

## MyLab Business Statistics educator study analyzes exam scores at Florida State University

### Key Findings

- After implementing MyLab Business Statistics, the percent of students earning an A or B as the final course grade increased substantially over two previous semesters when other programs were in use.
- Students who completed all MyLab assignments earned average exam scores one full letter grade, or 10 percentage points, higher than students who skipped at least one MyLab assignment.
- 84% of student survey respondents agreed that the use of MyLab Business Statistics helped them learn more than they would have from traditional paper-and-pencil homework.

### Study Specifics

**School:** Florida State University, Tallahassee, FL  
**Course name:** Quantitative Methods for Business Decisions  
**Course formats:** Face to face and online  
**Course materials:** MyLab Business Statistics for *Business Statistics* by Donnelly

**Timeframe:** Fall 2016–Fall 2017  
**Educator:** Dr. Gary Bliss, Senior Lecturer  
**Results reported by:** Candace Cooney, Pearson Customer Outcomes Analytics Manager

### Setting

- Locale: large, urban, public, four-year space-grant, sea-grant research university
- Enrollment: more than 41,000 students
- Freshman retention rate: 93%
- Six-year graduation rate: 79.4%
- Ethnicity: 64% Caucasian, 20% Hispanic, 8% African American, 2% Asian, 6% Other

### About the Course

Gary Bliss has been teaching at Florida State for approximately 35 years, full-time since 2002. Quantitative Methods is a one-semester, three-credit course required of most business students, enrolling more than 1,200 students each year. This course involves the use of statistical techniques to make business decisions and analyze the outcomes of those decisions. A major objective of the course is for students to develop analytical skills and apply those skills to the business decision process, using Excel and other computer-based models and techniques. The course is divided into five modules: Descriptive Statistics, Probability, Confidence Intervals and Hypothesis Testing, Analyzing Variances, and Regression and Prediction.

## Challenges and Goals

Teaching small classes allowed Bliss to hand grade the project-based exams he prefers for assessment, but reassignment to large lecture sections in Fall 2016 dictated a change in class format. Initially, he adopted a competitor's text and digital homework program with disappointing results due to a lack of technical support during a software failure. Moving away from publisher programs for Spring 2017, Bliss created all his own homework and assessment content in Canvas, the school's Learning Management System. However, this solution lacked the student feedback and support that publisher programs offer, so while it addressed his need for grading assistance, it didn't offer any discernible benefit for his students. As Fall 2017 approached, **Bliss reviewed the Pearson MyLab™ system along with a competitor's program, and chose to adopt MyLab Business Statistics for the student support it offered.**

## Implementation

Students have options when purchasing their course materials, and increasingly, more students are opting to purchase the MyLab and eText-only combination. On an end-of-semester survey of Bliss's students (54% response rate), students shared the following about their textbook choice:

- 90% purchased only the MyLab access code/all-digital option (eText and code only)
- 10% purchased the MyLab access code and a new or used print textbook

Bliss's 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 anticipates that his students will spend at least 2 hours per week using MyLab and its resources in order to be successful in his course. On the student survey, 47% of respondents said they spent 2–3 hours per week working in MyLab, and 32% spent more than three hours per week.

Weekly MyLab homework is based on learning objectives and chosen using [question metrics](#), a Pearson best practice, enabling Bliss to use a mix of basic and challenging questions carefully chosen for time and difficulty. Each assignment consists of approximately 10 multi-part problems and several multiple-choice conceptual questions. Students have unlimited attempts at completion and no late assignments are accepted. On the student survey, 90% of respondents agreed that this additional practice helped them master the chapter concepts, and 84% of respondents agreed that they completed more homework for this course than they would have if MyLab had not been required.

Learning aids are turned on for homework assignments, and 82% of survey respondents said they usually or always use the learning aids when unable to start or complete a problem. Many students commented on the learning opportunities provided by the homework aids:

- *"The Help Me Solve This tool helps students who are unable to figure out a problem and would more than likely skip the question on a homework assignment to finish the problem."*
- *"The View an Example and Help Me Solve This kept me from getting discouraged."*
- *"It's useful to get guided help on each homework problem, ensuring I really understand how to do each problem."*
- *"The learning aids help me complete problems I am stuck on."*

Bliss uses the MyLab gradebook to identify content the class is struggling with as a whole. He holds Virtual Office Hours where students may join and see his screen while he works through similar problems with additional explanation and review. This allows him to keep the class pace consistent without risk of students falling behind.

Summative course assessments include three exams covering several chapters each. Exams are comprised of 50 multiple-choice, true/false, and short response questions. They are not specifically cumulative, but knowledge from prior material covered is necessary to successfully complete future exams. Exams are proctored in the campus testing center or a designated proctor location for offsite students. Exams are made available to students for five days, but they must be completed in one sitting once opened.

## Assessments

- 85% Exams (3)
- 15% MyLab homework assignments (11)

## Results and Data

Final course grades were calculated for Fall 2017 and Spring 2018 when MyLab Business Statistics was first implemented, as well as for the two previous semesters, Spring 2017 and Fall 2016. In Fall 2016, a competitor's digital program had been adopted, and in Spring 2017, Bliss delivered self-created homework and assessments through the school LMS, Canvas (figure 1). After implementation of MyLab, substantially more students earned higher final course grades and fewer students failed the course.

Spring 2018, using MyLab:

- 62% of students earned an A or B as the final course grade.
- 6% of students earned a D or F as the final course grade.

Fall 2017, using MyLab:

- 58% of students earned an A or B as the final course grade.
- 18% of students earned a D or F as the final course grade.

Spring 2017, using the school LMS:

- 42% of students earned an A or B as the final course grade.
- 27% of students earned a D or F as the final course grade.

Fall 2016, using a competitor's digital program:

- 45% of students earned an A or B as the final course grade.
- 28% of students earned a D or F as the final course grade.

### Final course grades before and after implementation of MyLab Business Statistics

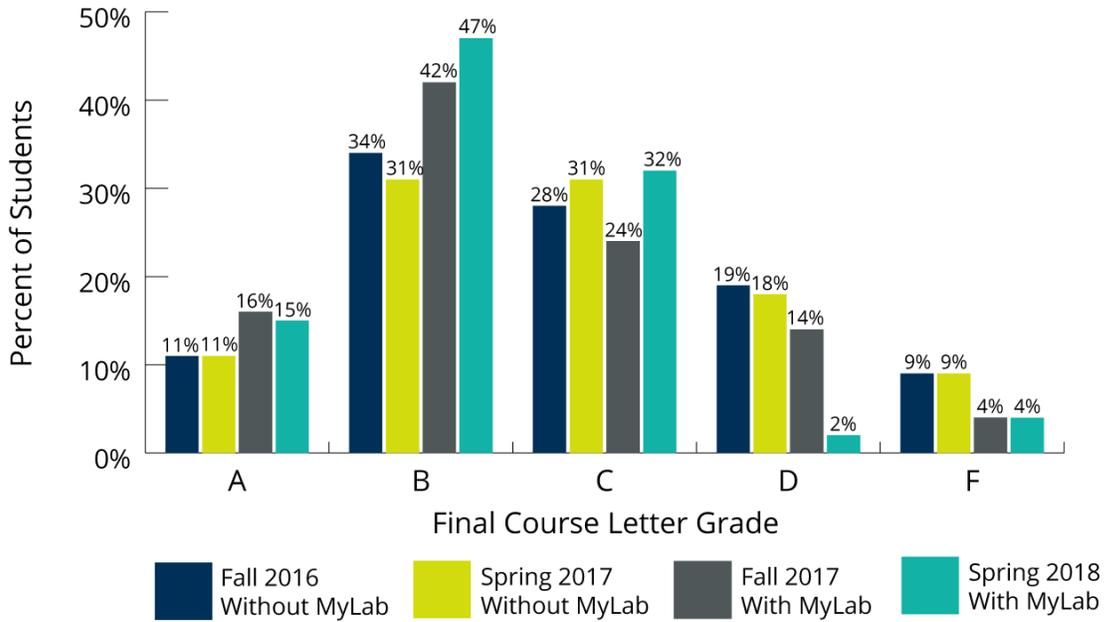


Figure 1. Final Course Letter Grades Before and After Implementation of MyLab Business Statistics, Fall 2016 ( $n=545$ ), Spring 2017 ( $n=480$ ), Fall 2017 ( $n=581$ ), Spring 2018 ( $n=428$ )

Grouping students based on completion of MyLab homework assignments identifies that students completing all MyLab assignments earned average exam scores one full letter grade, or 10 percentage points, higher than students who skipped at least one assignment. For students, completion of the formative MyLab problem sets are intended to help them identify where they are in terms of successfully completing the summative course exams. Empirically, Bliss agrees that the MyLab homework should have a positive impact on exam scores, as practice is a cornerstone for successfully completing his course.

### MyLab homework completion and average exam scores

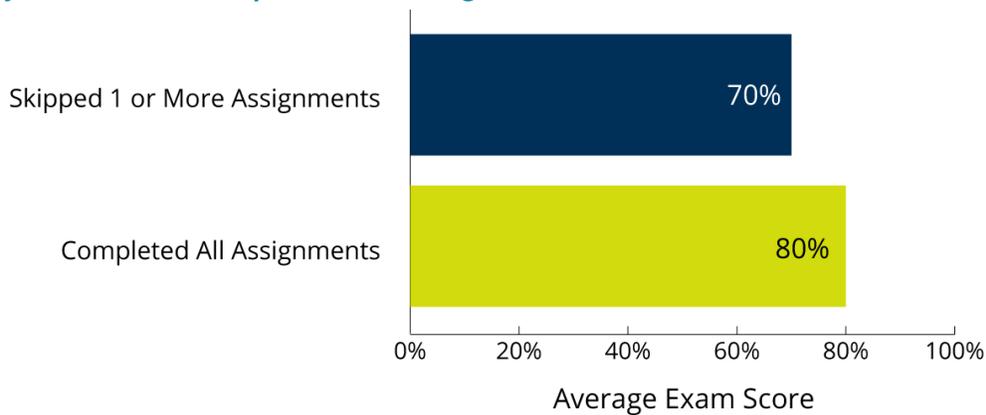


Figure 2. Relationship between MyLab Homework Completion and Average Exam Scores, Fall 2017 ( $n=581$ )

## The Student Experience

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

- 84% of respondents agreed that MyLab provided additional resources that helped them learn more than they would have from traditional paper-and-pencil homework.
- 83% of respondents agreed that their understanding of the course material increased as a result of using MyLab.
- 79% of respondents agreed that MyLab homework assignments positively impacted their exam scores.
- 85% of respondents would recommend MyLab to another student.

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

- *"I was able to do the problems over again. The similar question gives me new numbers, so I'm not just memorizing the numbers."*
- *"Being able to see what you did wrong and then being able to do a problem over with different numbers really helps reinforce the lesson without penalty so that you can truly understand it and not just move on without fully understanding it."*
- *"The biggest resource in MyLab is being able to look at a similar problem while working on the homework [View an Example]."*
- *"I think the feedback one gets when answering wrong was very helpful for me. Also how you can copy, paste, or even open a spreadsheet from any problem that requires it."*
- *"The biggest benefit is that MyStatLab can help you work your way through an assignment by piecing the puzzle together."*

## Conclusion

Although Bliss is a new MyLab adopter, he has used digital homework programs in the past and is familiar with the student feedback and support publisher programs have to offer. Particularly in large classes, students may not feel comfortable asking questions or interrupting lecture for additional explanation, so having the tutorial support of the MyLab program during homework is important for student success. Additionally, the MyLab gradebook offers a glimpse into those content areas where students are struggling, giving Bliss the opportunity to keep students from falling behind before the next exam.

Bliss cautions, though, that there is a learning curve for the instructor, and suggests that a new user who does not plan to use a pre-built course spend time with their Pearson rep learning the details and nuances of the program. "It's a process to learn something new, so be prepared for that," he shares. The initial semester is the most time consuming, as the created course can simply be copied and tweaked in subsequent semesters. The effort is rewarded however, as Bliss is relieved of grading, has more time for lecture prep, and his students have access to just-in-time support not available with a traditional paper-and-pencil homework format.