



College of Science and Engineering

**Evaluation of the 1st year of implementation of the
Learning and Teaching Strategy**

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The evaluation strategy



Questionnaire 1 - given at the start of the semester

responsible learning

beliefs about what influences academic success

academic self confidence

intrinsic reasons for taking the course

Questionnaire 2

responsible learning

perceptions of the course

Qualitative data

tried several methods, settled on group interviews in selected courses



The courses where sufficient data was collected



Semester 1

AM1/MM1

Physics 1A

Origin and Diversity of Life

Semester 2

AM2/MM2

Physics 1B

Molecules and Cells

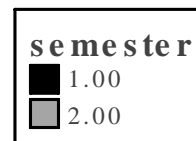
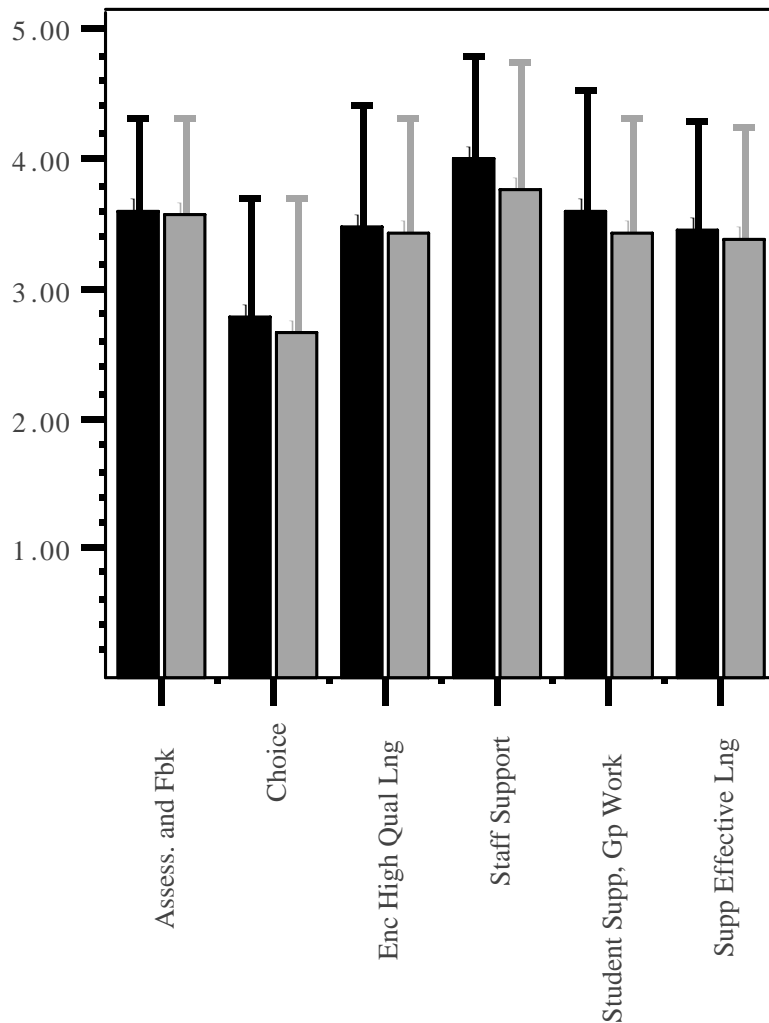
Electrical Engineering 1

(we also collected data from engineering courses which were yet to be developed in relation to the strategy)

Perceptions of the courses and the principles

Questionnaire Scale	Scale Description	Correspondence to L and T Strategy and Vanguard Principles
Assessment and Feedback	Assessment and feedback promote understanding and reflection	Self-assessment (P) Progression and excellence (P) Assessment for learning (S)
Choice and openness	Student choice over methods and content of study, debate over content possible	Empowerment of students (P) Flexibility of learning styles (S)
Encouraging High Quality Learning	Teaching challenges students' understanding and promotes engagement with 'ways of thinking and practising'	Learning with enquiry (S)
Staff Support	Staff share enthusiasm and show concern for students as learners	No direct correspondence but known from literature to be relevant
Student Support and Group Work	Student group work promotes enthusiasm for the subject and better understanding	Collaborative learning (S) Interactive/group work (P)
Supporting Effective Learning	The course encouraged reflection on learning processes and gave students confidence in taking more responsibility	Personal learning (S) Professional student (P)

Overall perceptions of the courses



Error Bars show Mean +/- 1.0 SD

Bars show Means

5 = positive perception

Paired data where students completed both semesters' perceptions items in Physics, Biology or Maths. N = 270

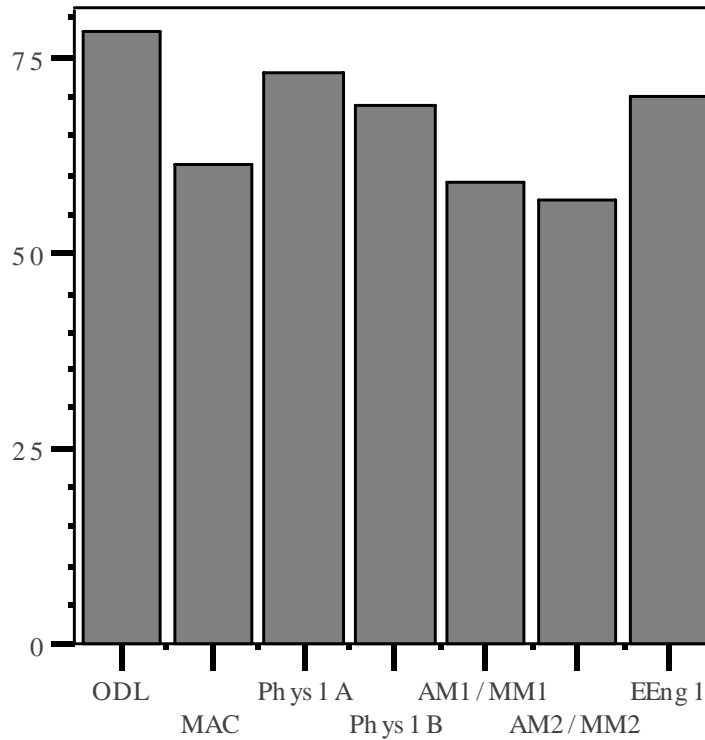
Perceptions of the courses - details

The data suggest it is possible for the same students to perceive different courses differently (but best paired sample size = 72, Physics1A with AM1/MM1)

The paired data from Physics 1A and AM1/MM2 very tentatively suggest that the more positively perceived Physics 1A resulted in better responsible learning effects for the same students (but only 14 students completed the 4 questionnaires needed to make this comparison)

The above might be explained by better intrinsic motivation for Physics rather than the students' perceptions of the courses.

'This course has made me more confident in my ability to take responsibility for my own learning'

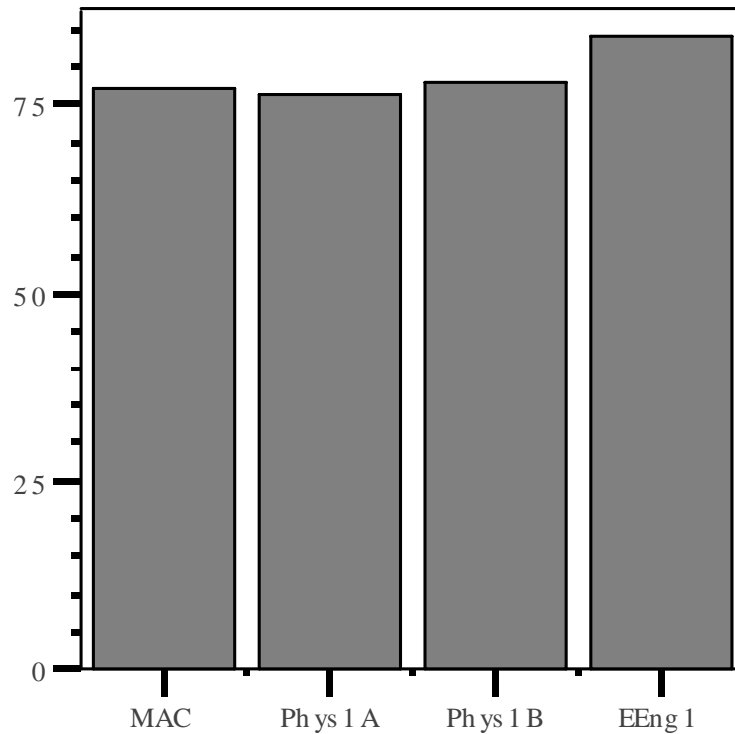


Bars show % of Cases > 3

Percentage of students who agree or agree somewhat with this question

(highest disagreement on any course was MAC at 29%)

The 'clicker' questions in lectures helped me develop my understanding



Bars show % of Cases > 3

Percentage of students who agree or agree somewhat with this question

Relationships between responsible learning and perceptions of courses

N = 880 first year CSE	Assess. and Feedback	Choice	Encourage High Quality Learning	Support Effective Learning	Staff Support	Student support and group work	Perceived easiness of course
Monitor Studying	.47	.21	.39	.39	.33	.25	.22
Organise Studying	.38	.19	.31	.38	.22	.23	.27
Manage Effort	.40	.18	.37	.39	.27	.22	.30

Spearman rank correlation coefficients (2-tailed) all correlations significant at $p < .01$



Responsible learning scores across the year



**Overall scores all above the mid-point of the scale
(across all of the data)**

**Very slightly higher scores at the end of sem 2 as compared with sem 1
(using all maths, physics and biology data)**

**In sem 1 marked drop in scores from start to end of semester
(students completing all 4 questionnaires for maths, physics or biology)**

**In sem 2 smaller drop in scores from start to end of semester
(students completing all 4 questionnaires for maths, physics or biology;
similar pattern in electrical engineering 1)**

Relationships between what the students bring and responsible learning

N = 880 first year CSE	Intrinsic Reasons for Course	Academic Self- Confidence	Success Relates to Effort/Adaptation
Monitor Studying	.26	.22	.28
Organise Studying	.19	.18	.19
Manage Effort	.23	.22	.24

Spearman rank correlation coefficients (2-tailed) all correlations significant at $p < .01$



Limitations of our local evaluation data set



Some crucial data are missing

comparative data for courses more and less in line with strategy

**comparative data pre and post course development
(some possibilities in engineering for 2007/08)**

longitudinal data over several years

more complete data sets (many missing questionnaires)

data from struggling/failing students

**Question as to whether there could ever be sharp enough comparisons for
really clear cut findings**



The National Student Survey

Lowest scores in CSE were on assessment and feedback

The questions with the lowest scores were as follows

Feedback on my work has been prompt

I have received detailed comments on my work

Feedback on my work has helped me clarify things I did not understand

Possible issues for the Learning and Teaching Strategy Implementation

The questions favour feedback given to individual students by staff

Narrow student views of what constitutes feedback

(e.g. not clickers or self-assessment)

The title is centered between two blue decorative lines that taper to points at the ends.

The National Student Survey

Other aspects of the survey which might prove an issue in relation to the Strategy

Academic support: I have received sufficient advice and support with my studies.

Personal development: Two of three questions here are about communication/self presentation which are not an obvious match with the Strategy



Implications

Assessment and feedback key in both data sets

Emphasis on formative assessment lost between Strategy and Principles?

Student involvement in assessment is clearly valuable but should it replace staff involvement?

How can summative assessment be reduced (as per the strategy) without reducing opportunities for students to practice and get feedback?



Implications



What happens when some aspects of the strategy are pursued more than others?

For example, reducing compulsion to attend, summative assessment and checks on students without enough emphasis on helping students make the transition to this new way of learning

Many people fitting in reflection on their teaching and Strategy implementation at the margins of very busy roles? Which may explain e.g. low attendance at events on assessment and feedback?

How could mainstream academics' engagement with the Strategy be better supported and rewarded?



Possibilities for the future of the evaluation



Fill some of the gaps in the data mentioned earlier

Explore grades, failure rates and withdrawals

Further investigate experiences of most successful and struggling students

Collect data from staff about their perceptions and experiences



**Questions about this presentation
before we look at the qualitative data?**





Emerging themes from the interview data



Each group will be given a page of interview extracts representing an emerging theme from the interview data

In your groups please discuss ...

Whether these comments seem typical of students you know?

What questions these interview extracts raise for you?

What implications these student comments have for course organisers?



The future of the evaluation process

Individually first and then in groups please think about ...

What puzzles you about how students behave on courses you are involved in?

What burning questions would you really like the evaluation to answer for you?

What data collection would you prioritise for the evaluation?