

MyLab Accounting educator study explores student performance at University of Massachusetts Lowell

Key Findings

- After implementation of MyLab, the percentage of students earning an A for the final course grade increased 26 percentage points (from 8% to 34%) and the percentage of students failing the course declined 13 percentage points (from 22% to 9%).
- Data indicate that students scoring above average on MyLab assignments earned average exam scores eight percentage points higher than students with below average MyLab scores.
- On an end-of-semester survey, 93% of respondents agreed that MyLab provided additional resources that helped them learn more than they would have from traditional paper-and-pencil homework.

Study Specifics

School name: Manning School of Business, University of Massachusetts, Lowell, MA
Course name: Managerial Accounting (Accounting 2020)
Course format: Face to face

Course materials: MyLab Accounting for *Managerial Accounting* by Braun and Tietz
Timeframe: Spring 2018
Educator: Khondkar Karim, Professor of Accounting and Department Chair
Results reported by: Candace Cooney, Pearson Customer Outcomes Analytics Manager

Setting

- Locale: mid-size, urban, public, four-year research university located just south of the New Hampshire border and 45 minutes north of Boston
- Enrollment: more than 18,000 students
- Freshman retention rate: 86%
- Six-year graduation rate: 56%
- Student population ethnicity: 60% White, 10% Hispanic, 7% Asian, 6% African American, 17% Other

About the Course

Khondkar Karim has been teaching for approximately 18 years, including the past seven years at UMass Lowell. Managerial Accounting is a one-semester, three-credit course enrolling approximately 275 students per year. The course is composed primarily of business students, but is also required of several other non-business majors. Managerial Accounting is designed to provide students with an overview of the recording, measuring, reporting, and decision-making activities associated with the internal management of a manufacturing firm (primarily), as well as a service or non-profit organization.

Challenges and Goals

Karim notes that many students today ignore the textbook prior to attempting homework assignments. Although Managerial Accounting is a course heavy on problem solving — and homework and practice is necessary for course success — students often forgo reading and understanding the chapter content. To encourage and reinforce the need to read the text, Karim appreciated that MyLab™ has a prerequisite setting, enabling him to create an assignment that would encourage students to read the text before they attempted

the homework. In Fall 2017, Karim adopted MyLab Accounting for his section of Managerial Accounting, with MyLab rolled out for department-wide adoption in Spring 2018.

Implementation

Students use MyLab for understanding content and homework assignments. Karim estimates that students will spend at least 2–3 hours per week on MyLab assignments, more if they use the eText for reading, which many do. On an end-of-semester student survey of Karim's students (44% total response rate), 43% of respondents said they spent 2–3 hours in MyLab and 36% spent more than three hours using the program.

Karim's classes entail a mixture of lecture, problem analysis, and class discussion. Lectures emphasize major topics and readings, and students are encouraged to ask questions on topics in which they have difficulty understanding. Explanatory lectures prepare students to complete assignments. Reading assignments are to be completed prior to the class in which the material is introduced, and problem assignments must be completed (or worked on a "best effort"-basis) prior to the class period during which they are reviewed. On the student survey, 71% of respondents agreed that completing the MyLab homework prior to lecture gave them an introduction to the new material and helped them identify topics on which they needed more practice. Participation in class discussion and problem-solving exercises is expected.

Chapter quizzes are comprised of 5–10 end-of-chapter, multi-part questions and problems and are a prerequisite for completion of the MyLab homework assignments. Students have unlimited attempts at quiz completion but must earn a minimum of 70% prior to opening the MyLab homework. Quizzes are due 24 hours prior to lecture, but are not scored or recorded in the grade book.

Homework assignments are a combination of publisher problems, open-response questions, Excel-based problems, and short cases. Questions are chosen carefully and Karim uses [question metrics](#) to create assignments of appropriate length and difficulty. Learning aids are turned on. On the student survey, 78% of respondents said they usually or always use the learning aids for assistance when unable to start or complete a homework problem. Open-response questions require students to type in an answer rather than choosing a response from a drop-down menu, helping them think critically and prepare for exams. Excel problems allow Karim to integrate Excel into the course, giving his students the opportunity to practice important accounting skills directly in Excel. On the student survey, 79% of respondents agreed that using Excel to answer some homework exercises allowed them to practice solving accounting problems in a real-world environment, similar to what might be expected of them in their future career. Homework assignments are due after completion of the MyLab quiz and prior to the second lecture each week.

[Accounting in the Headlines](#), a blog tied to MyLab Accounting and updated by a Pearson textbook author, is intended to provide current real-life stories about introductory accounting concepts. Karim uses this as the basis for three, one-page summary assignments due throughout the semester. Similarly, end-of-chapter case studies are used as the foundation for nine Ethical and Sustainability writing assignments. On the student survey, 86% of respondents found that the short article ([Accounting in the Headlines](#)) and written case study (ethics and sustainability) assignments offered an opportunity for them to apply the concepts they were learning to real-world companies.

Learning Catalytics, a bring-your-own-device personal response system, complements lecture instruction by using real-time questions and answers to capture student feedback to content questions Karim poses in class. Learning Catalytics allows him to assess student understanding instantly. Generally, students are encouraged to think quickly as they would on an exam, and when the answer rate is low for a particular question, Karim explains the underlying concept again. On the student survey, 100% of respondents agreed that in-class Learning Catalytics questions helped their understanding of the lecture content or helped them identify

misconceptions they had about lecture content. Additionally, 86% of respondents agreed that when the class scored low on a Learning Catalytics question, they found it helpful that Karim explained the concept again and then asked a similar question to confirm understanding of the material before moving on.

Four practice exams are created by Karim in MyLab; each is required to be completed prior to taking the related exam in class. However, these exams are not graded or recorded in the gradebook. On the student survey, 86% of respondents agreed that the practice exams completed in MyLab prior to taking the actual exam helped them identify concepts where they needed additional practice.

Paper-and-pencil midterms and the **final exam** cover two chapters each and are comprised of 19 questions. Approximately 40% of the exam includes conceptual-based questions and approximately 60% is comprised of numeric, multi-part problems. Students have 75 minutes for completion.

Assessments

- 39% Midterm exams (3)
- 26% MyLab homework assignments
- 19% Final exam
- 8% Article summaries
- 5% Ethical issue assignments
- 3% Sustainability issue assignments

Results and Data

After implementation of MyLab, Karim saw average exam scores and average final course scores improve substantially. More students earned an A or B as their final course grade and fewer students failed the course (figure 1):

- 26% of students earned as an A as their final course grade in Spring 2018 compared to 8% of students in Spring 2017, prior to using MyLab.
- 9% of students failed the course in Spring 2018 compared to 22% of students in Spring 2017, prior to using MyLab.
- Course completion rate increased from 79% in Spring 2017 to 91% from Spring 2018.

Final course letter grades before and after implementation of MyLab

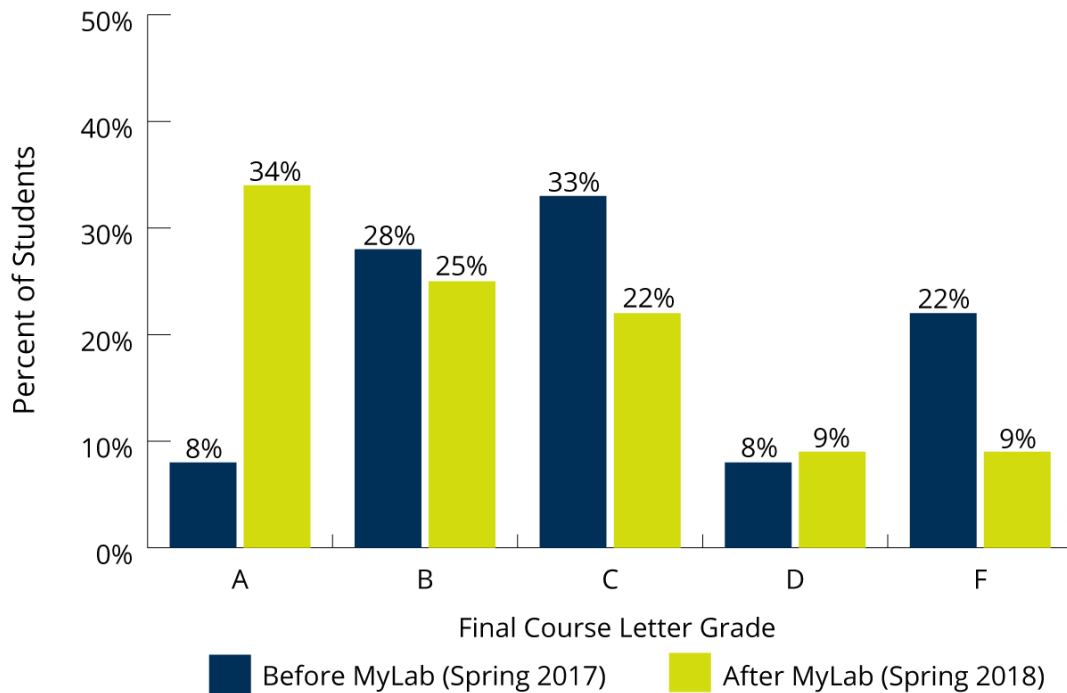


Figure 1. Final Course Letter Grades Before and After Implementation of MyLab, Spring 2017 ($n=36$) and Spring 2018 ($n=32$)

Observing Spring 2018 data, students were placed into two groups based on the average MyLab score of 71%. Data show that students scoring above average on these MyLab assignments earned substantially higher exam and final course scores than students who scored below average (figure 2).

- Average exam scores were 8 percentage points higher
- Average final course scores were 19 percentage points higher

Additionally, correlation analysis was conducted. Correlations do not imply causation but instead measure the strength of a relationship between two variables, where r is the correlation coefficient. The corresponding p -value measures the statistical significance/strength of this evidence (the correlation), where a p -value $<.05$ shows the existence of a positive correlation between these two variables.

Spring 2017 average homework score = 66%; Spring 2018 average MyLab homework score = 71%

- Correlation between average homework score and average exam score in Spring 2017 (prior to implementation of MyLab): $r=.37$, p -value $<.01$
- Correlation between average MyLab homework score and average exam score in Spring 2018 (after implementation of MyLab): $r=.51$, p -value $<.01$

Average exam and final course scores

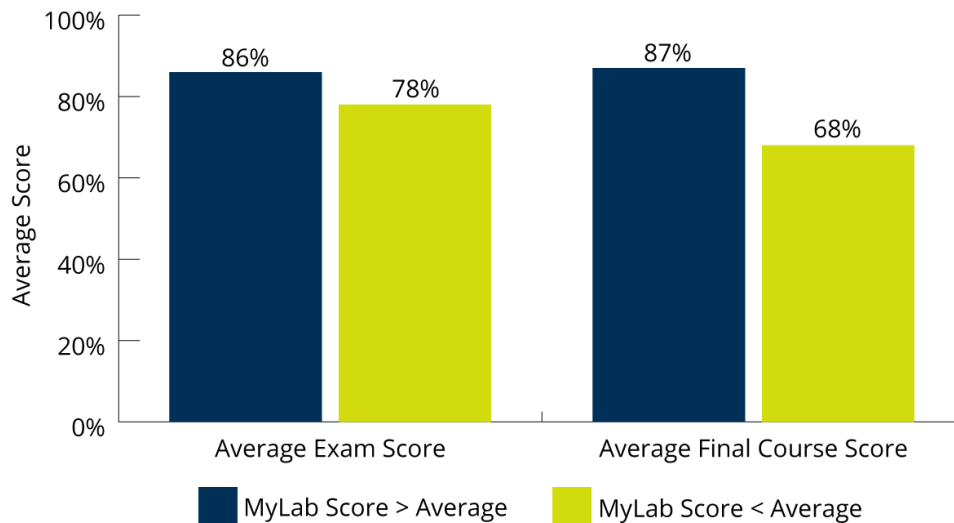


Figure 2. Exam and Final Course Scores based on Average MyLab Score, Spring 2018 ($n=32$)

The Student Experience

Responses from the Spring 2018 end-of-semester survey of Karim's students indicate that the majority of responding students recognize the value of MyLab Accounting.

- 100% of respondents agreed that their understanding of the course material increased as a result of using MyLab.
- 93% of respondents agreed that the study and help resources provided in MyLab made the program a good value for this course.
- 79% of respondents agreed that MyLab homework assignments positively impacted their exam scores.
- 93% of respondents agreed that MyLab provided additional resources that helped them learn more than they would have from traditional paper-and-pencil homework.
- 86% of respondents would recommend MyLab to another student.

Conclusion

To encourage students to read the textbook chapters prior to attending class, Karim used pre-lecture quizzes in MyLab as a prerequisite to homework completion. This strategy enabled students to come to class prepared to engage in discussion, exploration, and critical thinking, where they apply what they are learning to real-world situations. On the end-of-semester survey, 71% of respondents agreed that completing the MyLab quizzes and homework assignments prior to lecture gave them an introduction to the new material and helped them identify topics on which they needed more practice. Additionally, data show that students who successfully completed the MyLab assignments earned higher exam and final course grades, leading to an unexpected benefit of an improved course completion rate from 79% in Spring 2017 to 91% in Spring 2018.