MyFinanceLab

School Name Radford University, Radford, VA

Course Name Introduction to Business Finance

Course Format Flipped, ebook

Key Results Data show strong positive correlations between MyFinanceLab homework scores and MyFinanceLab quiz scores and between average quiz scores and average exam scores. In addition, students who complete all or most MyFinanceLab homework earn higher average quiz, exam, and final course grades than do students who routinely skip MyFinanceLab homework.

Submitted by
Rodrigo Hernandez, Associate Professor

Course materials
MyFinanceLab and *Principles of Managerial Finance,* Gitman

Setting

Radford University is a midsized four-year university located in the Blue Ridge Mountains of rural southwest Virginia. From its primarily residential campus, the school serves approximately 10,000 students of which 91 percent are undergraduates, 81 percent are Caucasian, and 77 percent are between the ages of 18 and 21. The school's four-year graduation rate is 41 percent.

Introduction to Business Finance is a one-semester, three-credit, lecture/discussion course required of all business majors and enrolling approximately 450 students per year. Instruction includes demonstrations, in-class exercises, problem assignments, and periodic exams. Instruction is augmented by outside readings and projects covering financial statement analysis, financial management concepts and techniques, and how the principles of finance can be used to enhance the value of a firm. Course learning objectives include understanding the mathematics of interest rates, taxes, and the time value of money, financial statement analysis and forecasting, valuation techniques, the measurement and relationship between risk and expected return, capital investment decisions, and working capital management.

Challenges and Goals

In 2007, Rodrigo Hernandez, associate professor, sought a fresh perspective for his Business Finance course. He and his colleagues noticed that students showed signs of lack of engagement with the course: they were not purchasing the expensive textbooks required for the course, they were not completing homework assignments, and they were coming to class unprepared. Hernandez and his colleagues reviewed the top three digital programs available at the time. While graded homework, which is important for content comprehension, was a critical part of their decision, the ability of a program to reach students in their moment of confusion and help them create a path to understanding was equally important. Hernandez and his colleagues chose MyFinanceLab for its ability to provide that additional feedback; the inclusion of an ebook was an additional financial benefit.

Implementation

Hernandez believed that flipping the classroom—requiring students to do preparatory work before lecture—would also improve student engagement and enable him to bring deeper learning to students' in-class time. Hernandez no longer uses PowerPoint presentations during class; class time is spent on problem solving and covering more-challenging content and homework questions. Lectures often begin with a quiz (usually every other week) followed by a discussion of headline events, review of homework problems, content lecture as needed (minimal), continued problem solving, and a look at future assignments. Classes meet three times per week; students have one or two MyFinanceLab homework assignments per week.

Outside the classroom, students are assigned the following:

Prelecture work

- Read the sections/chapter in the ebook.
- Watch the prerecorded video of the chapter (self-created) on the school LMS.
- Complete End of Chapter questions (approximately 10 per chapter).

Postlecture assignments and assessments

- **Knewton Adaptive Study Plan (optional).** Hernandez strongly suggests that students practice the End of Chapter questions before beginning their homework assignments.

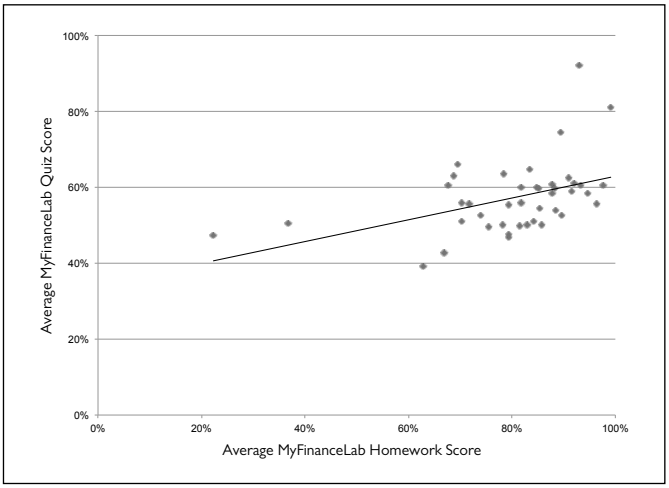

Figure 1. Correlation between Average MyFinanceLab Homework Scores and Average MyFinanceLab Quiz Scores, Fall 2014 (*n* = 42)

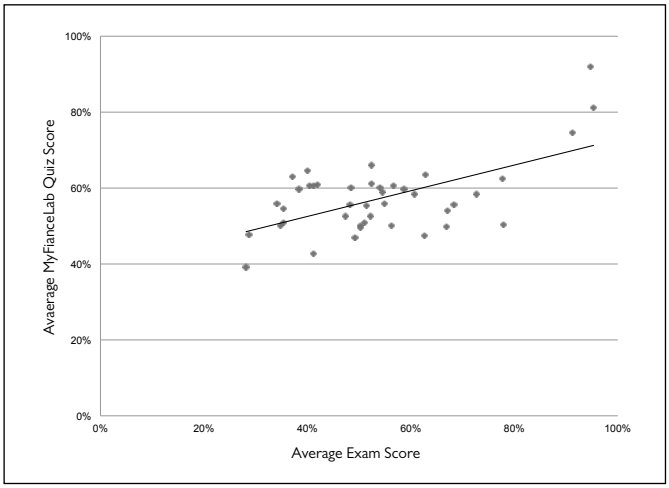

Figure 2. Comparison of Average MyFinanceLab Quiz Scores and Average Exam Scores, Fall 2014 (*n* = 42)

- **MyFinanceLab homework assignment.** Each assignment includes six or seven multipart questions; students are allowed two attempts at each question. Assignments are open until the day before each corresponding exam (approximately three and a half weeks).
- **MyFinanceLab quizzes.** Quizzes generally cover concepts and definitions and include 10 questions. Students are allowed two attempts within two hours. Questions are static and taken from the test bank; they are not algorithmic, but Hernandez uses pooling to increase the variability of questions—students receive one question from a pool of 10–15 questions for each topic—and to reduce the chance of two students receiving the same questions. As with assignments, quizzes are open until the day before each exam on the corresponding chapters (approximately three and a half weeks).
- **Exams.** The three midterms and final exam are pencil and paper, given in class, and usually cover two chapters each. Students have 50 minutes to complete 5–6 two-part, open-ended midterm problems and 8 similar problems on the final exam. Makeups are allowed only under extreme circumstances.

In-class quizzes are given at the beginning of class and include one problem that should take 10–15 minutes to complete. Quizzes are designed to serve as wake-up calls before exams.

Hernandez drops students' two lowest MyFinanceLab homework scores and five lowest MyFinanceLab quiz scores.

Assessments

45 percent	Midterm exams (three)
20 percent	MyFinanceLab homework (21)
20 percent	Quizzes: MyFinanceLab (13), in class (eight)
15 percent	Final exam

Results and Data

Correlations do not imply causation but instead measure the strength of a relationship between two variables. *P* value measures the statistical significance/strength of this evidence (the correlation); p value < .01 is considered strong evidence. Figure 1 shows the correlation between MyFinanceLab homework scores and MyFinanceLab quiz scores, where $r = .54$ and $p < .001$, indicating a strong positive relationship between the two variables. Similarly, a strong positive correlation, where $r = .59$ and $p < .001$, exists for average quiz scores and average exam scores (Figure 2). MyFinanceLab homework scores can potentially help students identify where they stand in terms of quiz and exam preparation; it appears that performance on MyFinanceLab assignments may be indicative of further course assessment success (a more rigorous study might develop and test this concept further). As a best practice, MyFinanceLab grades could help instructors identify early on students who are at-risk and need immediate intervention.

In addition, MyFinanceLab homework completion rates were analyzed to determine the impact of completion on average quiz, exam, and final course grades (Figure 3). Results show that students who completed most assignments scored significantly higher on all three course calculations.

Students who completed all assignments had average quiz grades 18 percent higher than students who skipped two or more assignments.

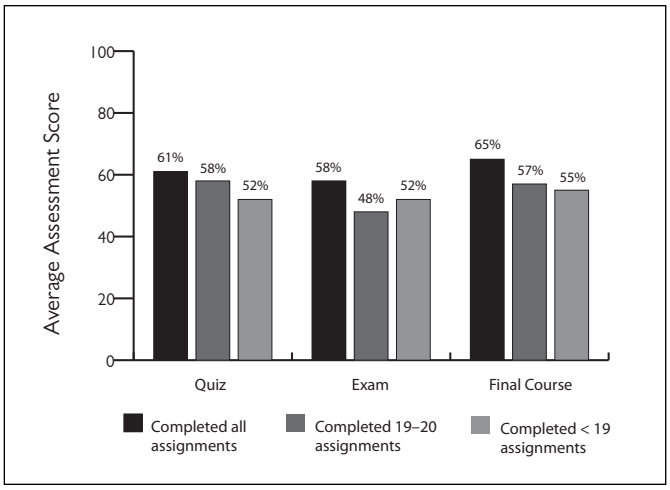

Figure 3. Relationship between MyFinanceLab Homework Completion and Average Quiz, Exam and Final Course Grades, Fall 2014 (n = 42)

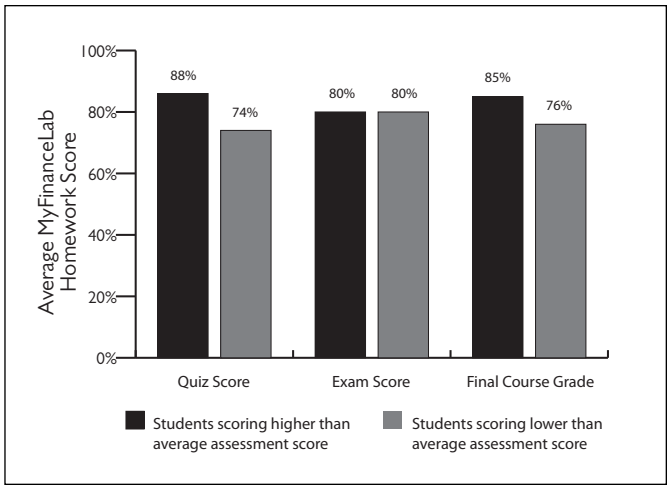

Figure 4. Relationship between Average MyFinanceLab Scores and Course Assessment Scores based on Average Assessment Scores, Fall 2014 (*n* = 42)

- Students who completed all assignments had average quiz grades 18 percent higher than students who skipped two or more assignments.
- Students who completed all assignments had average exam grades 15 percent higher than all other students.
- Students who completed all assignments earned average final course grades 15 percent higher than students who skipped one or two assignments.
- Average number of skipped assignments: 1.6.

Students were grouped according to average scores on each course metric (above or below average): quiz, exam, and final course. Figure 4 shows the average MyFinanceLab score for each group per metric.

- Students who earned above the average quiz score achieved an average MyFinanceLab grade 16 percent higher than students who earned below the average quiz score.
- Students who earned above and below the average exam grade scored the same MyFinanceLab grade (80 percent).
- Students who scored above the average final course grade earned an average MyFinanceLab grade 12 percent higher than students who scored below the average final course grade.

The Student Experience

Responses from a voluntary, fall 2014 student survey indicate that the students surveyed make the connection between use of MyFinanceLab and increased understanding.

90% Agree or strongly agree that their understanding of the course material increased as a result of using MyFinanceLab.

74% Agree or strongly agree that the use of MyFinanceLab positively impacted their exam scores.

93% Agree or strongly agree that MyFinanceLab provided additional resources that helped them learn more than they would have from more traditional pencil-and-paper homework.

Hernandez reports that since implementing MyFinanceLab and flipping his classroom, students spend less time at his office hours, come to class better prepared and ready to problem solve, and are generally more engaged during class.

On the same survey, when asked what they liked best about MyFinanceLab, student answers included the following:

"[MyFinanceLab] showed me my progress for each assignment on a graph that helped me visualize where I stood with my grades."

"I liked the Similar Question aspect on the quizzes. If I didn't know how to do a problem, but grasped the concept, [the program] showed me how to do any problems that weren't straightforward."

"I liked the Help Me Solve This tool. I could see how to do the problem and learn from my mistakes."

"[MyFinanceLab] was easy to work with. It had many options to help me study."

Conclusion

Hernandez reports that since implementing MyFinanceLab and flipping his classroom, students spend less time at his office hours, come to class better prepared and ready to problem solve, and are generally more engaged during class. Because students pick up chapter basics in preclass MyFinanceLab work, Hernandez now is able to spend class time reviewing difficult topics, working through more-challenging homework problems, and pointing out potential pitfalls. This observation is supported by Matt Stoltzfus, a lecturer at Ohio State University who also teaches large, introductory classes via the flipped model. According to Stoltzfus, "The [flipped] model provides more meaningful interactions for students and teachers by giving teachers higher-quality face time with students."[1] In addition, MyFinanceLab enables Hernandez to require that students take responsibility for their learning outside the classroom, so that deeper critical thinking and conceptual learning can take place inside his classroom.

1. Brian Lukoff and Matthew Stoltzfus, "Professors: Here's How to Flip Your Classroom," eCampus News, March 24, 2014, http://www.ecampusnews.com/top-news/professors-flipped-classroom-425/.