Mapping University Mathematics Assessment Practices

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Chapter 7
Online Quizzes

Abstract This case study presents the use of weekly online quizzes as a coursework component for a year 2 linear algebra module.

7.1 Background and rationale

Changes in the assessment structure of this module came from the lecturer's desire to help students engage with the content from the start, particularly in the light of the definition-heavy structure of this part of mathematics. It was felt that assessment which engages students on a weekly basis can help them understand the material and keep in touch with what is covered during the lectures. Robust and efficient online assessment also has the potential to contribute reducing the lecturer's workload and allows him to have a better understanding of the topics with which students are struggling.

7.2 Implementation

Traditionally, the coursework for this module consisted of weekly paper-based exercise sheets which were then marked by the lecturer or by postgraduate students. Last year the exercise sheets were replaced by online weekly quizzes using Moodle. The system presented benefits for both staff and students. On the one hand, with support from the IT services, staff can generate fairly complex questions and in the long term build a large database of problems. The basic system in use in the department allows the lecturer to set up multiple choice questions as well as numerical questions, but with some extra work questions generated in Maple can be imported into the system to allow for quite complicated questions to be used.

The system also appears to work well for students who appreciate the opportunity to complete this coursework in their own time and online. These quizzes are based in Moodle, a VLE which also provides a platform for students to access and see course materials.

The key advantage of this assessment method is students' continuous engagement with the material. In this way students can come to terms with the basic definitions, calculations and concepts of this part of mathematics by practising with the online quizzes on a weekly basis. Continuous assessment also prevents students

from adopting a last minute revision strategy before the final exam. It also significantly reduces the marking and administration time for the lecturer.

7.3 Assessment

Stage	No. of students	Assessment pattern
Year 2	200	90% closed book exam 10% coursework: weekly online quizzes

7.4 Discussion, learning and impact

Since the introduction of online weekly quizzes, exam marks increased slightly compared to previous years, but not significantly. Students apparently welcomed the opportunity to do something different and enjoyed doing quizzes in Moodle. The uptake of such quizzes every week is higher than the submission of weekly exercise sheets in previous years. Particularly in a course like linear algebra, there is a perceived need to work hard to maintain student engagement and the online quizzes seem to have done this.

Students also appreciate the opportunity of receiving instant feedback rather than having to wait for the exercise sheets to be marked. The lecturer tailors the quizzes to the material covered in the lectures during the week and feels that this helps students' understanding of notes better and reinforces important points that could be otherwise overlooked. This system has also reduced the marking load for the lecturer while at the same time allowing him to have a weekly picture of students' progress. There is a need for technical support and know-how to implement the quizzes and that requires a level of departmental resource. Amongst the other drawbacks of using this system is the feeling that it is not possible to test conceptual understanding with this sort of quiz, but as this is only one small part of the module assessment this is not perceived to be a big problem.

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