Rethinking Assessment and Feedback

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Plan

- Re-engineering Assessment Practices (REAP) project
- Concepts and ideas
- Case study of practice from REAP
- Guidelines for implementation

- Nationally only **55%** of students think feedback is prompt and had helped to clarify things they did not understand [Scotland: **48%**]
- Nationally only **63%** of students agree that have received detailed comments on their work [Scotland: **49%**]

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Re-engineering Assessment Practices project

- Scottish Funding Council (£1m)
- Strathclyde, Glasgow and Glasgow Caledonian
- Large 1st year classes (160-900 students)
- A range of disciplines (19 modules ~6000 students)
- Many technologies: online tests, simulations, discussion boards, e-portfolios, e-voting, peer/feedback software, VLE, online-offline
- Learning quality and teaching efficiencies
- Assessment for learner self-regulation

First Year: The academic experience

What is important in the first year?

- Coping with transition
- Understanding what is required
- Engagement with academic programmes
- Receiving support and feedback
- Experiences of success
- Feeling in control of own learning
- Belief that you can succeed
- A sense of belonging within the academic and social culture

Based on research by Yorke (UK) and Tinto (US)

Background (1)

- Gibbs, G. & Simpson, C (2004) Conditions under which assessment supports students learning, *Learning and Teaching in Higher Education*, 1, 3-31.

See:

- Formative Assessment in Science Teaching (FAST) project at: http://www.open.ac.uk/science/fdtl/

Gibbs and Simpson (2004)

Assessment tasks [Conditions 1-4]

1. Capture enough study time (in and out of class)
2. Are spread out evenly across timeline of study
3. Lead to productive activity (deep vs surface)
4. Communicate clear and high expectations

i.e concern here is with 'steers' about how much work to do

Background (2)

Literature Review

- Nicol, D. & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, 34 (1), 199-218
- Nicol, D & Milligan, C. (2006), Rethinking technology-supported assessment practices in relation to the seven principles of good feedback practice. In C. Bryan & K. Clegg, *Innovative assessment in higher education*, Routledge.

Background

- Student Enhanced Learning through Effective Feedback [SENLEF] project funded by HE Academy
- REAP project: www.reap.ac.uk

Rethinking assessment and feedback

1. Consider self and peers as much as the teacher as sources of assessment and feedback
   - Tap into different qualities than teacher can provide
   - Saves time
   - Provides considerable learning benefits (lifelong learning)

2. Focus on every step of the cycle:
   - Understanding the task criteria (Sadler, 1983)
   - Applying what was learned in action

3. Not just written feedback:
   - Also oral, computer, vicarious, formal and informal

Scaffolding self regulation: 7 principles of good feedback (assessment design)

1. Clarify what good performance is (goals, criteria, standards).
2. Facilitate the development of reflection and self-assessment in learning
3. Deliver high quality feedback to students: that enables them to self-correct
4. Encourage peer and student-teacher and peer dialogue around learning
5. Encourage positive motivational beliefs & self esteem through assessment
6. Provide opportunities to act on feedback
7. Provide information to teachers that can be used to help shape their teaching (making learning visible)

Source: Nicol and Macfarlane-Dick (2006)

Two super principles

SUPER-PRINCIPLE 1: time and effort on task (**structured engagement**) i.e. steers on how much work to do and when – Gibbs and Simpson 4 conditions

SUPER-PRINCIPLE 2: developing learner self-regulation (**empowerment/self-regulation**) i.e steers to encourage ownership of learning – the seven principles discussed above.

Case examples from REAP – applying these conditions/ principles

REAP: Example 1: Psychology

Psychology

- 560 first year students
- Mixture of psychology majors (130) and those taking psychology only for one year (430)
- 6 topic areas, 48 lectures, 4 tutorials, 12 practicals
- Assessment; 2 x MCQs (25%), tutorial attendance (4%), taking part in experiment (5%), essay exam (66%)

Problems identified

- No practice in writing skills but required in the exam
- More detail provided in lectures than mentioned in exams (not enough independent reading)
- No feedback except on MCQs (percent correct)
- Didn't want to increase staff workload
- Wanted to improve overall exam marks
- And standard of entrant to second year

Psychology Redesign

- Discussion board in WebCT
- Students in 85 discussion groups of 7-8, same groups throughout year
- Also open discussion board for class
- Friday lectures dropped
- Students discover for themselves through collaboration what would have been presented in the Friday lecture
- Series of online tasks

Structure of group tasks

6 cycles of 3 weeks (one cycle x major course topic)

- First week: 'light' written task (e.g. define terms) = 7 short answers (all answer)
- Second week = guided reading
- Week three: 'heavy' written task: students answer guided questions and then collaborate in writing a 700-800 word essay.

Within each week:

- The Monday lecture – introducing material
- Immediately after lecture, task posted online – for delivery the following Monday
- Model answers (selected from students) posted for previous week's task

The teaching role

- Participation in the discussions was compulsory but not marked (this year there is 2% mark for participation)
- The course leader provided general feedback to the whole class – often motivational
- He encouraged students to give each other feedback
- And he selected the model answers
- The group discussions were not moderated
- Around 8 teaching assistants monitored the discussions and reported non-participation to the teacher

Online Project 1 – Classical Conditioning Phenomena.

Each Group Member should read the Passer chapter from the beginning to at least as far the section which begins 'Applications of Classical Conditioning'. Satisfy yourself that you can answer EACH of the questions below. Then agree as a group who will answer what.

Project 1 is to answer these questions as fully as you can:

1) What type of response is susceptible to Classical Conditioning?

2) Why does Extinction occur?

3) What is Spontaneous Recovery?

4) What does the phenomenon of Spontaneous Recovery tell us about the nature of Extinction in Classical Conditioning?

5) What is Generalisation?

6) What is Discrimination?

7) What is Higher Order Conditioning?

Project 9: An example of 'heavy' task

The Task - 800 word essay:

Assess the strengths and weaknesses of Freud's and Eysenck's theories of personality. Are the theories incompatible?

readings suggested

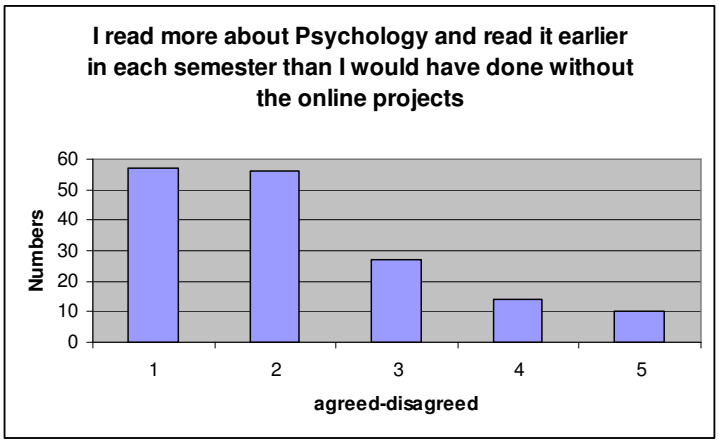
questions provided – all should try

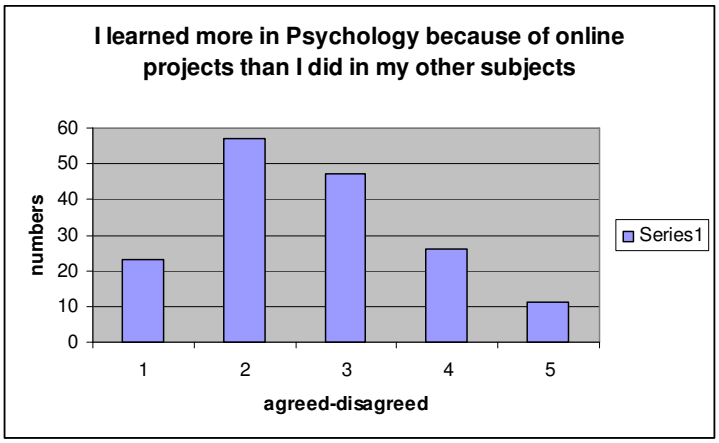
and advice on how to divide task given

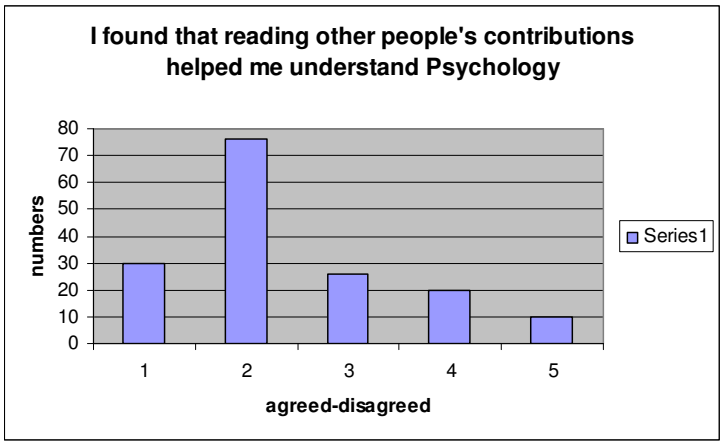
Benefits

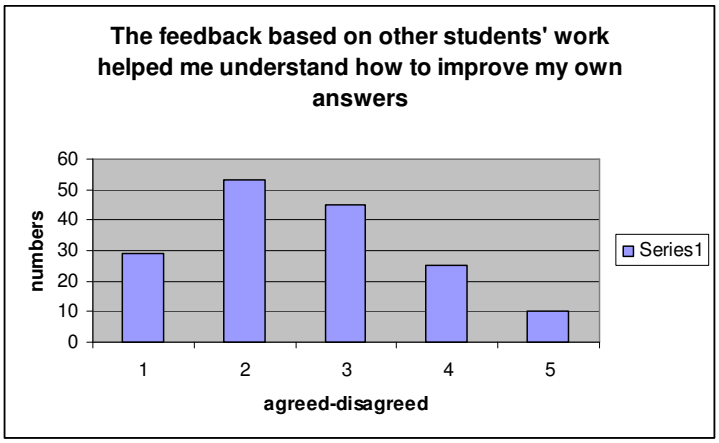
- Written responses of an exceedingly high standard (sometimes surpassing 3rd year)
- Spontaneous online discussions about learning and leaner responsibility
- High levels of motivation, atmosphere in class improved
- Some students burdened by workload – easily detected
- Some requested to move groups (5 groups)
- Online interactions showed powerful 'scaffolding'
- Interaction and feedback possible with 560 students
- Easy for tutors to monitor participation
- Peer feedback and self feedback (model answers) harnessed
- **Improved mean exam performance (up from 51-57%)**

Has it worked?






I found that reading other people's contributions helped me understand Psychology
numbers
80
70
60
50
40
30
20
10
0
1
2
3
4
5
agreed-disagreed
Series1


The feedback based on other students' work helped me understand how to improve my own answers
numbers
60
50
40
30
20
10
0
1
2
3
4
5
agreed-disagreed
Series1

Online postings/interaction

- 24,362 messages posted by groups
- Average number of postings per student 44.3
- 1067 postings to general open discussion forum
- Students set up online study groups for other subjects

- Structured tasks online triggered important social-cognitive processes

Relation to the Gibbs & Simpson's four assessment conditions

1. Tasks require significant study out of class (*condition 1*)
2. Tasks are distributed across topics and weeks (*condition 2*)
3. They move students progressively to deeper levels of understanding (*condition 3*)
4. There are explicit goals and progressive increase in challenge (*condition 4*)

Relation to 7 feedback principles

1. Standard format and model answers provide progressive clarification of expectations (*principle 1*)
2. Students encouraged to self-assess against model answer (*principle 2*)
3. Course leader provides motivational and meta-level feedback and selects model answers (*principle 3*)
4. Online peer discussion aimed at reaching consensus is core feature of design about response (*principle 4*)
5. Focus on learning not just marks, sense of control/challenge enhanced motivation (*principle5*)
6. Repeated cycle of topics and tasks provide opportunities to act on feedback (*principle 6*)
7. VLE captures all interactions allowing course leader to monitor progress and adapt teaching (*principle 7*)

What can we learn from these case studies?

- Use of simple technologies (discussion board)
- Considerable thought gone into the learning design [which is transferable]
- The drivers were learning improvements rather than technology (context of use)
- Key finding across studies was need to balance structure and learner control
- An important finding was the way that the social and the academic processes were shown to be mutually supportive

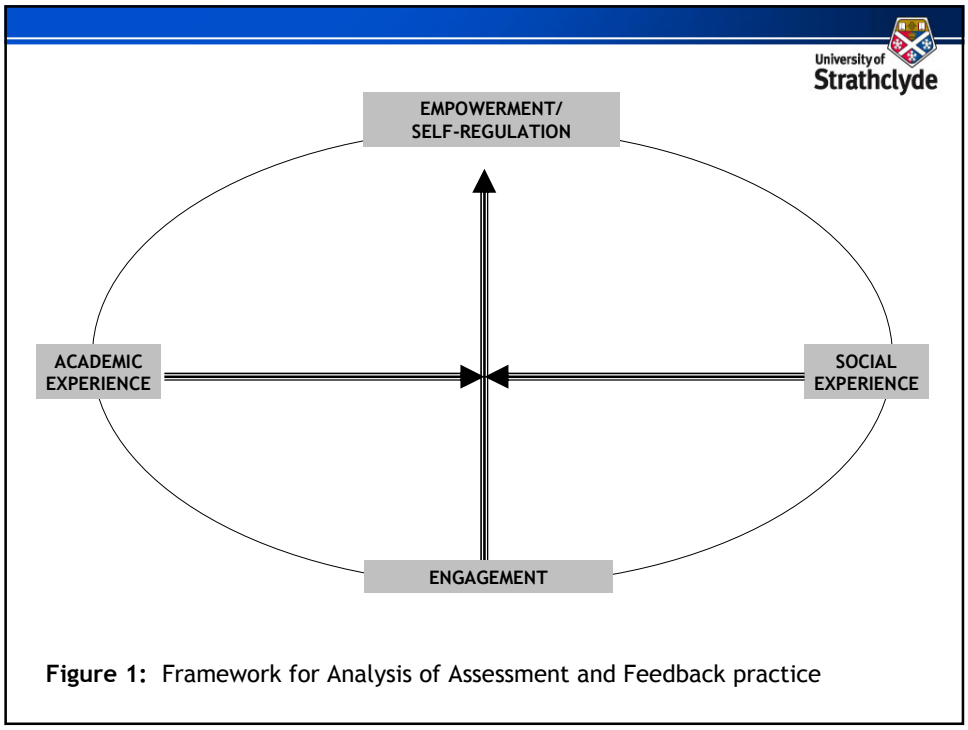
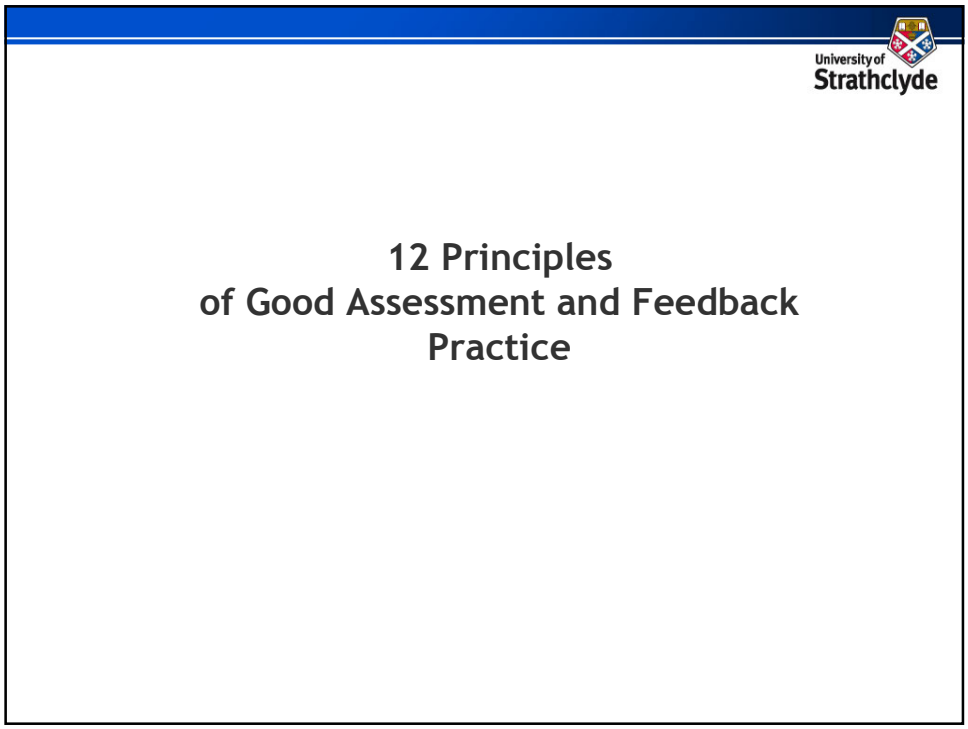


Figure 1: Framework for Analysis of Assessment and Feedback practice



Good formative assessment and feedback practices should:

1. Help clarify what good performance is (goals, criteria, standards)
2. Encourage 'time an effort' on challenging learning tasks
3. Deliver high quality feedback information that helps learners self-correct
4. Provide opportunities to act on feedback
5. Ensure that summative assessment supports formative learning processes
6. Encourage interaction and dialogue around learning (peer, teacher-student)
7. Facilitate the development of self-assessment and reflection in learning
8. Give choice in the topic, method, criteria, weighting or timing of assessments.
9. Involve students in decision making about assessment policy and practice
10. Support the development of learning groups and communities
11. Encourage positive motivational beliefs and self-esteem
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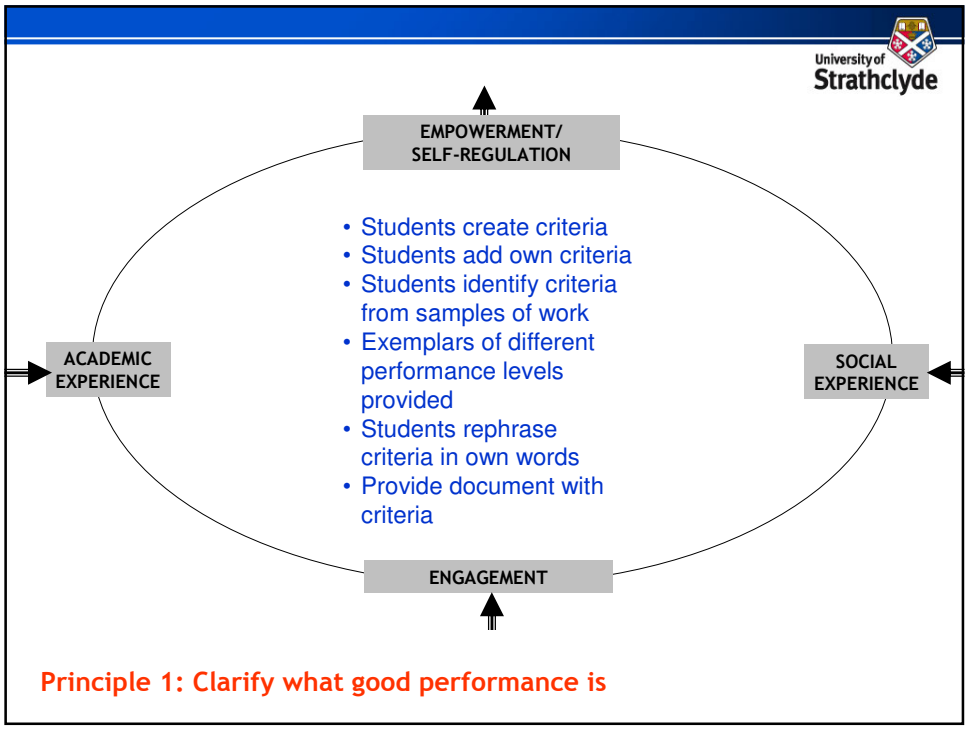
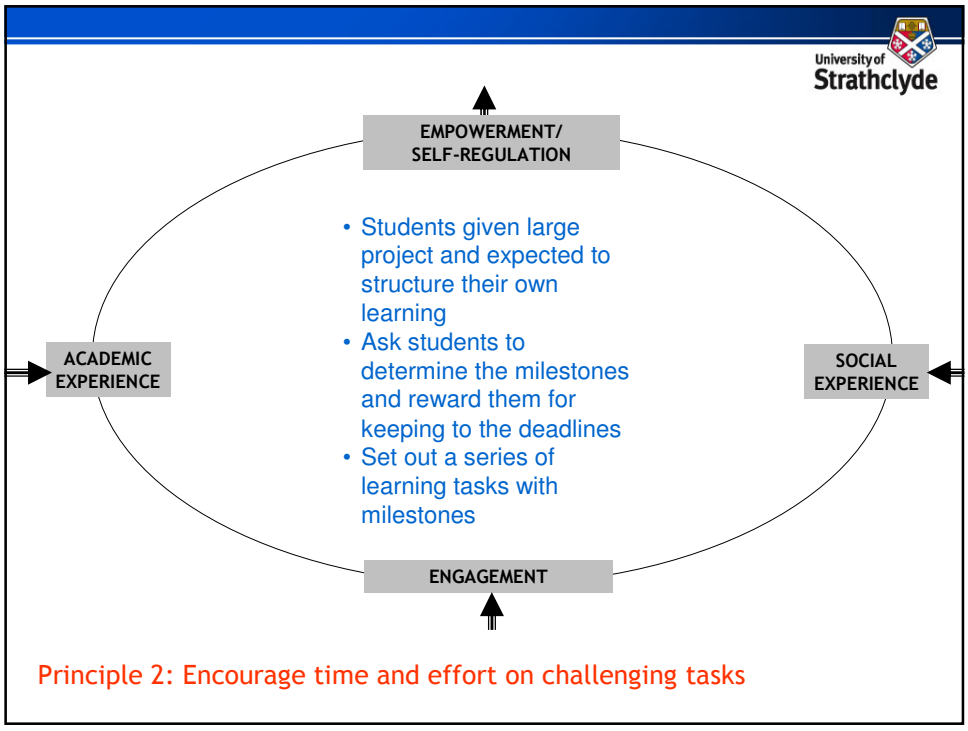
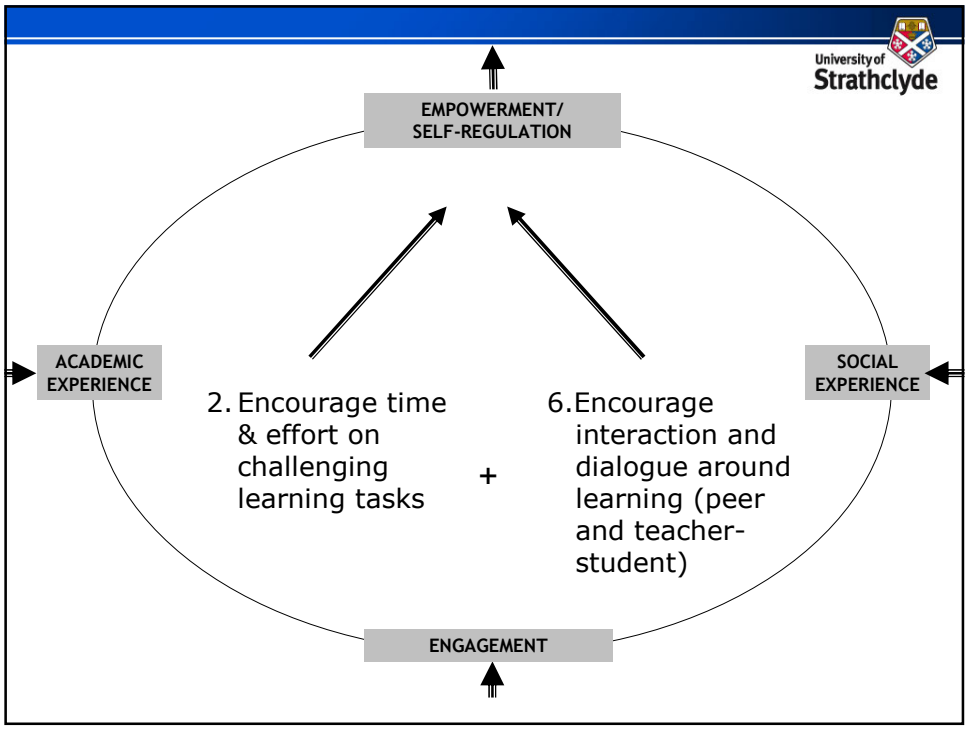
Dynamics of Implementation

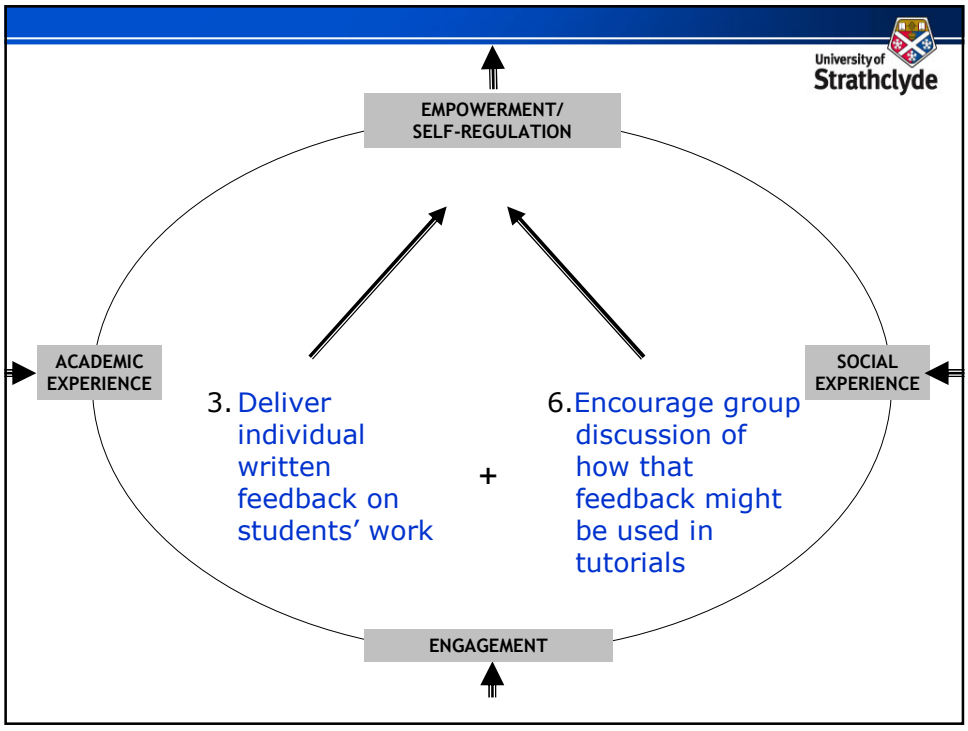


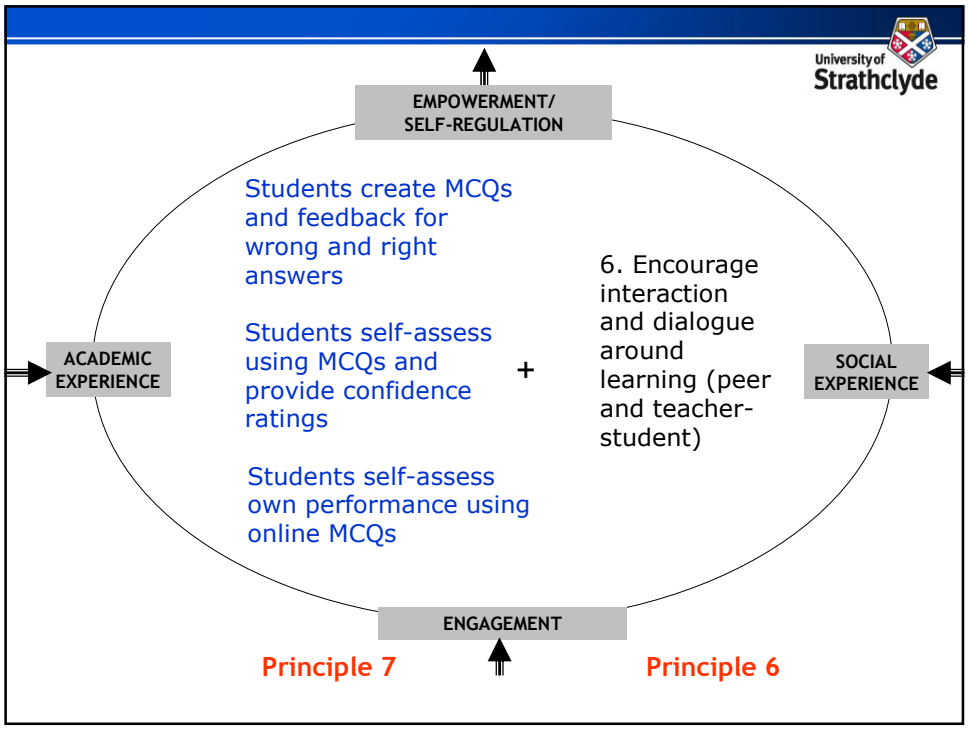
Principle 1: Clarify what good performance is

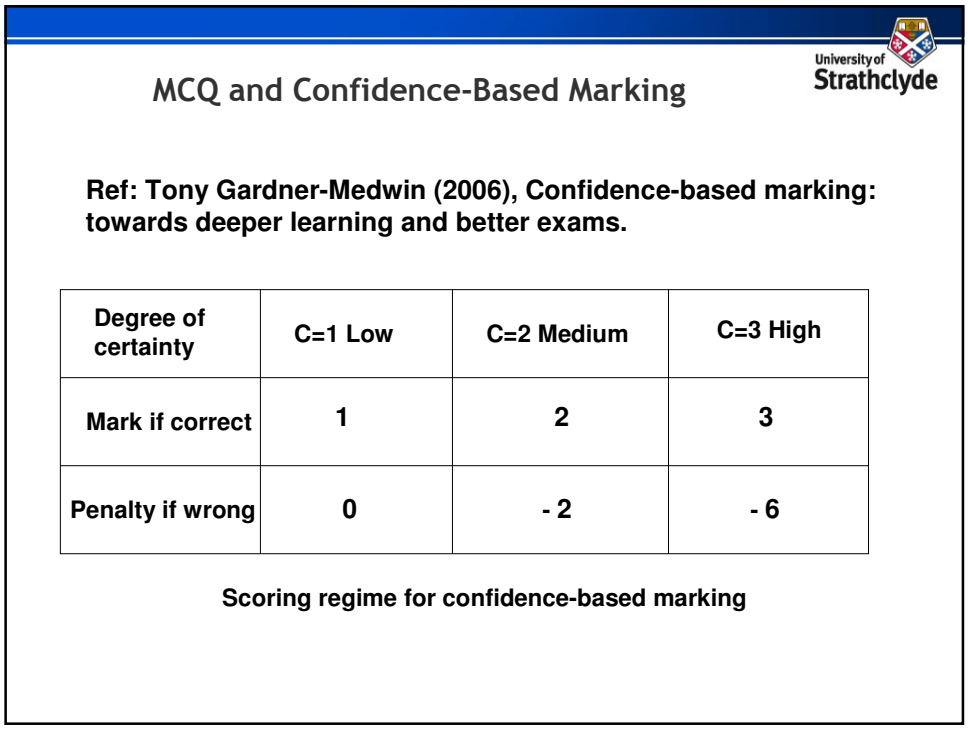


Principle 2: Encourage time and effort on challenging tasks


University of Strathclyde
EMPOWERMENT/ SELF-REGULATION
ACADEMIC EXPERIENCE
SOCIAL EXPERIENCE
2. Encourage time & effort on challenging learning tasks
+
6. Encourage interaction and dialogue around learning (peer and teacher-student)
ENGAGEMENT


University of Strathclyde
EMPOWERMENT/ SELF-REGULATION
ACADEMIC EXPERIENCE
SOCIAL EXPERIENCE
3. Deliver individual written feedback on students' work
+
6. Encourage group discussion of how that feedback might be used in tutorials
ENGAGEMENT


University of Strathclyde
EMPOWERMENT/ SELF-REGULATION
Students create MCQs and feedback for wrong and right answers
Students self-assess using MCQs and provide confidence ratings
Students self-assess own performance using online MCQs
+
6. Encourage interaction and dialogue around learning (peer and teacher-student)
ACADEMIC EXPERIENCE
SOCIAL EXPERIENCE
ENGAGEMENT
Principle 7
Principle 6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MCQ and Confidence-Based Marking
Ref: Tony Gardner-Medwin (2006), Confidence-based marking: towards deeper learning and better exams.
Degree of certainty
C=1 Low
C=2 Medium
C=3 High
Mark if correct
1
2
3
Penalty if wrong
0
- 2
- 6
Scoring regime for confidence-based marking

Guidelines for Implementation

1. A single principle or many?
2. Active involvement of students
3. Tight-loose – maintain fidelity to the principles (tight) but encourage disciplines develop their own techniques of implementation (loose)
4. Clarify students' responsibilities
5. Evaluate changes (process indicators)
6. And where ICT can add value
7. Alternate solo and group work
8. Share your learning designs

My Publications

- **Nicol, D (2008),** Transforming assessment and feedback: Enhancing integration and empowerment in the first year, To be published by Quality Assurance Agency, Scotland
- **Nicol, D (in press),** Assessment for learner self-regulation: Enhancing achievement in the first year using learning technologies, *Assessment and Evaluation in Higher Education,*
- **Nicol, D (2007)**, Laying the foundation for lifelong learning: cases studies of technology supported assessment processes in large first year classes, *British Journal of Educational Technology,* 38(4), 668-678
- **Nicol, D (2007)** E-assessment by design: using multiple-choice tests to good effect, *Journal of Further and Higher Education*.31(1), 53-64.
- **Nicol, D. & Milligan, C. (2006)**, Rethinking technology-supported assessment in relation to the seven principles of good feedback practice. In C. Bryan and K. Clegg, Innovations in Assessment, Routledge.
- **Nicol, D, J. & Macfarlane-Dick (2006),** Formative assessment and self-regulated learning: A model and seven principles of good feedback practice, *Studies in Higher Education,* 31(2), 199-218.
- See also www.reap.ac.uk for copies.

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Questions