

Kingston University, UK

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LEARNING OUTCOME

The range of ability and inevitable feeling of anonymity for students in lectures were two challenges Kingston University hoped to overcome by **using MyMathLab for weekly summative assessment**. They were impressed with MyMathLab's ability both to **enhance student learning as well as to assess it**.

Course

Basic Maths and Information Technology

Textbook in use

Foundation Maths, 2008
Croft and Davidson (Customised)

Type of data collected

Anecdotal student feedback

Data collection period

2008–10

Course design

Kingston has a thriving School of Life Sciences in which most of its first year degree students have to study a module covering both the essential mathematics and information technology which they will need throughout their course. The mathematics entry requirement for these courses is a grade C at GCSE. Bearing in mind that this can be achieved without any great mastery of the basics (Foster, 2001), and that students will probably not have studied mathematics for at least two years prior to arriving at university, it is no surprise that many of them feel concerned about taking this module.

This module runs in both semesters, with about 70 students in each. Although we offer additional support in the form of MathsAid drop-in clinics (Atkins 2005) for all students in the university, the delivery mode for the module in question is, by necessity, just two hours of mathematics per week in a large lecture theatre. The unavoidable range of ability in the class, and the inevitable feeling of anonymity for some, is also amongst the challenges which the lecturing staff has to address.

One aspect of improvement sought for the student experience was to provide more available practice questions, plus some way of getting the students involved in doing maths other than just through formal tests.

Assessment

This being a level four module with very large numbers involved, automated assessment has been employed for many years. Until recently this has all taken the form of time-limited, supervised tests and the mechanism has been both paper based MCQs marked by optimal mark reader equipment and also by the assessment engine of the Blackboard VLE. These methods have been quite successful in handling the marking load, but good quality MCQs are very time-consuming both to set and to implement on Blackboard. One effect of this was that some students felt they could not get hold of enough past questions on which to practise and, from the staff viewpoint, the majority of students would appear to raise their work effort only in the brief period before a test.

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Implementation

The biggest challenge has been deciding on who is to pay for the books and the access to MyMathLab. We knew that unless the use of MyMathLab was made part of the summative assessments then it would be grossly under-utilised, so the outcome was that every student would need a book. The Faculty of Science used some WWP support funds, with which sufficient copies have been

purchased for two years now. A third year is about to follow.

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MyMathLab is used for 20% of the module marks which take the form of ten homeworks set weekly. For initial simplicity these questions were chosen from the existing bank associated with the book and each homework was set up with a release and closure date, which can all be accomplished before the module even begins. It should be noted, however, that the lecturer can author (with relative ease) more contextual questions, which can include randomised parameters for repeated use. When complete, the marks are easily downloaded as a CSV file and this can be imported into Excel or other spreadsheet software.

One word of caution: the average mark returned for any particular student takes no account of how many of the ten assessments each student is expected to attempt. Initially the raw data from the individual homeworks were imported into a spreadsheet and recalculated, but it later became evident to the teaching team that a mechanism did exist in the 'Manage Incompletes' part of MyMathLab for handling this scenario.

Study Plan

Students were directed to practice questions from the Study Plan. These are from the same pool of questions that the homeworks are set, but the parameters change between instances, thus offering students the chance to master techniques with repeated attempts at questions following a particular template. Indeed, we are prepared to let students have multiple attempts and even sometimes allow them to access help for similar questions when doing the homework. We have become more at ease with allowing this approach for students who are in transition mode into higher education. This is because, by working in this way, they are at least engaged in doing maths and, as noted earlier, such students are often rather short on confidence and mathematical ability because they are not specialising in the subject.

Course results

ANECDOTAL EVIDENCE

The module questionnaire and other less formal discussions with students indicate strongly that the MyMathLab facility is popular and contributes to the

students' learning. Those who have struggled with maths during their secondary education have the opportunity to revisit much of the material and to self-assess their progress without concern about exposing their weaknesses.

STATISTICAL EVIDENCE

We have no comparative statistical evidence as it seems unethical to have a control group who are denied access to MyMathLab. Suffice to say that very few students who engage in the module and take all the assessments end up failing.

Conclusions

- We are very impressed with the MyMathLab facility and its ability both to enhance student learning as well as to assess it.
- After two years of this pilot we have decided to use MyMathLab associated with a more advanced mathematics text with our level four mathematics specialist students.
- All of the staff at Pearson have been extremely helpful and have now produced a customised version of the Croft and Davison book which keeps costs to a minimum and makes the material more focused for the module.

References

- Atkins, N., May, S. and Marks-Maran, D. (2005) 'Widening participation in subjects requiring data handling skills: the MathsAid Project', *Journal of Further and Higher Education*, 29, 4, 353–365.
- Foster, P. (2001) 'Pass marks 'cut to boost GCSE grades'', *The Daily Telegraph*, 24th August.

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