

USING AN ONLINE WEB-BASED RESOURCE TO SET ASSESSED WEEKLY QUIZZES

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Introduction

BS1163 is an introductory microeconomics module taken by over 400 first-year undergraduate students in the Business School. The course introduces students to a number of threshold economic concepts. Motivating and engaging students on this module, however, is particularly difficult because class sizes are large and, whilst some students are experiencing economics for the first time, others have some experience of the subject.

Contact time on the course involves two hours of lectures per week delivered to all the students together and a series of fortnightly one hour tutorials in groups of around 20 students. These tutorials cover a range of exercises which students are encouraged to attempt in advance. Prior to the 2009/10 academic year, alongside the required reading from the core course textbook, these tutorial exercises were the only supplementary material and practice questions made available to students. Furthermore, the module was assessed solely by an examination at the end of the course. Given the large number of students, administrative issues made it difficult to introduce additional and more varied forms of assessment.

A significant issue in this module was that there was little opportunity for students to become actively engaged in the learning process and it was difficult to provide the large number of students with individual feedback on their learning. In an attempt to address these issues, for the 2009 intake we experimented with introducing the MyEconLab¹ web-based resource into the module.

Using a web-based resource to provide students with practice material

This resource provides instructors with access to a large bank of questions based on the textbook material. This includes multiple-choice type questions, however, other question formats are also provided. Particularly relevant for introductory economics classes are tools which provide questions that involve drawing and interpreting graphs. In addition, the resource also provides a range of other supplementary materials such as a news blog and video clips to complement the textbook material.

We used MyEconLab to provide a range of practice and revision quizzes throughout the course. Whilst these quizzes were optional and did not count towards the module assessment, we tried to provide clear incentives to use this resource by guaranteeing that a number of the multiple choice practice questions would be replicated in the exam at the end of the module.

We hoped that introducing MyEconLab into the module would enable the students to become more active in the learning process with increased opportunities to check and enhance their understanding of the lecture material and to receive rapid feedback. In addition, for each student MyEconLab automatically generates an individually tailored study plan based on the areas their quiz performances suggest they are finding more difficult.

Students could obtain access to MyEconLab using a code provided with a purchase of the course textbook. However, we could not require all students to purchase the textbook. Therefore, the Business School purchased additional access codes which were made available for free to the students at the start of the module and for a limited period towards the end of the module. All students

¹ www.myeconlab.com

were, therefore, able to register and were encouraged to attempt the optional practice and revision questions set as well as to make use of the individual study plan and other supplementary resources provided.

After using MyEconLab in this way for one year we evaluated its impact on the module. We observed that just over 50% of students had registered for the resource. Furthermore, the results show that these students performed on average 10% better on the final exam. Whilst this suggests using the resource was beneficial for student learning, it may also be a result of self-selection bias i.e. the better students may have been the ones that chose to use the resource and they may have performed well on the exam regardless of this. We therefore estimated the impact using the resource had on student learning using an econometric model which takes into account the possibility of such self-selection bias². Crucially, the results still suggest that using the resource had a positive and highly significant impact on student learning. In addition, the results show that the students that used the resource did not just perform better on the multiple choice section of the exam but also on the short answer type questions. This suggests that the practice questions provided within MyEconLab can help to facilitate an in-depth understanding of the material.

Overall this empirical analysis alongside additional anecdotal evidence suggested that introducing MyEconLab had improved the module. For the subsequent academic year we decided it would be beneficial to further integrate the resource into the module. Consequently, we have now made the online quizzes a formal part of the module assessment.

Using a web-based resource for assessed tests

We now require all students to register, via either of the methods described above, for MyEconLab. Then, over the course of the term, six quizzes are assigned based on material covered in earlier lectures. The large bank of available questions, which are algorithmically generated, allows the quiz questions to be randomised across students so that each student faces a different set of questions. Each quiz is made available for one week with students allowed to complete it in their own time; however, they are only allowed one attempt.

In order to allow for technological and other potential issues, each student's best five marks across the six quizzes is counted, and in total the quiz marks contribute towards 15% of their final module mark. Along with the randomly assigned questions, this relatively low weighting helped to alleviate our concerns over team-work and possible cheating. Furthermore, our experience suggests that this is still a high enough weighting to provide sufficient incentives to motivate students.

Following completion of the tests, students immediately receive their marks and once the deadline has passed are able to review the correct answers. This, therefore, provides the students with rapid and detailed feedback on their level of understanding.

MyEconLab also provides the instructor with detailed data in order to monitor student engagement and performance. It is straightforward to monitor which students have not completed the assessments and email reminders can be sent to these students prior to the deadline. In addition, data on student performance by question makes it straightforward to identify particular areas many students are finding difficult and these can then be addressed in class time. Following the assessment we also made the quizzes available for practice and revision purposes, with students able to undertake a different random set of the questions as many times as they chose.

² Olczak, M., (2011). Evaluating the impact of a web-based resource on student learning, Working Paper. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1822665

Conclusion

Web-based resources such as MyEconLab are an excellent way to provide students with a wide range of practice questions and also allow continuous assessment to be introduced even when class sizes are large. Overall, anecdotal evidence from teaching this module suggests that introducing MyEconLab in this way has been extremely beneficial. Student engagement has been increased and students benefit from the opportunity to check and enhance their understanding of the lecture material as well as receive rapid and detailed feedback. Instructors are also then able to identify and respond to areas that students are finding difficult. Furthermore, student feedback has been extremely positive.

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Example used with Undergraduate students on BS1163: Introduction to Microeconomics