Key findings:

- Students earning MyLab™ homework scores above the median earned statistically significantly higher average test and final course scores than students who scored below the median on MyLab homework assignments.
- Students showing mastery of course content by receiving an A, B, or C as a final course grade earned average MyLab homework scores 12 percentage points higher than students who received a D or F as the final course grade.
- 92 percent of students completed at least one Dynamic Study Module assignment for extra credit.

Setting

**Locale:** large, suburban, public, liberal arts, two-year community college based in the Piedmont Triad of North Carolina; third largest of the 58 community colleges in the North Carolina Community College System

**Enrollment:** more than 15,000 students

**First-time, full-time students:** 50 percent

**Full-time students:** 32 percent

**Full-time retention rate:** 49 percent

**Three-year graduate rate:** 10 percent

**Faculty-student ratio:** 25:1

**School name:** Guilford Technical Community College, Jamestown, NC

**Course name:** Principles of Managerial Accounting

**Course format:** Face to face

**Course materials:** MyLab Accounting with Horngren’s Managerial Accounting by Miller-Nobles, Mattison and Matsumura

**Timeframe:** Spring 2017

**Educator:** Crystal Drum, Associate Professor

**Results reported by:** Candace Cooney, Pearson Customer Outcomes Analytics Manager
About the course

Crystal Drum has been teaching introductory accounting courses for approximately 9 years at GTCC. Principles of Managerial Accounting is a four-credit, one-semester course that is the second semester of a two-semester sequence, enrolling approximately 125 students per semester. The course is required of Accounting, Business Administration, and Medical Office Administration majors. The course is transferrable to four-year institutions. Principles of Managerial Accounting places an emphasis on managerial accounting concepts for external and internal analysis, reporting, and decision-making. Upon completion, students should be able to:

- Journalize bond transactions and equity transactions of a company;
- Complete a corporate statement of retained earnings, income statement, and statement of cash flow;
- Prepare cost of goods sold sections of a manufacturing company’s income statement and calculate product costs to prepare journal entries of costs flows in a job cost system; and
- Use a variety of costing methods to make managerial decisions.

Challenges and Goals

In 2010, Drum was using a competitor’s digital program, but the experience was challenging for her and her students. The program contained many errors, and students were having difficulty completing assignments. Believing that practice and repetition is necessary for student success in Accounting, Drum identified MyLab Accounting as a possible solution for her students, offering them varied opportunities for practice and review. In Fall 2010, she adopted MyLab for her classes. In Spring 2017, Drum offered her students extra credit for completion of the Dynamic Study Modules in MyLab Accounting. The DSM provided yet another opportunity for practice, presenting students with personalized feedback based on their specific mistakes.

Implementation

Lecture

Drum uses the PowerPoint slides that accompany the textbook as an outline for lecture. She incorporates multi-part problems that simulates what students can expect to complete as part of MyLab homework assignments and on tests. Lecture is interactive, with many opportunities for hands-on learning and group work.

MyLab Accounting Homework

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 additional practice. Drum’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. Drum anticipates that students will spend about five hours per week working in MyLab. During the first face-to-face meeting, Drum uses one student as an example, and walks the class through that student’s MyLab registration and log-in process. She finds that this generally goes smoothly, as most students are familiar with MyLab from previous classes.

Before lecture, students complete the chapter video assignment. After watching a 10- to 15-minute video, students complete 3–5 multiple-choice questions that align with chapter learning objectives. Drum creates her MyLab homework using end-of-chapter problems as a formative, after-lecture assignment. There is one assignment per chapter with a firm due date, comprised of several long, multi-part problems per learning objective covered. Students have unlimited attempts at completion and learning aids are turned
on, because practice is of most importance when completing homework. These MyLab homework assignments are similar in format and difficulty to those students will encounter on exams.

**MyLab Dynamic Study Modules**

Drum offered her student extra credit in the form of points added to test scores if they complete the Dynamic Study Modules (DSM), which are questions that continuously assess student performance and activity. Using data and analytics to provide personalized feedback in real-time, the DSM reinforce concepts that target an individual student’s strengths and weaknesses. As one student stated, “The DSM helped me understand the material by showing me what areas I struggled in and allowed me to relearn the information until I got it right.” The DSM are mastery-based and also follow Drum’s teaching philosophy that students learn by repetition. Although the MyLab gradebook does not capture student scores for the DSM, it does allow Drum to see how much time students are spending on the DSM. On average, Drum reports that students are spending 30-40 minutes per chapter on this extra credit assignment.

Eight students in Drum’s class were voluntarily polled about the DSM and shared the following:

- 8 out of 8 students agreed that the test-review-retest pattern of the DSM helped them learn and remember chapter content.
- 7 out of 8 students agreed that the use of confidence levels when answering questions in the DSM (I am sure, I am partially sure, I don’t know yet) helped them identify specific topics they needed to work on.

“In the DSM were a great review tool. I was able to remember some things that we had studied earlier and was able to pass the tests more effectively.”

“I liked how the DSM would repeat the questions that I didn’t know until I understood them fully, it is a really great learning tool. I wish all classes would use this.”

“The DSM really drilled the info into my head that I was struggling with by making me answer multiple times.”

In-class quizzes are multiple-choice, paper-and-pencil assessments hand-graded by Drum intended to give students additional practice. The four lowest in-class quiz scores are dropped before calculating the final quiz score. Three paper-and-pencil tests are given during the semester, and are comprised of 8–10 multi-step, comprehensive problems and 10–12 multiple-choice questions. Students have unlimited time for completion.

**Assessments**

- 70% Tests (3)
- 20% MyLab homework assignments
- 10% In-class assignments and quizzes
Results and Data

Students were divided into two groups based on median MyLab homework score. Students who scored equal to or above the median earned higher average test scores and final course grades than students who scored below the median on MyLab homework assignments.

- Median MyLab homework score: 85 percent
- Students earning MyLab homework scores above the median had average test scores 14 percentage points higher than students who earned below the median.
- Students earning MyLab homework scores above the median had average final course grades 15 percentage points higher than students who earned below the median.
- 54 percent of students earned a MyLab homework score higher than the median (n=35).

A t-test measures whether the means of two groups are statistically different. Results of the t-test for MyLab homework and test average in data show that t(121)=2.49 and p<0.05, indicating that this increase was statistically significant.

A comparison of the average MyLab homework score to mastery of course content, measured in terms of student success rate (students earning an A, B, or C as the final course grade), indicates that students exhibiting overall course success (A, B, or C as final course grade) had average MyLab homework scores 12 percentage points higher than students who earned a D or F as the final course grade.

The Student Experience

Responses from the Pearson Student MyLab Accounting Survey Fall 2016 taken by 4,608 students nationally, from both two- and four-year schools, produced the following results:

- 87 percent of respondents reported that MyLab helped them achieve a higher grade on homework, exams, and/or the course.
- 90 percent of respondents would recommend their instructor continue to use MyLab in a future semester.
- 90 percent of respondents who used the Dynamic Study Modules found them helpful in preparing for exams.

Students had the following to share on the national survey:

“MyLab has helped me to earn higher grades because it has so many useful tools. I love the Study Plan! If there is something I am struggling on or need more help with, I’ll look it up in the Study Plan and practice.”

— Student, Florida Institute of Technology

“I am a hands-on learner, so doing the homework [in MyLab] solidified the material much better than just reading the textbook.”

— Student, Everett Community College

“When I could not grasp a concept or had difficulty, Help Me Solve This took me step by step through the process. That definitely helped me...”
Conclusion

Drum has long been a proponent of online homework as a dependable method of ensuring that her students are getting the necessary practice to be successful in accounting. Adopting MyLab provided her students with the accuracy and stability she expected from a digital homework program. Incorporating the Dynamic Study Modules as an optional assignment for further, repetitive practice was another component her students have found effective. Empirically, Drum believes the formative nature of the DSM and the MyLab assignments have a positive impact on student quiz and exam scores. The MyLab gradebook indicates that students are spending approximately 30 minutes per DSM assignment, and she frequently hears from students that the repetitive nature of the DSM helps them quickly identify areas they need to work on. Drum plans to continue using the DSM in future semesters.