KEYNOTE PAPER

Assessment, especially in the first year of higher education: old principles in new wrapping?

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ORIENTATION

This paper is intended to prompt discussion during the on-line REAP conference. The main (but not exclusive) emphasis is on the first year student experience, in which the challenges of transition into higher education point firmly to the greater importance of formative assessment than summative assessment. Formative and summative assessment may be considered as mutually exclusive categories: however, the distinction between the two assessment is fuzzy and often ambiguous, and in any case students may – for a variety of reasons – concentrate on a summative grade and give little attention to the formative feedback that may have been provided.

The overarching principles emphasised in this paper are:

- the significance of feedback in aiding students' transition into higher education
- the provision of feedback that is both timely and of high quality
- the importance of finding ways in which that feedback is put to good use
- the need for summative assessment that is robust (in a variety of respects).

These principles are germane to any assessment regime, but the difficulties in implementing them are arguably not as widely appreciated as they might be. This paper sketches a number of aspects of higher education in which developments in communications technology – the 'new wrappings' in the title of this paper – offer both new potential and new challenges to assessment practices (which is not to suggest that all is well with assessment that does not involve computers), and poses some questions that invite discussion and the provision of examples.

ASSESSMENT IN THE FIRST YEAR

In most undergraduate programmes leading to a bachelor's degree in the UK the first year (whether in full-time or part-time study) can be characterised as a year of acclimatisation to the demands of higher education. Summative assessment, whilst important for progression, does not count towards the final result, save for the need for students to have gained the necessary amount of credit to qualify for the award. Grades above the level of 'pass' are signals of the level of achievement, rather than anything else. Elsewhere, early summative assessments carry greater weight – for example, in calculations of grade-point average.

Formative assessment is of particular importance in the first year of study, if students are to come to terms as rapidly as possible with what is expected of them.

I sometimes use an exchange from the play[1] (and film) *Educating Rita* to make the point succinctly that students (in this case, Rita) do not necessarily appreciate what is expected of them, and that a tutor (here, Frank) may not appreciate that this is the case.

> Frank: In response to the question, 'Suggest how you would resolve the staging difficulties inherent in Ibsen's *Peer Gynt*', you have written . . . 'Do it on the radio' . . .
>
> Rita: Precisely.
>
> Frank: Well?
>
> Rita: Well what?

Some students who left their programmes of study without completing them have indicated, in attrition studies in which I have been involved, that they found themselves unable to cope with the switch in approach from a highly structured and pedagogically supportive learning environment in school or college to an environment in which they are expected to operate with a considerable degree of autonomy. One student, who had left their programme of study in the UK, wrote on a questionnaire:

> Not well enough prepared for the difference between school life and university.

Surveys of first year students in Australia have shown that

> More than one-third of students … are likely to have confronted the reality that they are not performing as well as expected. These findings are a salient reminder of the sometimes traumatic adjustments required of first year students …
>
> Krause et al (2005, p.23)

Krause et al go on to note that the proportion of students receiving marks lower than expected has declined over a decade, which may be attributable to university and/or school efforts to provide preparation and support in respect of the transition into higher education.

However, coping has to be approached from two directions. First, higher education *ought* to stretch students in a number of respects[2], so one might expect, as studies of the first year experience in the UK and Australia have shown (Yorke and Longden 2007; Krause et al, 2005, respectively), that a significant proportion of students say that they have difficulty in coping with their academic work. It is when the difficulty is associated with not appreciating what is expected (as is the case of Rita in the excerpt above) that questions arise about the adequacy of diagnostic and formative assessment, and of tutorial support in general.

The development of the capacity to act as autonomous learners is, for the (perhaps vast) majority of new entrants to higher education, a high pedagogic priority. This entails clear expression by teachers and support staff as to what is expected, and implies the significance of formative assessment. The significance is increased in academic contexts in which early failure is supposed to be retrieved through re-sitting assessments, since retrieval typically adds a burden to those who are already struggling.

[1] Act 1 Scene 4.

[2] Writing this, I recalled John F Kennedy's speech of 12 September 1962, in which he said 'We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills …'. For me, this is a metaphor for why one should seek to enter higher education.

For those who come from backgrounds that could be said to be disadvantaged by a lack of 'social capital'[3], and who may lack self-belief in their capacity to succeed in higher education, the argument for support has added force. Bandura puts it with considerable economy:

> The less individuals believe in themselves, the more they need explicit, proximal, and frequent feedback of progress that provides repeated affirmations of their growing capabilities.
>
> Bandura (1997, p.217)

A student from an unpublished survey that I conducted a few years ago echoed Bandura's point:

> I found having large blocks of work without assessment difficult – you don't know if you are grasping it or not until exam time! Assignments weekly would be better from my point of view.
>
> Female in her 30s, on a science-based Foundation Degree programme

To what extent is it possible to respond to desires such as this student's (which is not unique)?

The American practice of frequent class 'quizzes' may have something to offer in this regard, perhaps transmuted into an electronic form.

A note on the advantaged

However, some students from *advantaged* backgrounds do less well in higher education than their A-level examination results might lead one to expect. This is evidenced in studies from the Higher Education Funding Council for England and elsewhere (HEFCE, 2003; 2005; Yorke et al, 2005). In these studies, the evidence suggests that students from fee-paying schools (with perhaps the exception of the elite amongst these) may be affected markedly by the switch in study environment from one in which teaching is focused tightly on getting good grades in the examination to one in which the expectation is of self-directed study.

THE TENSION BETWEEN FORMATIVE AND SUMMATIVE ASSESSMENT

There is tension between assessment that is primarily aimed at promoting learning (i.e. formative) and that that is designed to inform about a student's achievement (summative)[4]. The tension takes at least two related forms. First, many assessments straddle the two, in that they are intended to serve both formative and summative purposes (the assignment assessed midway through a study module and whose mark counts towards the final module mark is a typical example). Second, although considerable effort may be made to provide formative feedback on submitted work, the student may simply note the (summative) grade and ignore the formative feedback: Graham Gibbs has collected a number of student comments to this effect.

The summative aspect of assessment becomes dominant in student thinking about their ultimate achievement where the grades are cumulated, as in a grade-point average or honours degree classification. The grade, rather than the learning, becomes the thing. Writers such as Dweck (1999) and Pintrich (2000) draw the distinction between 'performance goals' (in which the grade is of primary importance to the student) and 'learning goals' (in which, self-evidently, the focus of attention is on learning). Programmes in which the content is subdivided into discrete modules, and in which the

[3] i.e. they can draw on the experiences of family members who have already been through higher education, and who can hence explain what is expected.
[4] The terms 'low stakes' and 'high stakes' are sometimes used interchangeably for 'formative' and 'summative', respectively, but the mapping is less straightforward than this.

achievement grades are cumulated, tend to give student behaviour a push in the direction of performance goals. They also implicitly discourage risk-taking in learning, since a student may achieve a better overall grade by 'playing safe' than by being adventurous (with the attendant risk). Whilst 'playing safe' might offer a short-term advantage to the student, useful learning experiences might be by-passed. Rogers (2002, p.113) observes that, whilst terminal failure is undesirable, 'interim failure … needs to be understood as an unavoidable and perhaps necessary part of the learning process'.

Can the promotion of 'learning goals' be assisted by changes to curricular structures and, if so, what are the implications for summative assessment?

FORMATIVE ASSESSMENT

Formative assessment includes indicating to a student where the strengths and weakness of their work lie, and what the student might do to improve things (whether 'improvement' is seen in terms of repeating the work or of 'doing better' on the next piece of work). In other words, it combines both feedback and feedforward functions. Reports from the Quality Assurance Agency have consistently indicated that formative assessment is the least strong aspect of pedagogy in UK higher education (see, for example, QAA, 2003, p.27ff[5]).

Gibbs et al (2003) listed eleven conditions (these might equally have been termed 'principles') under which assessment is supportive of learning[6]:

1. Assessed tasks capture sufficient study time and effort
2. These tasks distribute student effort evenly across topics and weeks
3. These tasks engage students in productive learning activity
4. Assessment communicates clear and high expectations to students
5. Sufficient feedback is provided, both often enough and in enough detail
6. The feedback is provided quickly enough to be useful to students
7. Feedback focuses on learning rather than on marks or students themselves
8. Feedback is linked to the purpose of the assignment and to criteria
9. Feedback is understandable to students, given their sophistication
10. Feedback is received by students and attended to
11. Feedback is acted upon by students to improve their work or their learning

These 11 conditions tend to reflect a teacher-centred perspective. Whilst some might prefer to express the conditions differently, they probably command general assent. Conditions 5 to 11 are the most relevant to the purposes of this paper, though the influence of the more structural Conditions 1 to 4 is acknowledged. Given Conditions 1 to 4, there are two overarching issues: the quality of the feedback and its utilisation by students, which can be seen in terms of a loop (better, perhaps, spiral) of communication and action (Knight and Yorke, 2003). This loop or spiral is theoretically complex, as Butler and Winne (1995) demonstrate in their dissection of self-regulation in learning[7], since it involves not only knowledge of outcomes (as judged both externally and internally) but also motivations, beliefs, understandings and affect. Nicol and Macfarlane-Dick (2006) draw on Butler and Winne in presenting their own model, in which seven principles are important:

[5] The subject overview reports published by QAA provide further evidence.
[6] Relatively minor variations on this list appear elsewhere. A useful source of research instruments on this theme can be found at http://www.bioscience.heacademy.ac.uk/journal/vol2/beej-2-5.htm , though the stated links to the FAST project are no longer 'live'.
[7] I am grateful to Nicol and Macfarlane-Dick (2006) for directing my attention to this article.

Good feedback practice:
1. helps clarify what good performance is (goals, criteria, expected standards);
2. facilitates the development of self-assessment (reflection) in learning;
3. delivers high quality information to students about their learning;
4. encourages teacher and peer dialogue around learning;
5. encourages positive motivational beliefs and self-esteem;
6. provides opportunities to close the gap between current and desired performance;
7. provides information to teachers that can be used to help shape teaching.

Nicol and Macfarlane-Dick (2006, p.205)

Nicol and Macfarlane-Dick have a view of feedback that, despite some commonalities with that of Gibbs et al, differs in a number of respects, including the overt presence of the affective domain; the engagement of peers; and the possibility that the feedback process can influence *teaching*.

According to a survey of the first year experience in the UK (Yorke and Longden, 2007) the quality and usefulness of feedback to students was generally perceived positively, though there were some localised spots where this did not hold[8]. Respondents were more equivocal where the *speed* of feedback was concerned. On the whole, students in the UK appear to have been more satisfied with feedback than Krause et al (2005, p.62) document in respect of their counterparts in Australia. Annual Reports (2002-06) of the National Survey of Student Engagement in the US suggest that feedback to first year students has been given progressively greater attention over that period[9].

Feedback has to be intelligible to the student but, whilst it might appear so from the teacher's perspective, there is evidence that the 'messages' can go astray (e.g. Chanock, 2000). If feedback is perceived by students as satisfactory, there remains as an issue the use to which is put. As noted earlier, students may do little or nothing with the feedback, perhaps because it arrived too late to be useful for a programme that by then had moved on to other things, or simply because the gaining of an adequate grade was felt to be sufficient in itself. Matters may not be helped by students' underestimation of the amount of private study that higher education demands (e.g. Byrne and Flood, 2005; Lowe and Cook, 2003) or low levels of actual commitment of time (e.g. Saenz and Barrera, 2007). However, a constructivist position in respect of pedagogy and student learning requires that students *work* with the feedback they receive in order to maximize the chances of academic progress.

How can pedagogical and assessment practices improve the chances that students will act on feedback that is provided? What examples are there of success in getting students to use feedback productively?

COLLABORATIVE LEARNING

One area in which assessment practice has found persistent difficulty is that of collaborative learning (as officially specified, that is – there is plenty of evidence that students discuss academic work informally, both face-to-face and electronically). Much student work for assessment is individual, even when it derives from group work of some kind, since assessors are uncomfortable with the challenge of ensuring that individuals are treated equitably when a group output is presented. A major influence on the problem (which will not be pursued here) is that of numerical grading such that some overall grade can be given to the individual student, whether this be in the form of a grade-point average or an honours degree classification.

[8] Elsewhere, Hounsell et al, (2005, p.10ff) have documented some student comments indicating that feedback has fallen some way short of ideal.

[9] Navigate from http://nsse.iub.edu/html/annual_reports.cfm (accessed 20 May 2007). Note that the benchmarking methodology changed in the 2004 Report, and that the list of participating institutions has evolved over time, making longitudinal comparisons no more than suggestive.

Performance in the workplace is often on a team basis. Employers typically state that they want graduates who can work harmoniously and effectively with others. Yet assessment regimes tend not to signal a valuing of achievements of this kind.

How can assessment practice be developed to solve what I take to be a necessary challenge to a deeply-set tradition of summative assessment (i.e. the individualising of group achievement)?

LEARNING OUTCOMES, AND METACOGNITION

Part of the problem of adjusting to higher education is appreciating just what is expected. In a number of publications, Sadler (e.g. 1987; 2005) has demonstrated how difficult it is to state educational objectives or expected learning outcomes in a manner that elicits shared understanding. Statements of learning outcomes do not, by themselves, convey clearly what is expected – they need to be elaborated through examples. Wolf (1995) showed that academics held varying views of stated expectations, so it must be assumed that students vary similarly.

A key issue for higher education is the further development of students' metacognitive abilities which include aspects of self-awareness regarding learning and the internalisation of standards (academic and professional). This is all part of the development of personal autonomy which is present in the writing of various authors on student intellectual and moral development (see Yorke, 2003, p.490ff). Curriculum design is of considerable importance in this respect. Constructivist approaches, in which the work of Piaget and Vygotsky amongst others has been influential, include the gradation of demands from the comparatively simple to the complex, with the progressive removal of intellectually supportive 'scaffolding' (Wood et al, 1976) to the point at which – metaphorically – the fledgling can develop from fluttering between branches to flying freely. In this developmental context, feedback on achievement is of obvious importance. Mentkowski and Associates draw attention to the use of feedback to develop students' metacognition:

> … feedback procedures assisted [the students] in forming accurate perceptions of their abilities and establishing internal standards with which to evaluate their own work.
>
> Mentkowski and Associates (2000, p.82)

How can the development of metacognition be supported to best effect through assessment?

THE SOCIAL DIMENSION

The issue of disadvantage is of significance in respect of what students bring psychologically to their learning.

Those from less privileged backgrounds may, as a consequence of their experiences in the educational system, lack self-confidence and may hold 'entity theories' regarding matters such as intelligence – i.e. that intelligence is fixed rather than 'developable' (see Dweck, 1999; Yorke and Knight, 2004). As Thorpe et al (2007) found in their pilot study, such students may underestimate their capabilities. The best tutors appreciate the need to provide psychological support and encouragement in their (often face-to-face) interactions with such students. However, satisfaction with contact with academic staff may not be as high as that for other aspects of the student learning experience (for example, Hurtado et al, 2007, found it to be some 10 percentage points lower than the overall rating for the quality of instruction).

Personal attributes and qualities[10] constitute one of the four broad constructs of 'employability'[11] put forward by the Enhancing Student Employability Co-ordination Team

[10] An outline is given in Yorke and Knight (2006) and a fuller account in Knight and Yorke (2004, Ch6).

[ESECT], the ESECT position being that, in a context in which the focus is on learning outcomes and their achievement, attributes and qualities such as motivation, self-efficacy, and a belief in personal 'developability' have tended to be overlooked. Feedback has a part to play in developing 'the personal', and requires an awareness of the importance of 'the personal' to student success.

Encouraging students to persevere (especially when the academic going gets tough) may be a matter of feedback *on* work but also may involve communicating *before* any work is produced for assessment. Kift (2004, p.12ff) gives a couple of examples of the importance of encouraging students:

> thx heaps 4 ur motivation email ☺ *Chih* (Week 11 Sem 1, 2003)
>
> I just would like to say thank you for all those emails that you have been sending to us during the semester. They are very motivational, encouraging, funny and interesting. Being a mature age student and from a non-English speaking background I have experienced some moments when I thought that [it] was too hard and impossible to continue my university studies. However, I am still here and looking forward to the end of semester. Once again, thank you very much. Your encouraging words really helped me a lot. *Maryana* [19/05/03]

Mentkowski and Associates (2000), whilst perhaps surprisingly not referring to work such as that of Dweck, nevertheless indicate the supportiveness of assessment at Alverno College in the US when they write:

> Students observed that feedback was given in such a way that they did not feel it was rejecting or discouraging …
>
> Mentkowski and Associates (2000, p.82)

Of some significance, perhaps, is a recent finding from a survey of some 400 students who did not re-enrol for the second year of their full-time programme[12] that roughly one third said that the lack of support from academic staff was at least a moderate influence on their decision to discontinue. Reason et al (2006) indicate, from a study on a much larger scale, that the development of academic competence in first year students is most greatly influenced by their perception of the support that they received: the nature of feedback is likely to play a strong part in this.

How, with all the pressures on academics, can sufficient attention be given to the psychological support of students? To what extent does electronic communication offer opportunities in this respect?

NUMBERS

The growth in student numbers in the UK over the past three decades has not been matched by that of academic staff. Hence feedback to students has become a more challenging issue – some will say that the level of feedback that they would wish to give is simply not achievable. Perhaps such people see assessment in general as an 'add-on' rather than an integral part of teaching. The integrationist view may require some rethinking of the way in which that valuable resource, academics' time, is allocated. The pilot case study of Psychology described by Nicol (2006) is interesting in this respect, in that experience has led the staff to halve the formal lecturing time in order to accommodate a much increased level of feedback (including self and peer feedback).

[11] Employability is seen by ESECT as much richer than the narrow 'skills' approach that has been favoured by some governments, and is aligned with what many would see as 'good learning' in higher education.

[12] This is the second part of an ongoing study funded by the Higher Education Academy and conducted by Mantz Yorke and Bernard Longden.

Kift and her colleagues at Queensland University of Technology have found it possible to provide a considerable amount of feedback on a course that has a high number of students enrolled:

> In [Legal Institutions & Method], despite the large enrolment (n>700), students receive written, individualised feedback from their tutor on three items of formative assessment, with the first feedback returned to students in week 3; peers review two items submitted in tutorials; while the opportunities for structured self-assessment have been enhanced – in particular, in Week 7, students self-assess their assessable tutorial participation against the criteria published in the unit Study Guide and receive feedback on that self assessment in the following week from their tutor.
>
> Kift (2004, p.16)

There is a broader issue to which attention needs to be given – that of what 'speed of feedback' can mean in practical terms, the point gaining force where numbers are large. It may also gain force where feedback is provided electronically, since students may expect responses to their submissions on a more or less immediate basis. Some statement of 'the deal' between the institution and the students is probably desirable in order to convey what can be reasonably be expected. As the literature on quality would have it, better to exceed expectations than to fall short (and especially so when perceptions of feedback contribute to 'league tables', rankings or other data that are available).

To what extent does the electronic environment enhance the capacity to provide students with fairly frequent, timely and informative feedback, especially where numbers are large? And to what extent can students be brought into the process of providing feedback?

STUDENT ENGAGEMENT AND COMPLEX ACHIEVEMENT

The concept of student engagement has gathered adherents in recent years, particularly in the United States, where the National Survey of Student Engagement provides a focus. Student engagement implies a pedagogy that stimulates rather than dulls commitment – a pedagogy that involves students in something other than soaking up and squeezing out transmitted knowledge. This might be achieved not through the setting of tasks that are routine (or, as my late colleague Peter Knight would term them, 'tame' – and where there is an approved 'solution') but through the setting of tasks that are 'wild', and open-ended. Such tasks have the potential for plenty of formative assessment (particularly informal) from peers and academics. The summative assessment of the outcomes from these tasks is, of course, particularly challenging. Knight (2007b) suggests that many academic tasks are relatively closed and lead to relatively routine solutions, whereas problems outside academe are often unbounded and have to be solved (perhaps on a 'good enough' basis) under pressure of time and with incomplete information to hand. An admittedly overpolarised comparison, based on Knight's suggestion and using the revision, edited by Anderson and Krathwohl (2001), of the well-known Bloom (1956) *Taxonomy of educational objectives*, is given below.

Figure 1. The cognitive and knowledge dimensions: Academic emphases?

	The cognitive dimension					
The knowledge dimension	1 Remember	2 Understand	3 Apply	4 Analyze	5 Evaluate	6 Create
Factual						
Conceptual						
Procedural						
Metacognitive						

Academic emphases?

Figure 2. The cognitive and knowledge dimensions: Employment emphases?

	The cognitive dimension					
The knowledge dimension	1 Remember	2 Understand	3 Apply	4 Analyze	5 Evaluate	6 Create
Factual						
Conceptual						
Procedural						
Metacognitive						

Employment emphases?

In an academic world that is (internationally) strongly influenced by governments towards the development of 'human capital' (signalled by the use of terms like 'employability' and 'workforce development'), the ability of graduates to deal with complex and 'messy' problems has gained in importance. Performance in workplace settings is not a matter for the first year in all programmes, but is of significance in some vocational programmes, and is particularly relevant to the recently introduced foundation degrees in England because these make an explicit link between academic and workplace activity throughout the programmes. Outside vocationally-oriented programmes, enquiry-based and problem-based learning throw up issues of a comparable complexity even if workplace settings are not involved.

Assessment in workplace and quasi-workplace settings presents many challenges, not least because problems are often not tightly bounded and the available information is incomplete (see discussion in Yorke, 2005). Competence-driven assessment, where conceived narrowly and perhaps through some form of functional analysis, is inadequate to capture the subtlety of performance in such settings. Eraut, for example, writes:

> … treating [required competences] as separate bundles of knowledge and skills for assessment purposes fails to recognize that complex professional actions require more than several different areas of knowledge and skills. They all have to be integrated together in larger, more complex chunks of behaviour.
>
> Eraut (2004, p.804)

Assessment in such circumstances moves towards professional judgement (a theme present in a number of contributions to Boud and Falchikov, 2007) and away from quasi-scientific measurement (see Hager and Butler, 1996, for a polarisation of the two approaches).

Knight (2007a) draws a parallel between 'wicked' problems (those which are unbounded, and to which there is no absolutely right solution) and the range of achievements, or competences' that cannot be precisely defined (such as 'soft skills', graduate attributes and complex achievements). He argues that there are problems with 'measuring' them, and problems stemming from the multiplicity of meanings with which they may be invested. On the other hand, the idiosyncrasy of 'wicked' problems may suggest a partial remedy to the affliction of plagiarism.

In what ways does, and can, assessment contribute to (a) the formative, and (b) the summative, assessment of complex achievements? Where might electronic assessment make a contribution to the assessment of complex achievements?

Mature students

Of students entering full-time first degree programmes in the UK in the academic year 2004-05, around 22 per cent were classed as 'mature' entrants[13]. For part-time programmes, the percentage of mature entrants was approximately 94[14].

Is there a need to differentiate by student age the responses to the questions asked in this paper?

A note of caution regarding the use of computers in assessment

The use of computers in higher education is almost universal – but that 'almost' indicates that, for some students, on-line assessment might not work. Surveys conducted by the Higher Education Research Institute at the University of California, Los Angeles (Pryor et al, 2007) indicate that, by 2005, some 85 per cent of first year students in the US used a computer, with the level of 'frequent' usage of the internet for research or homework reaching around 80 per cent. These figures are very likely to be higher now. There was some disparity amongst racial groups (black and Hispanic students evidencing marginally lower levels of usage) and by income level (as would be expected, usage is lower amongst the less well-off), but relatively little disparity in usage by gender (though there were differences in the *focus* of that use).

In reading through the comments of students who responded recently to a survey of those who did not continue their studies into the second year, the occasional remark was noticed to the effect that the student had been obliged by personal circumstances to make use of institutional, rather than home, computing resources, and that the availability of institutional resources was constrained due to the level of demand. More quantitatively, Nelson et al (2005), reporting a survey of students at Queensland University of Technology in 2004, noted that 92% had home computer access and that 77% were satisfied with access to computers at QUT (which left 23% apparently not satisfied).

[13] i.e. aged 21 and above at entry. For *all* full-time undergraduate programmes, the percentage was around 27. From Table 2a at http://www.hesa.ac.uk/pi/0405/participation.htm (accessed 11 May 2007).
[14] From Table 2b at http://www.hesa.ac.uk/pi/0405/participation.htm (accessed 11 May 2007).

We cannot assume that everyone will be as connected electronically as we would wish.

How can assessment practice involving on-line communication respond to the challenge posed by the (probably small) minority of students who have no, or restricted, access to personal computing resources?

CODA

The area covered by assessment is large, and almost everywhere one looks there are challenges to be met. This paper has presented selected vignettes of issues that demand attention, and whose resolution may be influenced by developments in communications technology. There is plenty of potential for participants to the REAP conference to contribute to the development of assessment theory and practice.

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[15] This paper seems to be no longer available electronically. However, the 'eleven conditions' and commentary can be found in a paper by Graham Gibbs at www.brookes.ac.uk/services/ocsd/1_ocsld/lunchtime_gibbs_3.doc (accessed 21 May 2007).

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