KEYNOTE PAPER

Principles of good assessment and feedback: Theory and practice

David Nicol
University of Strathclyde
d.j.nicol@strath.ac.uk

OVERVIEW

This paper provides a frame of reference for the theory and practice of assessment in higher education. It presents 10 principles of good assessment and feedback practice based on research. It also provides the rationale for these principles and their selection criteria. The dynamics inherent in the implementation of these principles are analysed in relation to two dimensions. The *engagement-empowerment* dimension is about the extent to which the principles support the development of learner self-regulation. The *academic-social* dimension is about the extent to which the principles bring together, in a mutually supportive way, academic and social experiences. It is argued that principles are an essential tool for teachers as they design, implement and evaluate their assessment practices. The framework is applied to the design of, and the problems identified with, the first year experience in higher education

Keywords
Assessment principles, theory-practice, self regulation, engagement, empowerment, academic, social, learning communities

INTRODUCTION

Over the past few years I have written a number of papers where I have attempted to identify from published research the core principles underpinning good assessment practice in higher education. In one paper, I (with a colleague) formulated seven principles (http://tltt.strath.ac.uk/REAP/public/Resources/fb_principles.pdf) of good practice in formative assessment and feedback in relation to the development of learner self-regulation (first published in Nicol and Macfarlane-Dick, 2004 and revised by the same authors in 2006). The guiding idea behind these seven principles was that, if implemented, they would help enhance students' responsibility for, and control over, their own learning. These seven principles were used to inform and analyse formative assessment practices in a Scottish project funded by the Higher Education Academy (http://www.heacademy.ac.uk/assessment/ASS051D_SENLEF_model.doc)

In a subsequent paper, I became interested in formative assessment and feedback in relation to the first year experience (Nicol, 2006). This led me to incorporate a further four principles (http://tltt.strath.ac.uk/REAP/public/Resources/fb_principles.pdf) drawn from a literature review by Gibbs and Simpson (2004), who had identified a number of conditions under which assessment and feedback might support student learning. I have used all these principles to analyse and evaluate assessment practices in the Re-engineering Assessment Practices (REAP) project that I direct (see Nicol, 2006). The REAP project is funded by the Scottish Funding Council and involves three Scottish Higher Education

institutions. It is a large-scale project involving the redesign and embedding of innovative assessment practices supported by technology in large first year classes. So far 22 modules involving 6000 students have been redesigned (www.reap.ac.uk).

More recently, in my own university, at the request of the Deputy-Principal for Teaching and Learning, I have been leading a cross-institutional team that is revising our institutional policy on assessment. The goal is to update the policy and to ensure that it is aligned with, informs and strengthens the objectives of the institution's Academic Strategy. This work has provided an opportunity to consult widely with senior staff from a range of disciplines within my own institution and externally with staff in other HE institutions. Drawing on these consultations, the findings from REAP and recent revisions to the Quality Assurance Agency (QAA) Code of Practice on Assessment of Students (QAA, 2006), a refined set of ten assessment principles have now been agreed. I believe these ten principles provide a robust and comprehensive frame of reference for assessment and feedback practices in higher education.

WHY ARE PRINCIPLES IMPORTANT?

Why do I think it is important to define assessment principles? A key idea is that principles help guide and inform practice. Having worked as an educational developer supporting innovative educational practice in HE for many years, I became increasingly aware of the challenge facing busy teachers as they tried to make sense of the vast body of published research on assessment. I believed that if some basic principles could be extracted from the research, these would help teachers think about and identify ways of improving their practices.

In the early papers, in order to help support practice, I not only defined assessment principles but I also provided the research evidence to back each principle, and offered some practical tips and strategies for its implementation. Many institutions have now embedded the original seven principles into their teaching and learning strategies. Teachers and researchers have written papers describing how they have analysed their practices against these principles. When I have presented this work at conferences and workshops the reception has generally been positive with teachers finding the principles helpful. Interestingly, but not surprisingly, I have also found that these principles can help guide the application of technology to support assessment practices (Nicol, 2007a; Nicol and Milligan, 2006)

WHAT MAKES A GOOD PRINCIPLE?

Firstly, a good principle should capture a core idea from the published research – that is there should be research evidence to support its implementation. Secondly, a good principle should have broad relevance: it should guide practitioners as they design learning or assessment tasks for students, but it should not be too narrow or specific. In other words, there should be flexibility, that is, there should be many ways of implementing a principle depending on the discipline and the teaching and learning context. Thirdly, where there is a set of principles there should be minimal overlap across them – as far as possible they should be defined independently. Fourthly, the effectiveness of the principles should be higher when more principles are operationalised in the same learning design. Fifthly, good principles should also help those wishing to evaluate their assessment designs or their implementations in practice. The principles in the next section adhere to these requirements.

TEN PRINCIPLES OF GOOD ASSESSMENT PRACTICE

Table 1 below contains my ten assessment principles. Under each principle there is a question intended to stimulate teachers to think about their own assessment practices. Assessment in this context is broadly defined to include teacher, peer and self-assessment and feedback processes both formal and informal.

Table 1: Ten Principles of Good Assessment and Feedback Practice

Good assessment and feedback practices should:

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. **Encourage positive motivational beliefs and self-esteem.**
   To what extent do your assessments and feedback processes activate your students' motivation to learn and be successful?
5. **Encourage interaction and dialogue around learning (peer and teacher-student.**
   What opportunities are there for feedback dialogue (peer and/or tutor-student) around assessment tasks in your course?
6. **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?
7. **Give learners choice in assessment – content and processes**
   To what extent do students have choice in the topics, methods, criteria, weighting and/or timing of learning and assessment tasks in your course?
8. **Involve students in decision-making about assessment policy and practice.**
   To what extent are your students in your course kept informed or engaged in consultations regarding assessment decisions?
9. **Support the development of learning communities**
   To what extent do your assessments and feedback processes help support the development of learning communities?
10. **Help teachers adapt teaching to student needs**
    To what extent do your assessment and feedback processes help inform and shape your teaching?

As in the original thinking, the basic premise is that assessment practices are neither inherently good nor bad. It all depends on their purpose. My interest then was (and still is) in the ways that assessment practices might support the development of learner self-regulation. Each of the above 10 principles, and the supporting research, are therefore defined from that perspective.

For example, there is a lot of research evidence that students under-perform in assessment tasks because of a failure to grasp the requirements (Rust, Price and O'Donovan, 2003). Students can't self-regulate for academic success unless they understand what is expected (i.e. there must be some overlap between teachers goals and student goals). Principle 1 (*help clarify what good performance is*) is therefore a prerequisite for self-regulation in most contexts.

Another example is Principle 7 (*give learners choice in assessment processes*). The provision of choice in the topic, methods, weightings, criteria and timing of assessment tasks is about offering flexibility in what, how and when students study. Greater flexibility gives students control over their own learning and prepares them for their future as lifelong learners. It also supports the moral and legal requirements for fairness, equality and inclusivity of assessment practices.

Looking down this list from 1-9 there is some ordering of the principles. Intuitively, there are increasing levels of self-regulation from 1-9. Principle 10 is somewhat different because it is about the teacher's role in using assessment information to inform and shape teaching. This principle is separate from but informs all the others during implementation.

THE DYNAMICS OF IMPLEMENTATION

The list in Table 1 presents a static view of the assessment principles. In order to capture more effectively the dynamics of implementation I have devised the following diagram (Figure 1). The diagram captures two dimensions that are important when thinking about the implementation of principles.

Figure 1: Assessment and Feedback Practices: Dimensions of Implementation
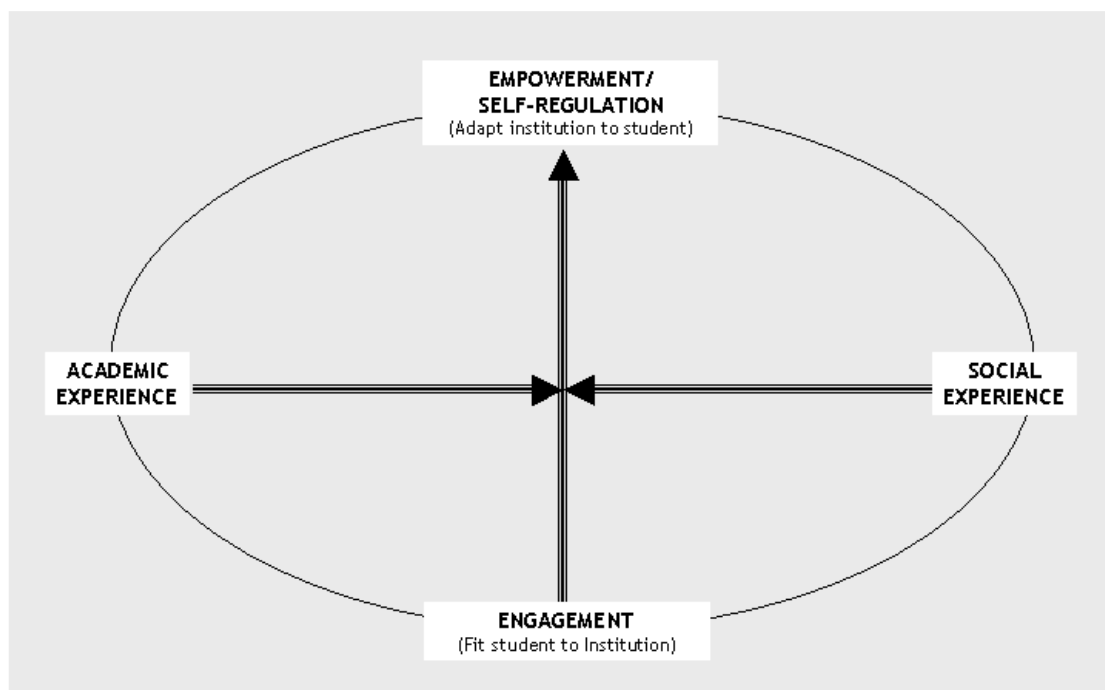
The first dimension, *engagement-empowerment*, is about the extent to which students regulate and take responsibility for their own learning. The second dimension, *academic-social*, is about the extent to which academic and social experiences mutually support students' learning and development. This diagram has been influenced by recent work with the Assessment Working Group, by the findings of REAP and by a paper I have recently written for the Quality Assurance Agency (QAA) Scotland on assessment and the first year experience (Nicol, 2007b)

Engagement-Empowerment

The vertical dimension in Figure 1 captures my original interest in learner self-regulation. Note, however, that I have used the term *empowerment* alongside *self-regulation* because the former term is used by the QAA Scotland to refer to this dimension of student development. Empowerment (or self-regulation) here has a primary focus on how students learn to monitor, manage and take responsibility for their own learning, rather than on who has power in the teaching-learning relationship, even though the latter is also relevant.

In the US literature the engagement-empowerment dimension is subsumed under the concept of *involvement*, defined by Astin (1984) as 'the amount of physical and psychological energy a student devotes to the academic experience' (p297). A key

argument is that the more students are academically and socially involved the more likely they are to persist and succeed in their studies. However, distinguishing different facets of involvement is helpful. It brings out the fact that students can be involved at a level where they are primarily 'engaged in curricular activities' organised by their teachers or they can be involved because they have taken on some of the responsibility for learning. This dimension captures the idea that although teachers must create academic structures that involve and engage, they also need to develop ways of sharing responsibility for learning with students. Another way to view this dimension is that it depicts the progressive reduction of teacher 'scaffolding'.

In an earlier paper (Nicol, 2007b) I argued that any assessment principle could be more or less empowering depending on how it was implemented (that is it could slide up or down the engagement-empowerment dimension). 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. some 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 some assessment criteria. The important point is that if students are given a active and responsible role in the implementation of a principle, then this is more empowering (or is more likely to develop learner self-regulation). [The most empowering scenario might be where students feel able to organise their own active engagement with criteria and even question their appropriateness or validity.]

Academic-Social

The horizontal arrows in the figure depict the academic-social dimension. A key goal in higher education is to provide an integrated experience where the academic and the social mutually support student development. This accounts for the direction of the arrows pointing to each other. In the academic-social dimension it is assumed that academic experiences can trigger supportive social experiences, and that social experiences can enhance and strengthen academic experiences.

This importance of the social dimension has been a strong finding from the REAP project. Many of our best course redesigns have shown that when academic structures and social interactions are both organised so as to support student learning, there are positive learning benefits. The academic seems to encourage social bonding and networking in a way that creates a positive backwash effect on academic learning.

An example here would be where the teacher organises structured activities where students work in groups on an open-ended task to produce an agreed output. For example, in the 'psychology case study' presented by Baxter (2007) in this conference the students work online in groups of 6-7 to write an 800-word essay. Our research shows that this social interaction not only scaffolds the academic writing skills of individual students but that it also provides positive social support. Students in this study produced academic work of a quality higher than that seen before in the department. Baxter reports that first year students produced writing that was equivalent in calibre to that of second year and sometimes third year students.

The next section explores the application of these two dimensions and the ten principles in relation to a first year course.

THE PRINCIPLES AND THE TWO DIMENSIONS: APPLICATION TO THE FIRST YEAR

A number of problems have been identified in the literature on the first year experience of HE. Specifically, failure and dropout have been related to a lack of clarity regarding expectations in the first year, low levels of teacher feedback and poor motivation. Failure has also been related to low self-belief (not believing one will be successful in study), lack of control over one's own learning and not feeling involved in (or integrating into) the

academic and social life of the university community (Tinto, 1999, 2005: Yorke, 1999, 2001: Yorke and Longden, 2004),

Let's now look at the 10 principles in relation to the two dimensions and with reference to the first year experience.

Figure 2: A Framework and Ten Principles for Assessment and Feedback in the First Year
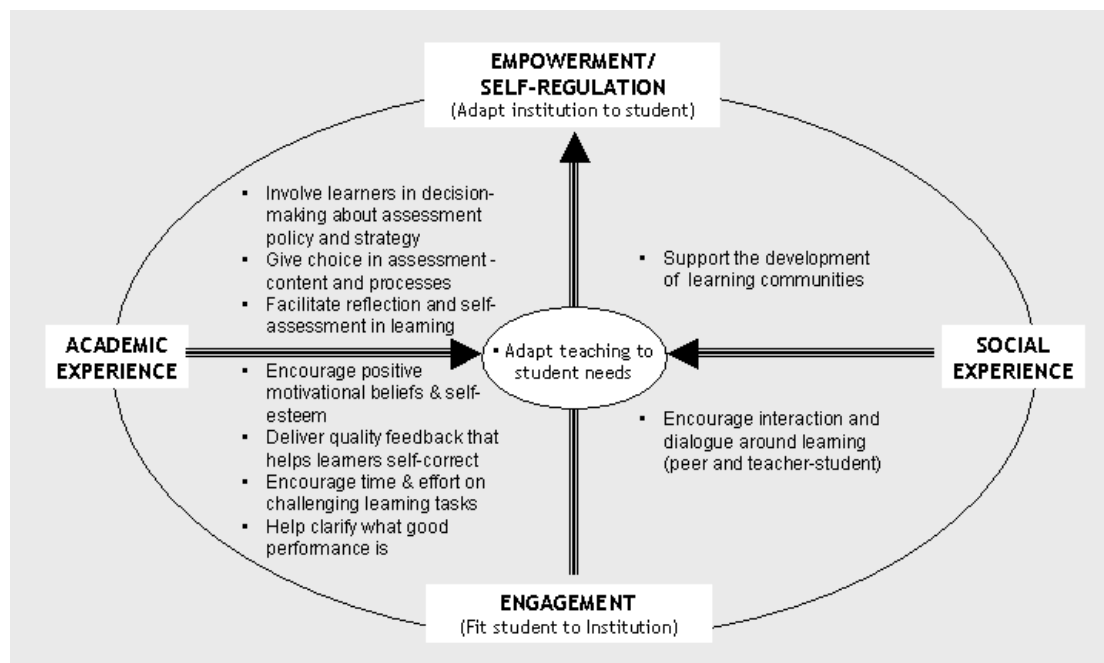

Figure 2 above illustrates the groupings of principles in relation to the first year (see, Nicol, 2007b). The grouping in the lower left quadrant highlights the need to create academic structure for student learning in the first year. Academic structure is realised through clear goals (principle 1), a series of learning tasks that encourage students to spend time and effort on a regular basis in and out of class (principle 2), supportive teacher feedback which is given in time and can be used to make improvements (principle 3) and a positive and supportive motivational climate (principle 4). Structure is important in the first year. It helps students unfamiliar with the demands of university study to adjust and find out what is expected.

However, if academic structure is linked to opportunities for peer dialogue and interaction, then this not only helps promote a sense of belonging, but it might also enhance academic learning (lower right quadrant). Many institutions have for a long time encouraged peer dialogue and connected learning through group projects. However, group projects have often been organised for later years of study rather than being a key feature of first year. One advantage of introducing dialogue into structured tasks is that dialogue can lead to an attenuation of the teacher's voice allowing the student voice to be heard (Gravett and Peterson, 2002). Hence dialogue initiates a process of empowerment.

Empowerment can be further enhanced in the first year through structured opportunities for self-assessment (principle 6), by giving students some choice in aspects of the assessment experience (principle 7) and by increasing their involvement in assessment decision-making (principle 8). These principles are depicted in the upper left quadrant. Many of these principles can be easily introduced into first year learning at some level. For example, students could self-assess their own assignment before submission (e.g. identify and provide a rationale for the best features of submitted work, or say what mark they think would be fair and provide a reason); they might choose the topic for a project or add

their own assessment criteria to supplement those given by the teacher; or they might participate in staff-student committees and give feedback on the effectiveness of, and student reactions to, the assessment regime.

Empowerment is also enhanced when teachers support the development of learning communities on campus (upper-right quadrant). Although teacher (or institutional) interventions can support the development of learning networks and communities they cannot mandate them. When students have a positive experience of group working in class they might also be more likely to extend these activities beyond the classroom. For example, in a course at Glasgow Caledonian University, students set up their own virtual space to share resources and discuss assignments outside the classroom. They organised their own feedback and discussion groups using technology previously only used for informal learning (and leisure pursuits) to support formal learning. In the REAP project, we have found that the mere setting up of a shared discussion board for first year students in a single course stimulated and enhanced the natural development of learning networks. Moving in this direction – that is one of social empowerment – might help to address Zepke, Leach and Prebble's (2006) concern that institutions should be adapting to what the student brings (*adapt institution to the student*) not just the other way round (*fit student to institution*).

In Figure 2 it is assumed that those supporting first year teaching, learning and assessment have an abiding concern for the growth and development of students (Braxton, Hirschy and McClendon, 2004). This concern is not only underscored by designing assessments that support learner empowerment and academic-social integration but also by academic staff (and relevant support services) being responsive to the needs of the diverse groups of students enrolled in first year modules and programmes. The idea that teachers would use feedback from their assessment practices to shape subsequent teaching is represented by the principle 'adapt teaching to student needs' in the centre of the Figure 2.

DISCUSSION

A number of issues are raised in the above analysis. Firstly, while the location of the principles in the different quadrants (and centrally) in Figure 2 helps clarify some important issues it also requires some qualification. Earlier it was noted that each principle could shift its position relative to the engagement-empowerment dimension depending on how it was implemented. However, the clustering of these principles in the lower-left quadrant helps highlight the important role of the teacher in structuring learning in the first year. Taking care of this group of principles is essential if students are to learn what is required in university study.

A second issue concerns the separation of the academic and social dimensions in Figure 2. This separation is artificial and is intended primarily to highlight the relationship between these dimensions. In reality, academic and social experiences are interwoven in the life of all first year students. For example, Billet (2001) argues that *all* learning occurs within social organisations or communities. A third point is that good assessment practice in the first year is not about implementing each principle in isolation. Research within the Re-engineering Assessment Practices project (www.reap.ac.uk) has found that integration and empowerment are significantly increased where many principles are operative in the same assessment design (see Nicol, 2006).

A fourth, and important, point is that there might be conflicts across the 10 principles proposed in Figure 2. 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 7). However, this merely points out the need for teachers to make decisions about what is appropriate to their context. For example, a clear structure might be required early in the course before choices are made available. Alternatively choice may be possible within a structured framework (e.g. students choosing which of four assignments might count in the exam). Obviously a balance across the principles must be struck for any given implementation. A

key challenge here would be managing teacher workload while at the same time personalising assessments and feedback opportunities to different learner needs.

Another area of potential conflict is that of encouraging peer dialogue through group working. When the 10 principles framework was recently presented to a mixed staff-student audience in one University, some students expressed a concern that being assessed based on group work violated the idea of giving choice in modes of assessment. These students maintained that not all students were comfortable with being 'forced' to work in groups. One approach to resolving this issue is to argue that group working be made an option rather than compulsory. Another approach is to argue that group working is necessary in future employment and that it is the duty of the university to prepare students for this. Whatever the decision, it is important to recognise the difference between group working as part of academic learning (e.g. tasks that require students to learn together) and group working with a social goal (e.g. to create friendships). While the former might be compulsory the latter goal must be pursued at the students' discretion.

Despite the artificial and permeable character of the quadrant boundaries and the fact that the principles might have different effects depending on their implementation, the use of the framework in Figure 2 has proved helpful. Moreover, its value might be extended by using the quadrants and the principles to map the characteristics of different assessment strategies in different years of study. If this were done, one would expect first year assessments to have a different profile (overlap in different ways) to assessments as they are implemented in later years of study.

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