MyMathLab

American University of Science and Technology (AUST), Lebanon

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LEARNING OUTCOME

With the introduction of MyMathLab, AUST found it was easier to provide regular formative and summative assessments with **individual student feedback**. Student **performance on the final exam increased by 5.34 points out of 100** and 73.76% of students thought that MyMathLab helped enhance their understanding of the material.

Course
Calculus

Textbook in use
Thomas's Calculus, 12th edition, 2010
Thomas, Weir, Hass and Giordana

Type of data collected
Final exam scores, student survey

During this period
2010–11

Course design

There are a series of three Calculus courses given to Computer Engineering, Communication Engineering and Computer Science students during their sophomore and junior years. There are 250 students registered on these courses each semester.

The pre-existing practice for these courses was to give students paper-based homework sets chosen from questions in the textbook, which were then handed in and graded. Students were also given regular quizzes in class, as well as their scheduled exams. Though there was no problem with this method, the correction of homework in class did not provide individual attention for every student. Moreover, the grading of regular homework sets was time consuming for instructors.

To better approach the issue, we introduced MyMathLab to students in the Calculus series courses. Our aim was to provide a sensible and effective teaching method to suit the students' different learning styles, to efficiently extend learning outside of class, and to better manage the course material. We also wanted to foster collaboration among students, promote effective online discussions, and engage students in active learning.

Implementation

We used *MyMathLab* in our courses for three purposes:

- To provide students with obligatory weekly homework sets using questions chosen from the bank provided in *MyMathLab*. The sets were graded after being left open for a week. The students could attempt a homework exercise more than once, and had the option to stop and save their work and return back to continue at a later time. However, once students logged on to do them a cumulative two hour time limit was set. The students could use the helping hints to solve a problem, and could send emails to their instructors to ask questions.
- To provide students with obligatory quizzes every two weeks. The quizzes were graded after being open for two weeks. However, once students logged on they were allowed only half an hour and could attempt each question only once. No helping hints were allowed. The students could send emails at the end of the quiz to ask their instructors questions.

Our aim was to provide a sensible and effective teaching method to suit the students' different learning styles, to efficiently extend learning outside of class, and to better manage the course material.

- To provide students with extra study resources and course material such as PowerPoint slides, extra exercises to solve, sample chapter tests and step by step help in reaching the solutions.

Course results

ANECDOTAL EVIDENCE

The student acceptance of this resource increased as the semester progressed, as did their motivation to use the extra help available. By mid-semester, most students showed a highly positive attitude and expressed that they benefited from MyMathLab, which gave them a more thorough understanding of the material explained in class.

STATISTICAL EVIDENCE

- Although homework sets and quizzes were obligatory, our monitoring of student activity showed that 78.2% of students also attempted doing the optional practice chapter tests and practice exercises.

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- On average, student performance increased by 5.34 points out of 100.
- A survey was done at the end of the semester and 73.76% of students responded that *MyMathLab* helped enhance their understanding of the material.

Conclusions

The feedback was highly positive from both the students and the instructors. Like any new introduction, there will always be people who are resistant to change. However, as faculty members saw the positive effect it was having on students' grades and performance, and students saw the increased motivation and detailed understanding it provided to them, signs of resistance soon faded out.

By allowing students to send questions to ask their instructors, *MyMathLab* is a tool that values the student-teacher relationship and tries to maintain it by encouraging communication. This resource also helps students to better understand the material, guiding them through the solution with individual hints and step by step explanations. The quizzes done using *MyMathLab* helped students perform better on exams.

By controlling the number of attempts to tackle each question and the time allotted for the homework or quiz, I have full authority as an instructor to control student learning. By allowing a time interval in which students can enter to do their homework sets or quizzes, *MyMathLab* caters to the individual needs of students.