

# **Improving student learning through assessment and feedback**

Graham Gibbs

University of Winchester

## About TESTA

- NSS scores for assessment and feedback worse than for any other aspect of student experience, and improving slowest
- TESTA started four years ago at Winchester + three other universities
  - Way of thinking about assessment
  - Way of evaluating impact of assessment
- Now 28 Universities including a Russell Group consortium and Berkeley
- TESTA can improve NSS scores

# Degree programme using TESTA to improve assessment regime

	NSS Question	Before	After	Increase
	Clear criteria	37%	96%	59%
	Fair assessment	50%	87%	37%
	Prompt feedback	73%	96%	23%
	Comments detailed	56%	79%	23%
	Feedback helped	42%	79%	37%
	Overall Satisfaction	48%	96%	37%

# University of Winchester

	NSS question	2009	2012	Increase
7	Feedback on my work has been prompt	47%	72%	25%
		Bottom Quartile nationally	Top Quartile nationally	

## NSS assessment scores nationally

- Average increase annually <1%
- Edinburgh scores stuck at 39% despite 2-year initiative ... now part of Russell Group consortium using TESTA
- First three degree programmes at Winchester to use TESTA now ranked top nationally in their discipline for student satisfaction (two of them 100%)

# Chapter 1

..in which we encounter a mystery

# Undergraduate degree programme

- Committed and innovative teachers
  - Most marks from coursework, of very varied forms
  - Few exams
  - Lots of written feedback on assignments: 15,000 words
  - Learning outcomes and criteria clearly specified
- ...looks like a 'model' assessment environment

**but** it does not support learning well. Students:

- Don't study many hours and they distribute their effort across few topics and weeks
- Don't think there is a lot of feedback or that it is very useful, and don't make use of it
- Don't think it is at all clear what the goals and standards are
- ...are unhappy!

## Chapter 2

..in which we discover that students respond to our assessment in ways that reduce their learning



*“I just don’t bother doing the homework now. I approach the courses so I can get an ‘A’ in the easiest manner, and its amazing how little work you have to do if you really don’t like the course.”*

Snyder, B.R. (1971) The Hidden Curriculum, at MIT

*“I am positive there is an examination game. You don’t learn certain facts, for instance, you don’t take the whole course, you go and look at the examination papers and you say ‘looks as though there have been four questions on a certain theme last year, and the professor said that the examination would be much the same as before’, so you excise a good bit of the course immediately...”*

Miller, C.M.I. & Parlett, M. (1974) ‘Up to the Mark - a study of the examination game’, at Edinburgh

*“One course I tried to understand the material and failed the exam. When I took the resit I just concentrated on passing and got 98%. My tutor couldn’t understand how I failed the first time. I still don’t understand the subject so it defeated the object, in a way”*

*Gibbs, G. (1992) Improving the quality of student learning.*

*“The tutor likes to see the right answer circled in red at the bottom of the problem sheet. He likes to think you’ve got it right first time. You don’t include any workings or corrections – you make it look perfect. The trouble is when you go back to it later you can’t work out how you did it and you make the same mistakes all over again”*

*Gibbs, G. (1992) Improving the quality of student learning.*

## Chapter 3

...in which teachers use assessment methods  
to make students learn

- The case of the Psychologist
- The case of the Philosopher of Education
- The case of the Doctor
- The case of the Architect
- The case of the Pharmacist
- The case of the Engineer
- The case of the Businessman
- The case of the Geographer

## The case of the engineer

- Weekly lectures, problem sheets and classes
- Marking impossible
- Problem classes large enough to hide in
- Students didn't spend enough time on the problems
- Exam marks: 55% down to 45%

## The case of the engineer

- Course requirement to complete 50 problems
- Peer assessed in six 'lecture' slots
- Marks on problems do not count
- Lectures, problems, classes, exams unchanged



## The case of the engineer

- Course requirement to complete 50 problems
- Peer assessed in six 'lecture' slots
- Marks do not count
- Lectures, problems, classes, exams unchanged
- Av. exam marks increased from 45% to 85%

Why did it work?

## The case of the engineer

- time on task
- social learning and peer pressure
- timely and influential feedback
- learning by assessing
  - error spotting
  - developing judgement
  - self-supervision
- ‘meta-cognitive awareness and control’

## Chapter 4

..in which teachers give students feedback, but they don't read it

## Why don't students read feedback?

- It is very poor quality feedback: little of it, random, insensitive, unreadable..
- It also has marks on it
- It does not make any sense
- It relates to goals and standards students don't understand
- It is too late to be useful
- It is about a topic they will never study again
- It is about how to tackle an assignment that is different from their next assignment
- ...it does not **feed forwards**

## Chapter 5 The story so far...

## Assessment supports student learning when...

- It captures sufficient student time and effort, and distributes that effort evenly across topics and weeks – **time on task**
- It engages students in high quality learning effort – focussed towards the goals and standards of the course, which students understand – **engagement, deep approach**
- It provides enough, high quality, **feedback**, in time to be useful, and that focuses on learning rather than on marks or on the student
- Students pay attention to the feedback and use it to guide future studying (**feedforwards**) and to learn to '**self-supervise**'

## Changing assessment at module level

- Micro-level tactics to address weaknesses in the support of learning (e.g. low student effort)
- Gibbs, G. (2009) *Using Assessment to Support Student Learning*. On line at Leeds Metropolitan University
- Teachers have difficulty making assessment very different on their module if no-one else changes..

## Chapter 6

..in which we discover differences between programmes in the way students experience assessment



# AEQ: Assessment Experience Questionnaire

- Quantity and distribution of effort
- Quality, quantity and timeliness of feedback
- Use of feedback
- Impact of exams on quality of learning
- Quality of study effort: deep and surface approach
- Clarity of goals and standards
- Appropriateness of assessment

Time demands and distribution of student effort	University A	University B
	% disagree or strongly disagree	
<i>On this course it is possible to do quite well without studying much</i>	64%	33%

	University A	University B
Feedback	% agree	
<i>On this course I get plenty of feedback on how I am doing</i>	68%	26%
<i>Whatever feedback I get comes too late to be useful</i>	11%	42%

## Chapter 8

- ..in which we discover what kind of assessment regime leads to good (or poor) learning

# Characteristics of programme level assessment environments

- % marks from examinations (% from coursework)
- Volume of summative assessment
- Volume of formative only assessment
- Volume of (formal) oral feedback
- Volume of written feedback
- Timeliness: days after submission before feedback provided

## Range of characteristics of programme level assessment environments

- % marks from exams: 0% - 100%
- number of times work marked: 11 – 95
- variety of assessment: 2 - 18
- number of times formative-only assessment: 0 – 134
- number of hours of oral feedback: 1 – 68
- number of words of written feedback: 2,700 – 15,412
- turn-round time for feedback: 1 day – 28 days

# Patterns of assessment features within programmes

- every programme that has much summative assessment has little formative assessment, *and vice versa*
- no examples of much summative assessment and much formative assessment
- there may be enough resources to mark student work many times, or to give feedback many times, but not enough resources to do both
- ...it is clear which leads to most learning

# Relationships between assessment characteristics and student learning

- ...wide variety of assessment, much summative assessment, little formative-only assessment, little oral feedback and slow feedback are all associated with a negative learning experience:
  - less of a deep approach
  - less coverage of the syllabus
  - less clarity about goals and standards
  - less use of feedback



# Relationships between assessment characteristics and student learning

- Much formative-only assessment, much oral feedback and prompt feedback are all associated with a positive learning experience:

- more effort
- more deep approach
- more coverage of the syllabus
- greater clarity about goals
- more use of feedback
- more overall satisfaction...

...even when they are also associated with lack of explicitness of criteria and standards, lack of alignment of goals and assessment and a narrow range of assessment.

# Why?

- being explicit does not result in students being clear
- ...but discussing exemplars does
- explicitness helps students to be 'selectively negligent'
- students experience varied forms of assessment as confusing: ambiguity + anxiety = surface approach
- variety means feedback can't feed forwards
- variety means students have little opportunity to get better at anything
- feedback improves learning most when there are no marks
- more time to give feedback when don't have to mark
- possible to turn feedback round quickly when there are no QA worries about marks (or cheating)

## Chapter 8

- ..in which we solve the mystery

## Assessment case study: what is going on?

- Lots of coursework, of very varied forms (lots of innovation)
  - Very few exams
  - Masses of written feedback on assignments
  - Four week turn-round of feedback
  - Learning outcomes and criteria clearly specified
- ...looks like a 'model' assessment environment

But students:

- Don't put in a lot of effort and distribute their effort across few topics
- Don't think there is a lot of feedback or that it very useful, and don't make use of it
- Don't think it is at all clear what the goals and standards are

## Assessment case study: what is going on?

- All assignments are marked and they are all students spend any time on. Not possible to mark enough assignments to keep students busy. No exams or other unpredictable demands to spread effort across topics. Almost no required formative assessment
- Teachers all assessing something interestingly different but this utterly confuses students. Far too much variety and no consistency between teachers about what criteria mean or what standards are being applied. Students never get better at anything because they don't get enough practice at each thing.
- Feedback is no use to students as the next assignment is completely different.
- Four weeks is much too slow for feedback to be useful, and results in students focussing on marks.

## Assessment case study: what to change?

- Reduce variety of assignments and plan progression across three years for each type, with invariant criteria, and many exemplars of different quality, for each type of assignment
- Increase formative assessment: dry runs at what will later be marked, sampling for marking.
- Reduce summative assessment: one per module is enough (24 in three years) or longer/bigger modules
- Separate formative assessment and feedback from summative assessment and marks ... give feedback quickly, marks later, or feedback on drafts and marks on final submission
- Teachers to accept that the whole is currently less than the sum of the parts (and current feedback effort is largely wasted) and give up some autonomy within modules for the sake of students' overall experience of the programme – so teachers' effort is worthwhile

## Chapter 9

- in which we demonstrate improvements in student learning

## Case Study 2

- whole programme shift from summative to formative assessment
- linking a narrower variety of types of assignment across modules so feedback can feed in to future modules
- new 'core team' to handle increased face to face feedback
- parallel changes by individual teachers: e.g. self-assessment
- reduction in exams, abandoned most MCQs

Impact: AEQ scores moving in the right direction for:

- Quantity and quality of feedback
- Use of feedback
- Appropriate assessment
- Clear goals and standards
- Surface approach (less of it!)
- Overall satisfaction



# EPILOGUE

## Diseases, diagnoses and cures

- 1 Too much summative assessment, and too little formative assessment
- 2 Too wide a variety of types of assessment
- 3 Insufficient formal requirements: lack of time on task
- 4 Inconsistent marking standards
- 5 A compartmentalised focus on individual courses at the expense of programme coherence
- 6 Poor feedback: too little and too slow
- 7 Lack of oral feedback and discussion of assessment and the negotiation of meaning of goals and standards
- 8 Orientation of student effort towards reproducing course content in assignments or exams

TESTA: Transforming the Experience of  
Students Through Assessment

<http://www.testa.ac.uk/>

FASTECH – using technology to solve the same  
assessment problems

<http://www.fastech.ac.uk/>