standards expected before the research begins and return to discuss progress in relation to goals and criteria during the project would enhance the feedback provided by peers.
- Use of electronic voting systems (EVS) to make lectures more interactive. Nicol and Boyle (2003) and Boyle and Nicol (2003) have described a first year mechanical engineering module where EVS was used to support different types of dialogue in class. The session starts with the teacher explaining a difficult concept and then presenting a multiple-choice question (MCQ) to test students' understanding. Students make responses to the MCQ using handsets. The responses are collated in real time by computer and displayed as a bar chart - thus providing almost immediate quantitative feedback on the distribution of class responses. This procedure is enhanced through peer and teacher feedback. One approach involves structured peer discussion: students in groups are asked (after the bar chart feedback) to: '*convince their neighbour that they have the right answer*'. They are then retested on the same MCQ. Another approach is class-wide discussion: the teacher asks different groups of students to explain the reasoning behind their answers, whether right or wrong and then provides his/her own explanation. With this strategy three forms of feedback can be provided - computerized feedback (bar chart), feedback from peers (peer discussion) and feedback from the teacher during facilitated class discussions. These strategies are used in Mechanical Engineering, in French and in Hospitality and Tourism at Strathclyde. Banks (2006) discusses the use of this technology across a range of disciplines.
- Teacher-student feedback in class can also be facilitated through the use of in-class feedback techniques. One example described by Angelo and Cross (1990) is the 'one-minute paper'. Students are asked for written short answers to two questions posed at the end of a lecture class. For example, 'what was the key idea in today's lesson?' and 'what question remains unanswered in your mind? They respond to these questions on paper and the teacher uses the results to provide feedback and to stimulate discussion at the next lecture session. This not only integrates feedback into teaching and learning processes but it also helps build a dialogue around learning in large classes (see, Draper for a review of different variations on the one minute paper (http://www.psy.gla.ac.uk/~steve/resources/tactics/minute.html)

7. Facilitate the development of self-assessment and reflection in learning.

To what extent are there formal opportunities for reflection, self-assessment or peer assessment in your course?

Techniques to encourage reflection and/or self-assessment are varied and include:

- Create a series of online objective tests and quizzes that students can use to assess their own understanding of a topic or area of study (Bull and McKenna, 2004). Research shows that students find such tests valuable and will often make repeated attempts at such tests particularly if they are pegged

to some aspect of summative assessment. For example, students might have to achieve 80% correct in a final objective test exam but they can practise beforehand with a databank of formative tests as many times as they wish.

- Students requesting the kinds of feedback they would like when they hand in their work – which area they would like comment on, for example, in relation to the criteria.
- Structuring opportunities for peers to assess and provide feedback on each other's work using criteria. Such peer processes help develop the skills to make objective judgements against criteria, skills which are often transferred when students turn to regulating their own work.
- Gardner-Medwin (2006) uses online multiple-choice tests in a medical degree at University College London but with a critical modification called 'confidence-based marking' (CBM). In CBM students not only select the answer but they also rate their confidence on a three-point scale (C=1, 2 or 3). Both these components determine the marks students receive. When the answer is correct the mark depends on the confidence level (M=1, 2 or 3). If the answer is wrong, then the higher the confidence level, the higher the penalty (-2 at C=2 and -6 at C=3). By having to rate their confidence, students are forced to reflect on the soundness of their answer and assess their own reasoning (*reflection/self-assessment*). Importantly, CBM does not require that the teacher actually collect or analyse the reasons underlying students' answers but the online tool does provide a mark. See http://www.ucl.ac.uk/~ucgbarg/
- Pharmacy (at Strathclyde) is piloting the use of an assignment cover sheet which students fill in when they submit an essay. They have to rephrase the essay question in their own words, make a judgement about whether they have met the stated criteria and estimate the mark that they expect. This encourages reflection and provides useful information to teachers about levels of competence and judgement**.** An example of such an essay cover sheet used at Oxford can be found at http://www.learning.ox.ac.uk/files/coversheet.pdf
- Another way to directly involve students in monitoring and reflecting on their own learning is through portfolios. The construction of a portfolio requires that students reflect on their achievements and select work, and make claims about how their work meets different requirements, criteria or standards. Portfolios help increase students' sense of ownership over their work and help them to integrate learning across different subject domains.
- Students might also be asked to write a reflective essay or keep a reflective journal in relation to their learning on a module or course.

8. Provide opportunities for choice in the topic, methods, weighting, criteria and timing of assessment tasks

To what extent do students have a say in the topics, methods, criteria, weighting and/or timing of assessment tasks in your course?

Techniques for giving students more say (choice) in assessments include:

- Students are often given opportunities to select the topics for extended essays or project work. This encourages some ownership of the topic and can increase motivation.
- Students might be given some choice in timing, about when they hand in assignments. This would be particularly appropriate where students have

many assignments for different modules and where they are engaged in part-time work. Teacher workload could be managed by offering some scheduled times.

- In an Education course at Strathclyde, students were required to generate in groups the criteria that would be used to assess their projects. This task proved extremely demanding and students reported it as one of the most demanding learning experiences they had taken part in during their undergraduate degree. Tutors reported that producing the rationale and criteria for the assessment was more demanding than actually carrying out the project task.
- In an e-learning postgraduate module in Edinburgh students are asked to add their own specific criteria to the general criteria provided by the teacher. These are taken into account in the final assessment for the module.
- In an Accountancy module in Sydney, the students get a short introduction and then in pairs they produce multiple-choice tests over the duration of the module. They also produce feedback for the correct and the incorrect answers. What tests to produce are determined by students although they are chosen with reference to the module's learning objectives. These tests are then taken by the rest of the class and evaluated by them. Some of the tests are used in the final examination. The teacher argues that this procedure develops a deep understanding of the topic with the creation of feedback for wrong answers raising students' awareness of subtle aspects of the discipline. It also helps students generate questions and criteria for correct answers both of which deepen understanding.

9. Involve students in decision-making about assessment policy and practice.

To what extent are students in your course engaged in consultations regarding assessment decisions?

Techniques for involving students in decision-making might include:

- Providing online discussion fora where students can ask questions about assessment procedures. In one class (psychology) students asked why the department had a compensation scheme and others didn't, and about the structuring of assessment tasks. The tutor's responses to these questions had a positive effect: students felt that they had a voice in policy decisions.
- Student representation on committees that discuss assessment policies and practices. It has recently been suggested that one strategy to avoid student complaints and litigation resulting from the National Student Survey (where there is marked dissatisfaction with assessment and feedback) is to involve students as partners in assessment decision-making. There are students on the Assessment Working Group.
- Request feedback from students on their assessment experiences in order to make improvements – e.g. collate feedback on their experiences of exams and tests, on experiences of feedback and marking, on the weighting of assessments and on their wider experience across programmes. It might also be productive to collate data across subject areas and years of study.
- Carry out a brief survey mid-term or mid-semester of students' reactions to assessment and feedback processes and their concerns about exams while there is time to address these concerns.
- If using the ideas in this document in class it will be important to explain your rationale to the students. Students are more likely to appreciate the importance of self-assessment, peer dialogue and self-generated feedback

after having analysed and discussed their role in effective learning and in developing the ability to learn throughout life.

- Departments or faculties might wish to go further and work with students to develop an agreement, contract or charter where roles and responsibilities in assessment and learning are defined.

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10. Support the development of learning groups and communities

To what extent do your assessments and feedback processes help encourage social integration and the development of learning communities?

Techniques that have proved effective in fostering social cohesion include:

- Constructing group tasks and projects in the first year so that students can have opportunities to form friendships with others in the same year. Students are also keen to make contact with students in later years and this could be achieved through cross-year projects.
- In a Technology and Management module in one university the teacher required students working in groups to set tasks for the all other groups taking the module. This required that each group try to understand the range of perspectives of those taking the module. The task-setting group also had to develop suitable assessment criteria. The fact that all groups developed a task and carried out tasks set by other groups led to high levels of engagement and sensitivity to different backgrounds and cultures.
- Encouraging the formation of peer study groups or creating opportunities for students from later years to support or mentor students in earlier years.
- Linking modules together as a pathway so that the same students work in the same groups across a number of modules (see Tinto, 1997)

11. Encourage positive motivational beliefs and self-esteem

To what extent do your assessments and feedback processes enhance your students' motivation to learn and be successful?

Techniques to enhance motivation might include:

- Structuring learning tasks so that there is a progressive level of difficulty so that weaker students can have some success but those more able are not held back.
- Group projects are motivating when a climate of mutual respect is encouraged and when the project embodies procedures that support both individual and group accountability.
- Providing objective tests where students are able to assess their understanding in private and make comparisons with their own learning goals rather than with the performance of other students. This allows students to focus effort on making improvements in their learning rather than just on competing and comparing themselves with their peers (Elliot and Dweck, 1988). This strategy is used in Pharmacy.
- Well-organised online simulations (in business and engineering) can be motivational when they are based on real life scenarios (authentic) and when the feedback provided is dynamic and allows students to see what progress they are making towards goals in an ongoing basis.

- Providing marks on written work only after students have responded to feedback comments.
- Many of the strategies described under the other principles would enhance student motivation, for example, opportunities for self-assessment (principle 7), choice and involvement in decision-making (principle 9) and the formation of supportive learning communities (principle 10).

12. Provide information to teachers that can be used to help shape their teaching

To what extent do your assessments and feedback processes inform and shape your teaching?

Techniques to help generate and collate feedback about student learning include:

- One-minute papers where students carry out a small assessment task and hand this in anonymously at the end of a class (e.g. what was the main point of this lecture?: what question remains outstanding for you at the end of this teaching session?') – the teacher uses this test to inform teaching in the next class. Angelo and Cross (2003)
- Having students request the feedback they would like (perhaps in relation to the stated criteria) when they make an assignment submission.
- Frequent low stakes assessment tasks with regular outputs can provide teachers with cumulative information about student progress that could be analysed and used to shape subsequent teaching
- Online multiple choice tests delivered before a lecture class can be analysed and used to determine what is taught in class as is done in Mechanical Engineering (see Nicol, 2006)
- Online tools have built in functionality for class and individual reporting of engagement with resources and tests.
- Electronic voting systems provide dynamic feedback in class and the stored data provides further information about responses that could be analysed.
- Providing opportunities for students to self-assess and reflect on their learning. If these reflections are written down they would provide important input to teachers about students' ability to evaluate their own learning.

SECTION 3

ASSESSMENT POLICY and PRACTICE

Guidelines for Implementation

This section provides some guidelines about how to implement the 12 assessment and feedback principles described above. This section should be of interest not only to teachers in the departments and faculties but also to Heads of Departments, the Vice-Deans (Academic) and those concerned with quality enhancement and assurance processes.

1. Use professional judgement about which principles to implement and their weighting.

The twelve assessment and feedback principles in Table 1 represent a comprehensive framework for the enhancement of teaching and learning practice in HE. It is not however necessary to apply <u>all</u> the principles to gain benefits when redesigning a module, even though it could be argued that the more principles that are implemented the more powerful the learning design. Section 2 shows that the implementation of even a single principle can enhance learning and learner self-regulation. A single principle invariably carries with it aspects of other principles thereby enhancing the effects: for example, implementing self-assessment (principle 7) encourages students to pay more attention to goals and criteria (principle 1). It is recommended therefore that course leaders and teachers make their own professional judgement about which principles are appropriate to their disciplinary context.

There might also be tensions across some of the assessment principles or between the principles and desired practice. For example, encouraging time and effort on challenging learning tasks (principle 2) might be incompatible in some situations with providing choice and flexibility in the timing or content of assessments (principle 8). Or, giving students a choice in the methods of assessment (principle 8) might represent a threat to commonality of standards. However, these issues merely point out the need for teachers to apply the principles judiciously and to try to make sure that unintended consequences are as far as possible avoided.

2. *Use a tight-loose approach to the implementation of the principles*.

The ways in which the principles are implemented (i.e. the techniques of implementation) are likely to differ depending on the discipline. For example, a self-assessment technique that works well in Pharmacy might not be appropriate for Psychology. Also the way the principles might be called upon in practice may vary depending on the level or type student – full time students, part-time students, distance learning students. For these reasons it is recommended that a tight-loose approach to implementation be adopted (see, Thompson and Wiliam, 2007). While teachers should try to maintain fidelity to the thinking, the educational intent behind each assessment principle, there is no single correct approach to their application: the techniques of implementation should be tailored to the teaching and learning context.

3. *Involve students actively in the implementation of the principles.*

A key idea behind all the assessment principles is that the more active the students are and the more responsibility they have in the implementation of a principle, the more empowering the educational experience. For example, a teacher might 'clarify what good performance is' (principle 1) by providing students, in advance of an assignment, with examples of the kind of work required (e.g. examples of essays from previous student cohorts). Alternatively, the teacher might organise a session where students are required to examine these essay examples to identify which is better and why. The second approach would usually be more supportive of the development of learner self-regulation than the first because the student would be more actively engaged in constructing, internalising and owning the assessment criteria. It is recommended therefore that in formulating applications consideration is always given to how responsibility might be shared with students so that they are active participants in assessment processes.

4. *Use digital technologies to support and add value to the implementation*

The application of new technologies can enhance the implementation of the principles but this is less likely to occur if technologies are 'bolted on' to current practices. Effective application of technology requires a clear rationale. The assessment principles provide this: they make it possible to identify where technology can add value (e.g. to achieve benefits that could not be achieved without technology application) rather than just increase staff workload and the costs of delivery. For example, in one first-year Psychology class at Strathclyde, redesigned as part of the REAP project, the class coordinator was able to organise rich and regular peer feedback dialogue with 560 students (principle 6) on a series of online essay-writing tasks without a workload increase but with significant learning gains compared to previous years. In another first-year Mechanical Engineering class with 250 students the class co-ordinator was able to cut homework marking in half, saving 102 hours, by encouraging students to engage in self-assessment (principle 7) using an online homework system without any drop in exam performance. Many other examples of effective technology use are given in Section 2 and further case studies are available on the REAP project website (www.reap.ac.uk).

5. *Clarify the student's role and responsibilities in assessment and feedback processes.*

If class coordinators decide to redesign student learning based on some of these assessment principles it is strongly recommended that students are involved as partners in the process. Students who are paying for their education might expect their teachers to provide extensive feedback. Some re-education might therefore be required if students are to appreciate that they, as much as the teacher, must play an active role in making assessment and feedback processes effective. At the module level, it would be important to inform students about why, for example, self-assessment is a valuable skill in learning and in preparation for employment. It would be even more effective if a consistent message to that effect was provided at departmental or faculty level. The changes advocated in this policy document involve a redefinition of the 'teacher-student contract' and this calls for a rethinking of induction and briefing processes, especially for first year students.

6. ***Align responses to the National Student Survey to the assessment principles*.**

Strathclyde participated in the National Student Survey in 2007. In the UK, the National Student Survey (NSS) has consistently shown that across a range of teaching and learning indicators student satisfaction, though generally high is least high, with regard to assessment and feedback practices. These findings apply also to Strathclyde. Given that the NSS is being promoted as a way of helping students choose where to study, and indirectly as an institutional league table, universities are looking for ways to enhance their own results. The most common response is to identify ways that teachers can provide more *detailed*, *timely* and *written feedback*. While these measures are important, the 'transmission' of more feedback is unlikely on its own to result in greater student satisfaction. Some institutions have already tried this and found that students have failed to collect the feedback or to act on it. This 'transmission' approach fails to recognise the active role that students must play in feedback processes – in decoding the feedback message, internalising it and using it to make judgements about their own work. In responding to the NSS it is therefore recommended that any attempt to improve teacher feedback at module level be linked to strategies and techniques that are designed to manage student expectations (point 5 above) and to raise awareness of the active role students play in generating, discussing and using feedback (point 3 above).

7. Consider the effects of changes in assessment and feedback at module level on programme coherence.

The application of the assessment and feedback principles could be undermined if they are only applied in some classes within (or across) programmes. This might reduce the coherence of the learning experience and send mixed messages to students about assessment requirements and expectations. In addressing this issue, one strategy would be to embody some of the assessment principles in the teaching, learning and assessment strategies defined at departmental and/or faculty level. A second strategy might be to re-examine programmes or years of study (e.g. first year) and ensure that a common message about learner-responsibility is being conveyed. The latter is the strategy currently being proposed by Law, Arts and Social Studies for first-year classes. A third strategy would be to use the principles as a tool to review courses and programmes through departmental, faculty and institutional quality enhancement procedures.

8. Evaluate the impact of changes brought about by the implementation of the assessment principles.

It is important to evaluate the effects of changes in assessment and feedback practices at module and/or strategy level. Typical approaches are to evaluate changes in *inputs* such as staff time (costs) or *outcomes* such as the effects of assessment changes on exam performance, student satisfaction and/or retention statistics (benefits). The use of the assessment and feedback principles can however add value to an evaluation. Having a clear pedagogical rationale embodied in principles provides some 'process' measures against which to evaluate change: for example, it is possible to evaluate the extent to which redesigned modules or programmes offer enhanced opportunities for learner self-regulation. This can be inferred, for instance, by comparing the number and quality of opportunities for peer dialogue (principle 6), self-assessment (principle 7) or choice in assessment (principle 8) before and after the re-design. Such

process measures can augment input and outcome measures. Although changes in educational processes (e.g. opportunities for self-assessment) will not guarantee that students become better at regulating their learning (given that students mediate all teaching interventions) it will increase the likelihood that this outcome is achieved. And the REAP project has already demonstrated that when the assessment and feedback principles are implemented, these process do lead to gains in learning outcomes. CAPLE is able to offer some help to departments and faculties in evaluating changes brought about by module and course redesign.

APPENDIX 1

Working Group on Assessment Policy

Remit

1. To review policy, procedures and guidelines on assessment at the University of Strathclyde to establish the extent to which they:
    - reflect current thinking as represented in the QAA Code of Practice for the Assurance of Quality and Academic Standards in Higher Education, Section 6: Assessment of Students (revised September 2006)
    - support the development of learner autonomy and other principles expressed in the academic strategy
    - take into account external drivers, for example, the Bologna process, disability legislation, the National Student Survey
    - are based on the best research evidence on assessment
    - draw on the findings of local good practice initiatives (e.g. the REAP project, the first year experience) .

2. To produce a report and make recommendations to Academic Committee based on this review.

3. To identify mechanisms to help Strathclyde remain at the forefront of assessment thinking nationally and internationally.

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Reporting to
Academic Committee

Members of the Assessment Working Group

Professor David Nicol (Convenor), Deputy Director, Centre for Academic Practice and Learning Enhancement (CAPLE)
Professor Ray Land, Director, CAPLE
Ms Rowena Kochanowska, Head of Academic Office
Ms Katy McCloskey, Student Representative

Faculty representatives
Dr Stephen Tagg, Reader, Department of Marketing
Dr Nigel Watson, Lecturer, Department of Pure and Applied Chemistry
Dr Anne Grieve, Associate Dean, Education
Mr Andrew Wilkin, Senior Lecturer, Modern Languages (Italian)
Dr Roy Chapman, Vice-Dean (Academic), Faculty of Engineering

Secretary
Ms Jess Robinson, Administrative Officer, Academic Office

Co-opted members
Ms Catherine Owen, Project Manager, REAP project

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