

MyLab Finance educator study analyzes quiz and exam scores at Cal State University–Fullerton

<p>School name California State University–Fullerton, Fullerton, CA</p> <p>Course name Financial Management I</p> <p>Course format Online</p> <p>Course materials MyLab Finance for <i>Fundamentals of Corporate Finance</i> by Berk, DeMarzo, and Harford</p>	<p>Timeframe Fall 2017</p> <p>Educator Mark Stohs, Professor of Finance</p> <p>Results reported by Candace Cooney, Pearson Customer Outcomes Analytics Manager</p>
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Key Findings

- Students with MyLab quiz scores above average earned exam scores 15 percentage points higher than students who scored below average on MyLab quizzes.
- Every student scoring above average on MyLab quizzes earned an A and B for the final course grade.
- 93 percent of respondents on the student survey agreed that they did more homework for this course than they would have if MyLab had not been required.

Setting

- Locale: large, urban, public, four-year university located in the center of Orange County, approximately 30 miles southeast of Los Angeles
- Enrollment: more than 40,000 students
- Full-time students: 83 percent
- One-year, first-time, full-time retention rate: 87 percent
- Six-year, first-time, full-time graduation rate: 66 percent
- Student-faculty ratio: 25:1
- Class size: 68 percent of classes have 20–50 students
- Gender: 57 percent female, 43 percent male

- Ethnicity: Hispanic – 41 percent, Asian – 21 percent, Caucasian – 20 percent, African American – 2 percent, Other – 16 percent

About the Course

Mark Stohs has been teaching for approximately 40 years and has been at California State University–Fullerton for 22 years. Financial Management I is a three-credit course that is the first semester of a two-semester sequence, enrolling approximately 1000 students per semester. This core course is required of business students. A final course grade of at least a C (73 percent or higher) is required to pass the course. Financial Management I provides a background in the concepts, processes, and institutions involved in financing business enterprises. Topics covered include financial statement analysis, interest rates and valuing cash flows, valuing stocks and bonds, risk and return, and the cost of capital. Concepts of international finance are integrated throughout the course.

Challenges and Goals

Approximately five years ago, Stohs and his colleagues gathered at a department retreat to choose a new textbook and digital course companion. Four publishers were invited to present the advantages of their educational resources. **With many courses designated for online delivery, a digital option that included pre-built assignments and assessment was important, as was auto-grading of homework given the number of students in each section.** Additionally, with many instructors teaching the course, a program offering a variety of assignments that could be used across all sections to offer students a comparable experience was preferred. Ultimately, MyLab™ Finance was adopted for the course.

Implementation

MyLab Finance is required and the program is used primarily by students working at home on a personal computer. Students use MyLab for understanding content and completing homework assignments and assessments. Stohs' goal in assigning MyLab homework is to provide students with sufficient exposure to quantitative material necessary to prepare for exams and to provide adequate practice opportunities. He believes that the real learning occurs during this practice and anticipates that students will spend at least two hours per week using MyLab and its resources in order to be successful in his course. On an end-of-semester survey of Stohs' students (98 percent response rate), 40 percent of respondents said they spent 2–3 hours per week working in MyLab, while 58 percent spent more than three hours per week in the program.

During the first week of class, students must complete the following three tasks. Students who do not complete these tasks by the due date and time are automatically dropped from the course:

- Register for MyLab Finance;
- Review the MyLab orientation video or PowerPoint presentation; and
- Complete the Time Value of Money Calculator quiz in MyLab with a grade of 70 percent or higher.

Using the CSU–Fullerton recording studio, Stohs creates a video lecture for each chapter, each lasting about two hours. The studio is designed to assist instructors teaching online courses and

uses audio PowerPoint slides specifically prepared for this purpose. Each video ends with ten worked-out sample exam problems.

Weekly MyLab homework is comprised of a pre-built assignment using end-of-chapter problems carefully chosen using MyLab [question metrics](#). Stohs follows a Pearson best practice in choosing questions based on these metrics so he knows approximately how long the homework assignment should take and how challenging it will be. Learning aids are turned on, and 86 percent of respondents on the student survey said they usually or always use the learning aids when unable to start or complete a problem. Many students commented on the assistance from Help Me Solve This. One student in particular said, “[Help Me Solve This] was able to show me how to work out problems step by step to gain a better understanding of the topic.” Additionally, students have unlimited attempts at completion of homework assignments, to encourage continuous learning. On the student survey:

- 98 percent of respondents agreed that having multiple attempts allowed them to master the chapter contents.
- 86 percent of respondents confirmed that they always or usually reworked homework problems in order to earn a higher score.
- 93 percent of respondents agreed that they completed more homework for this course with MyLab Finance than they would have had the homework not been required.

MyLab quizzes are low stakes, filling the gap between formative homework and summative exams. Quizzes are comprised of ten, multiple-choice or fill-in-the-blank, pooled questions. Students have two attempts and 50 minutes for completion. The highest quiz score is recorded in the gradebook. Stohs uses the [gradebook item analysis](#) to identify questions that are either too simple or too challenging, adjusting homework and quizzes in subsequent semesters to more closely align with his expectations.

Students also have access to additional, optional resources in MyLab. On the end-of-semester survey, 60 percent of students indicated that they used the MyLab Study Plan and 44 percent used the eText in MyLab, while only 23 percent of students did not use any optional resources in the program.

Additional course assessments include two midterms and a cumulative final exam. The midterm includes a combination of 40 multi-part numeric problems and multiple-choice questions, while the final exam comprises 50 similar questions. Questions are pooled and randomized, and students have two attempts and 100 minutes for completion. The highest score is recorded in the gradebook. Students have access to notes and the textbook during exams, but the time limit ensures they understand the material and must be prepared. Additionally, all students complete a valuation exam. Time value of money is the most important concept students will learn, and this online exam in MyLab consists of questions from chapters 3, 4, 6, and 7. This exam is common across all sections of the course.

Assessments

- 45% Midterm exams (2)
- 25% Final exam
- 15% Valuation exam
- 10% MyLab homework and quizzes

- 5% MyLab Time Value of Money quiz

Results and Data

MyLab quizzes bridge the gap between low-stakes homework assignments comprised mainly of numeric problems with unlimited attempts — intended for practice — and high-stakes exams with just two attempts and a time limit. For students in Stohs' course, the MyLab quizzes are intended to help them identify where they are in terms of successfully completing the summative course exams.

Students were divided into two groups based on their average MyLab quiz score. Data show that students who earned above average MyLab quiz scores had average exam scores 15 percentage points higher than students who scored below average (figure 1).

Average MyLab quiz scores and average exam scores

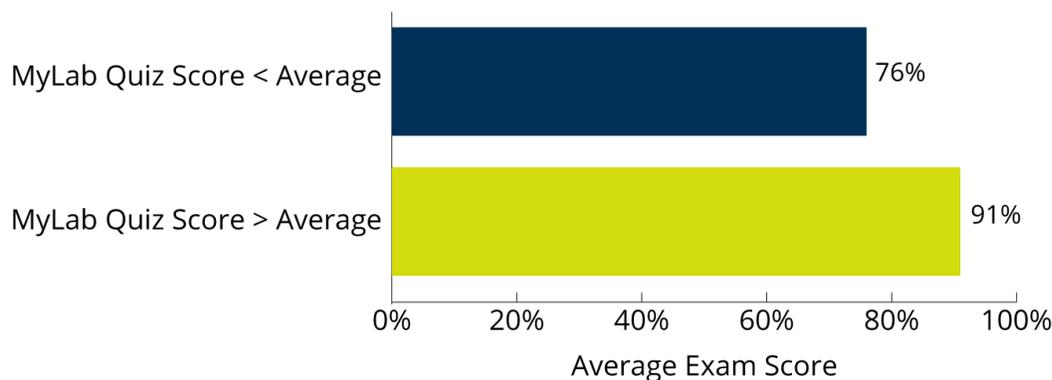


Figure 1. Average MyLab Exam Score for Students Scoring Above and Below the Average MyLab Quiz Score, Fall 2017 ($n=43$)

The average MyLab quiz score was 89 percent. Grouping students based on the quiz average identifies the following:

- 76 percent of students scoring above average on MyLab quizzes earned an A as their final course grade.
- All students scoring above average on MyLab quizzes earned an A or B as their final course grade.
- Performance on MyLab quizzes appears to be an indicator of course success (additional research is needed to develop and test this concept further).

For clarification, students earning an A-, A, or A+ at CSU are all included in the final course letter grade of A (and this applies to B, C, and F as well).

Average MyLab quiz scores and final course letter grades

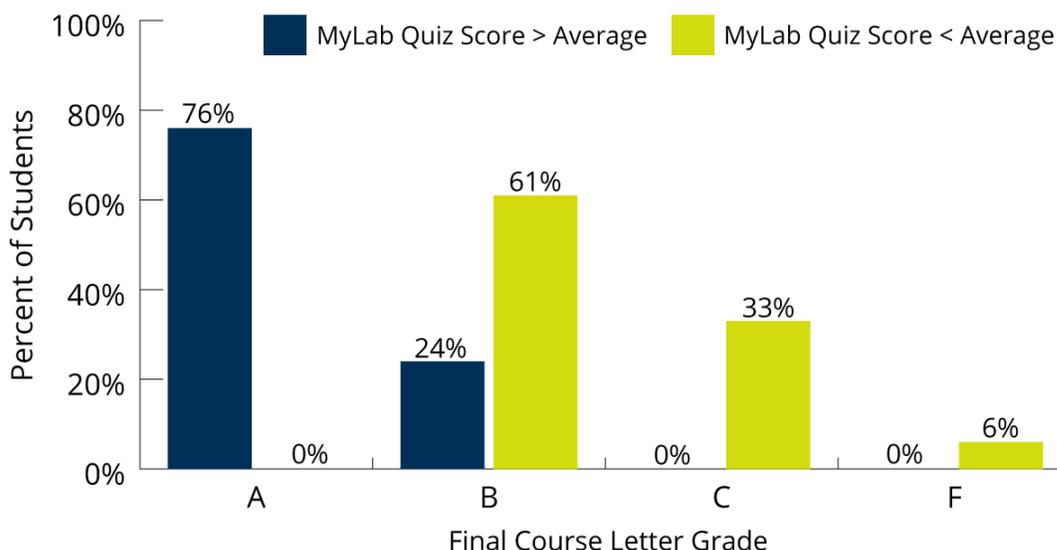


Figure 2. Final Course Letter Grades for Students Scoring Above and Below the Average MyLab Quiz Score, Fall 2017 (n=43)

As a formative assessment, Stohs offers students the opportunity to take MyLab quizzes twice. Table 1 identifies the percent of students who took the quiz twice for each chapter along with the percent of students who achieved an increase in score by repeating the quiz. Overall, students opted to take a second quiz 26 percent of the time, and, of those second quiz attempts, 68 percent of attempts resulted in a higher quiz score.

Second quiz attempts and score improvement after second attempt

Second Quiz Attempts (n = number of students)	Percent of Students Using Both MyLab Quiz Attempts	Percent of Students Increasing MyLab Quiz Score after Second Attempt
Chapter 1 (n=12)	28%	67%
Chapter 2 (n=10)	23%	60%
Chapter 6 (n=14)	33%	64%
Chapter 7 (n=15)	35%	73%
Chapter 5 (n=11)	26%	55%
Chapter 8 (n=17)	40%	76%
Chapter 9 (n=19)	44%	58%
Chapter 11 (n=6)	14%	100%
Chapter 12 (n=3)	7%	100%
Chapter 13 (n=4)	9%	75%
Average	26%	68%

Table 1. Percent of Students Using Both MyLab Quiz Attempts and Percent of Attempts Resulting in MyLab Quiz Score Increase, Fall 2017 (n=43)

The Student Experience

Responses from the Fall 2017 end-of-semester survey of Stohs' students indicate that the majority of responding students recognize the value of MyLab Finance.

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

Students responses to the question "What were the benefits of MyLab?" include:

- *"Step by step solutions always help me with ultimately understanding the overall concept and reinforcing my learning."*
- *"If you get a homework problem wrong, it gives you the chance to work until you get it right and it helps you in solving problems."*
- *"I like that our professor gave us multiple attempts to learn the material. It helped me to better understand the concepts and prepare me for exams."*
- *"The benefits of using MyLab is that you are able to use an e-book to look for key concepts, and I was able to get more practice in MyLab and use the study tools to help me study for tests."*

*"I like that our professor gave us multiple attempts to learn the material. It helped me to better understand the concepts and prepare me for exams."
—Student, California State University–Fullerton*

Conclusion

Online courses can pose a challenge, as students may miss out on regular interaction with their instructor. The combination of Stohs' online virtual lessons and MyLab assignments, however, gave students the background and practice necessary to be successful. Recognizing that students need practice, Stohs uses both homework assignments and quizzes, setting his students up for a positive experience. Quizzes bridge the gap between problem solving and conceptual understanding, leading students to validate that their understanding of the course material increased as a result of using MyLab Finance. "MyLab was able to show me how to work out problems step by step and gain a better understanding of the topics," confirmed a student on the end-of-semester survey.