

MyLab Accounting educator study explores use of the homework, quiz, and exam scores at East Carolina University

<p>School Name East Carolina University, Greenville, NC</p> <p>Course name Financial Accounting</p> <p>Course format Face to face</p> <p>Course materials MyLab Accounting with <i>Financial Accounting</i> by Kemp and Waybright</p>	<p>Timeframe Spring 2017</p> <p>Submitted by Azita Movahed, Lecturer</p> <p>Results reported by Candace Cooney, Customer Outcomes Analytics Manager</p>
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Key Findings

- Data indicate a very strong correlation between average MyLab homework scores and average MyLab quiz scores.
- Students scoring at or above the median on MyLab homework assignments had significantly higher quiz, exam, and final exam scores than students who scored below the median.
- 94 percent of student survey respondents agreed that MyLab homework provided additional resources that helped them learn more than they would have from traditional paper-and-pencil homework.

Setting

- Locale: large, urban, public, four-year university located in eastern North Carolina
- Enrollment: almost 29,000 students
- Freshman retention rate: 80 percent
- Four-year graduation rate: 35 percent
- Student-faculty ratio: 18:1

- Classes with 20 or fewer students: 30 percent
- Gender: 58 percent female
- Diversity: 29 percent ethnic minority

About the Course

Azita Movahed has been teaching introductory accounting courses for approximately five years at ECU. Financial Accounting is a three-credit, one-semester course that is the first semester of a two-semester sequence, enrolling approximately 48 students per section. The course is required of students majoring or minoring in Business and is also a popular elective. Financial Accounting illustrates accounting as a language of business and provides students with an understanding of the necessary procedures for preparing financial information for external users of this information. The course provides an introduction to the concepts and uses of financial accounting information in a business environment and its role in the economic decision-making process. Students see a direct link between business events and financial statements to identify how particular business decisions affect the economic activities and the reported financial condition of a business for an accounting period.

Challenges and Goals

In 2012, Azita Movahed joined the Accounting department in the Business School at East Carolina University (ECU) where they had already implemented MyLab Accounting™. Movahed believes that students who complete required background reading and attempt to work through some problems prior to attending lecture will gain a deeper understanding of the content discussed in class. MyLab homework assignments provide students with an opportunity to practice what they learn, but it is the practice questions in MyLab that require students to read the chapter material and reflect on how these concepts are connected. To ensure that her students are reading about the concepts first, Movahed created the practice questions as a prerequisite for the problem-solving assignments in the MyLab homework.

Implementation

Face-to-face class time is a combination of lecture, activities, quizzes, and problem review from homework assignments and assessments. Students are expected to contribute in class and apply the chapter content to solve problems. Movahed finds that student involvement allows students to learn from each other and also helps her identify areas where additional explanation and guidance are needed.

Movahed begins class with an interactive question using a personal response system. The question generally reviews an important concept from the previous lecture and allows Movahed to identify if additional explanation is needed. She uses the PowerPoint slides that accompany the textbook as an outline for lecture, and follows each learning objective covered with a walk through of a problem

chosen from the textbook. Students then work individually or in small groups on practice problems, and some classes end with a pop-quiz.

MyLab Accounting

MyLab Accounting is required; the program is used primarily by students working at home on a personal computer. Students use MyLab for understanding content, homework assignments, and quizzing. Movahed's goals for assigning work in MyLab are to introduce new concepts, provide homework and practice opportunities, and to help students assess their own understanding of the course material and track their progress. She anticipates that students will spend at least two hours per week working in MyLab, and students confirmed this on a voluntary, end-of-semester survey (83 percent response rate). Fifty percent of respondents indicated they spent 2–3 hours working in MyLab, and an additional 32 percent said they spent more than four hours per week in the program.

Practice questions are assigned in MyLab to help students learn key concepts; they are not graded but are a prerequisite for the graded MyLab homework problems. Students must open the practice questions first, and the gradebook identifies how much time students spend on this task. Graded MyLab assignments consist of five, multi-part problems. Students have two attempts at completion, and learning aids are turned on. Learning aids provide hints and assistance on a just-in-time basis as students work through the assignment. On the end-of-semester survey, 79 percent of respondents reported that they always or usually take advantage of the learning aids when having trouble starting or completing a problem. As one student stated, "Help Me Solve This' is a great tool for students who don't understand the matter thoroughly. You can also use 'Ask My Instructor' and email your professor the problem you are stuck on."

Movahed also assigns two quizzes in MyLab for each chapter. The final grade recorded in the gradebook is the average of the two quizzes. Quiz 1 is a practice quiz; students have two attempts at completion and no time limit. This quiz is comprised of 10–12 questions as students work through a numeric problem, based on the chapter learning objectives. Quiz 2 is a timed quiz with one attempt. Students have 30 minutes to complete ten multiple-choice, concept-based questions. Movahed encourages students to leave this quiz as their final assignment for the chapter, once they have a thorough understanding of the material. MyLab homework assignments and quizzes have firm due dates and late assignments are not accepted.

Movahed describes the other MyLab study tools to students and suggests they use whatever additional practice they may need. On the end-of-semester survey, 77 percent of respondents claimed to use at least one other optional study tool in MyLab, including 46 percent who used the [Study Plan](#), 41 percent who used the [eText](#), and 24 percent who used the [Dynamic Study Modules](#).

In-class exams, including the final exam, are multiple-choice, paper-and-pencil assessments comprised of 40 questions. The questions are from a combination of sources, including the Pearson test bank and MyLab assignments, along with questions Movahed has authored herself. Students have 75 minutes for completion of each exam.

Assessments

- 40% Exams (4)
- 30% Final exam
- 12% MyLab quizzes
- 10% Participation and attendance
- 8% MyLab homework assignments

Results and Data

Figures 1 and 2 are correlation graphs; correlations do not imply causation but instead measure the strength of a relationship between two variables, where r is the correlation coefficient. The closer the r value is to 1.0, the stronger the correlation. 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.

- A very strong positive correlation exists between average MyLab homework scores and average MyLab quiz scores where $r=.77$ and $p<.05$.
- A strong positive correlation exists between average MyLab quiz scores and average exam scores where $r=.61$ and $p<.05$.

For students, the formative MyLab homework is intended to help them identify where they are in terms of successfully completing the summative quizzes and tests; it appears that performance on these assignments could be a leading indicator of course success (additional research is needed to develop and test this concept further). Movahed indicates that students often note a disconnect between the MyLab homework problems and the multiple-choice exam questions, but the timed MyLab quizzes that include both problems and multiple-choice questions provide a nice bridge between homework and exams.

Correlation between MyLab homework score and MyLab quiz score

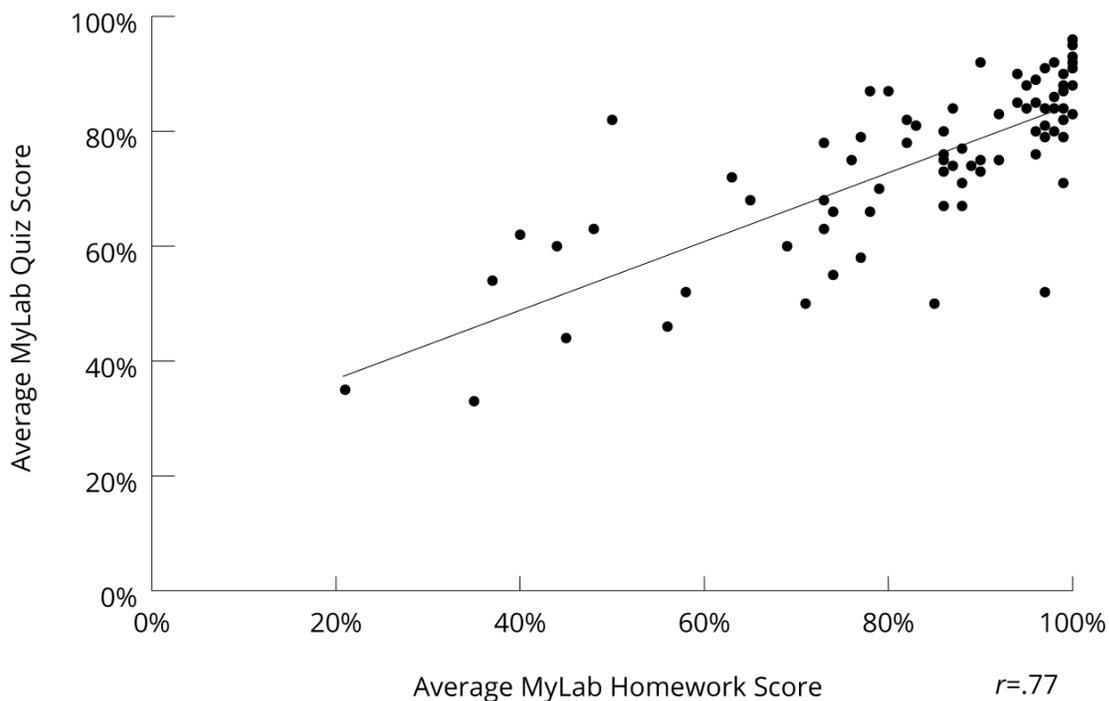


Figure 1. Correlation between MyLab Homework Score and MyLab Quiz Score, Spring 2017 ($n=80$)

Correlation between MyLab quiz score and average exam score

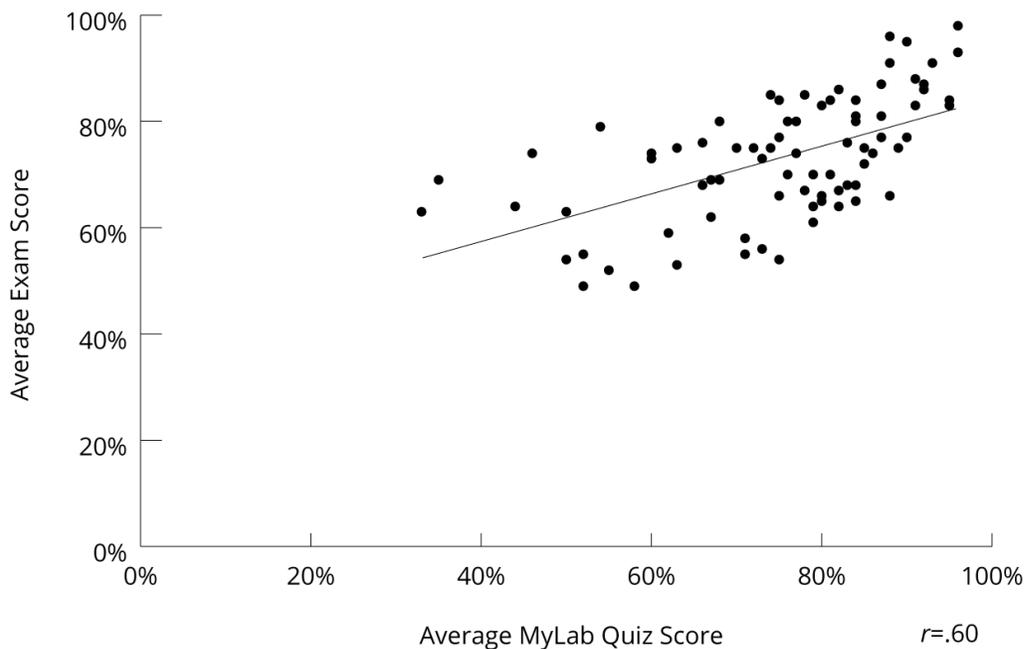


Figure 2. Correlation between MyLab Quiz Score and Average Exam Score, Spring 2017 (n=80)

Students were divided into two groups based on median MyLab homework score. Students who scored equal to or above the median earned significantly higher average quiz, exam, and final exam scores than students who scored below the median (figure 3).

- Median MyLab homework score: 88 percent
- Students earning MyLab homework scores above the median had average quiz scores 17 percentage points higher than students who earned below the median.
- Students earning MyLab homework scores above the median had average test scores six percentage points higher than students who earned below the median.
- Students earning MyLab homework scores above the median had average final exam scores 10 percentage points higher than students who earned below the median.
- 54 percent of students earned a MyLab homework score higher than the median. (n=43)

A *t*-Test measures whether the means of two groups are statistically different. Results of the *t*-Test for average exam score above and below the median in figure 3 show that $t(131)=4.15$ and $p<0.05$, indicating that this increase is statistically significant.

Relationship between average MyLab homework score and average quiz, test, and final exam score

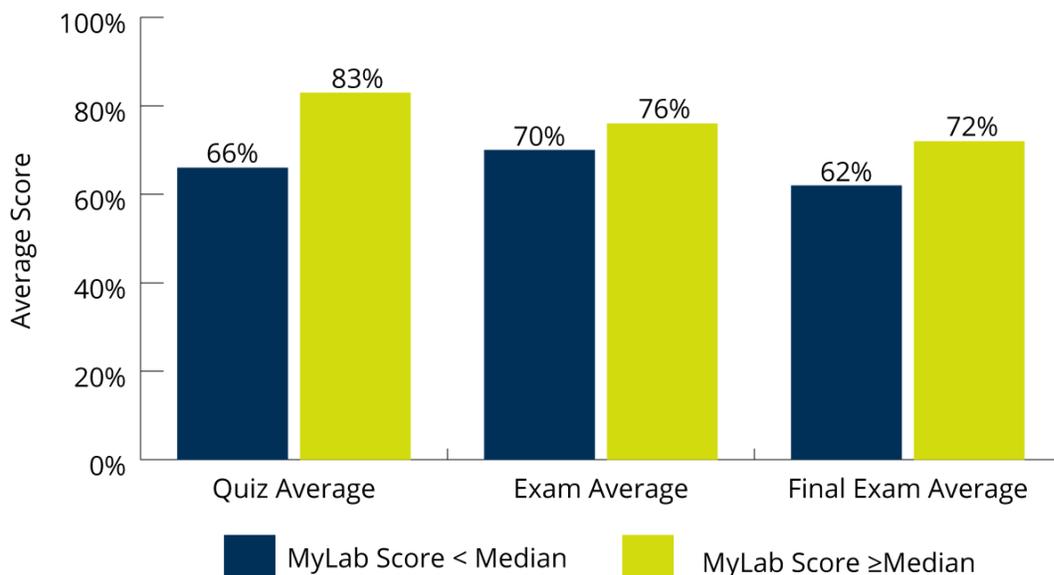


Figure 3. Relationship between Average MyLab Homework Score and Average Quiz, Test, and Final Exam Score, Spring 2017 (n=80)

The Student Experience

Responses from the Spring 2017 end-of-semester survey of Movahed's students indicate that the majority of responding students recognize the value of MyLab Accounting.

- 93 percent of respondents strongly agreed or agreed that their understanding of the course material increased as a result of using MyLab.
- 85 percent of respondents strongly agreed or agreed that use of MyLab positively impacted their quiz and exam scores.
- 94 percent of respondents strongly agreed or agreed that MyLab provided additional resources that helped them learn more than they would have from traditional paper-and-pencil homework.
- 94 percent of respondents strongly agreed or agreed that they would recommend MyLab to another student.

Students responses to the question, "What are the benefits of MyLab for you as a student?" include:

- *"[MyLab] provides all kinds of questions. I don't know if I would have passed this course without it."*
- *"The benefits of MyLab would be how it breaks down the steps in problems if you do not know where to start or how to do the problem. It helped me learn how to do problems I did not know how to do before."*
- *"MyLab allows me to check my answers before I move on to the next part of the problem. If I get the first part wrong, it will affect the rest of the assignment."*
- *"MyLab gave me the opportunity to review questions and get help, which helped me understand things I may have had trouble with on homework. It gave me a chance to make sure I understood the material."*
- *"I learned how to do journal entries a lot better through MyLab."*

Conclusion

Movahed recognizes that students need practice to be successful in accounting. MyLab practice questions allow her to assign content-based questions centered on reading assignments, which offer a bridge to the multi-part problems students are assigned for a grade. Practice questions give students a chance to demonstrate their understanding of concepts before putting these concepts into practice. Empirically, students have shared with Movahed that when they complete the practice questions prior to class, they understand the lecture more completely.

Movahed intends to incorporate additional MyLab functionality like Learning Catalytics and the Dynamic Study Modules in future semesters.