

MyLab Accounting educator study evaluates quiz and exam scores at North Dakota State University

Key Findings

- Data show a strong, positive correlation between average MyLab quiz scores and average exam scores.
- Students who earned higher average MyLab quiz scores also earned higher final course grades.
- 94% of respondents on an end-of-semester survey agreed that MyLab Accounting provided additional resources that helped them learn more than they would have from traditional pencil-and-paper homework.

Study Specifics

School name: North Dakota State University, Fargo, ND

Course name: Elements of Accounting II

Course format: Face to face

Course materials: MyLab Accounting for *Horngren's Financial & Managerial Accounting* by Nobles, Mattison, and Matsumura

Timeframe: Spring 2018

Educator: Nancy Emerson, Senior Lecturer

Results reported by: Candace Cooney, Pearson Customer Outcomes Analytics Manager

Setting

- Locale: urban, public, research university on the eastern North Dakota border near Minnesota
- Enrollment: more than 14,000 students; 84% undergraduate
- Freshman retention rate: 92%
- Six-year graduation rate: 58%
- Ethnicity: 82% White, 3% African American, 2% Asian, 13% Other

About the Course

Nancy Emerson has been teaching for approximately 30 years, full-time at North Dakota State University (NDSU) since 2010. Elements of Accounting II is a one-semester, three-credit course that is the second semester of a two-semester sequence. This course is required of all business majors, as well as certain business minors and several other majors including agricultural business and construction management. It enrolls approximately 300 students per year. After successful completion of the course, students will understand the role of managerial accounting information in the planning, budgeting, controlling, and reporting necessary for successful organizational decision making.

Challenges and Goals

Having previously used a competitor's digital homework program to address the issue of grading homework with large sections, Emerson was seeking a new option when her program began experiencing technology-related issues. She believes that students need homework and repetitive practice to gain a solid foundation and grasp of the core accounting concepts and standards covered in the course. Online homework with support and feedback was important. It offered Emerson's students the ability to practice as much as they needed, while immediately seeing what they understood and where they needed further preparation. In Fall 2014, Emerson adopted MyLab™ Accounting for her Financial & Managerial Accounting classes.

Conscious of the fact that course materials can be expensive, NDSU participates in the Pearson [Inclusive Access](#) program, where students are billed automatically during class registration, and all course materials are provided online, including the MyLab access code and a full eText. During registration, students are given the choice to participate in Inclusive Access or purchase course materials more traditionally, on their own. Of Emerson's 59 students in Spring 2018, just one student opted out of the program. Additionally, students may purchase a print text along with their MyLab eText, and on an end-of-semester survey of Emerson's students (31% response rate), just 11% of the students opted to purchase an additional print text, with most students (89%) choosing to use the eText in MyLab.

Generally, students are satisfied when purchasing course materials that have both relevance and impact, a statement supported by the end-of-semester survey where 100% of respondents agreed that the resources in MyLab made the program a good value for the course.

Implementation

Inclusive Access

A significant advantage of the Inclusive Access program is that every student who opts in has access to the course materials on the first day of class. On the student survey, 44% of respondents indicated they usually do not purchase their course materials until after classes begin, putting them at risk of falling behind on assignments early. As such, 94% of survey respondents agreed that they appreciated having their course materials included as part of the Inclusive Access course fee.

Concerns about using the eText and all digital materials were alleviated as the semester progressed:

- Initially, 56% (10 of 18 students) were apprehensive at the beginning of the semester using only the eText for reading and assignments.
- However, 80% of those students (8 of 10 students) agreed that they became comfortable using the eText for their reading and assignments as the semester progressed.

Ultimately, 89% (16 out of 18 students) were comfortable using the eText for reading and assignments either before the semester began or as the semester progressed.

MyLab assignments

Students use MyLab for understanding content, homework assignments, and quizzing. Emerson views the MyLab homework assignments as formative — an opportunity for students to experiment and learn. Because the goal in assigning homework is practice, students have two attempts at completion with firm due dates. Each assignment is comprised of 4–6 multi-part, algorithmic, end-of-chapter problems. Learning aids — just-in-time tutorials and student support — are turned on during homework assignments. On the end-of-semester survey, 94% of respondents said they always or usually activate learning aids when unable to start or complete a problem. As the semester progresses, problems increase in difficulty, and Emerson hides the worked solutions, forcing students to do the calculations on their own. Homework is due by 8 a.m. on the required date, but students may submit assignments up until midnight that same day with a 50% penalty. This eliminates requests for homework extensions and gives students a chance to earn points past the deadline.

MyLab quizzes are comprised of either multiple-choice questions or one multi-part problem, and students have just one attempt and 25 minutes for completion. The format and difficulty of the MyLab quizzes closely align with exams, bridging the gap for students from untimed homework with more than one attempt, to timed, summative exams that are more challenging. The lowest quiz score is dropped prior to calculating the final quiz

score recorded in the gradebook, releasing Emerson from the need to offer make-up quizzes in the event of a verified student conflict.

Other assessments

Emerson assigns two paper-and-pencil midterm exams covering 3–4 chapters each and a comprehensive final exam. Exams are comprised of 25–35 multiple-choice questions, as well as several multi-part problems. Students have 75 minutes for completion. Exams are closed book/closed notes, and no make-ups are allowed, with the exception of a documented emergency.

Assessments

- 34% Midterm exams (2)
- 21% Final exam
- 15% Other assignments (7)
- 11% MyLab homework assignments
- 7% Personal response (clicker) questions
- 6% MyLab quizzes
- 6% Group homework assignments

Results and Data

Figure 1 is a correlation graph; 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 positive 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 strong positive correlation exists between average MyLab quiz scores and average exam scores where $r=.63$ and $p<.001$ (figure 1).

Because MyLab quizzes and exams are similar in format and difficulty, the quizzes are intended to help students identify how prepared they are to successfully complete the summative course exams.

Correlation between MyLab quizzes and average exam scores

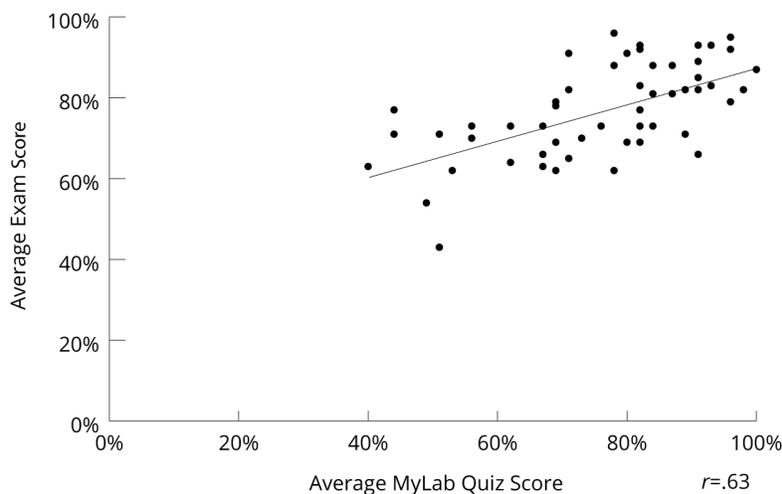


Figure 1. Correlation between Average MyLab Quiz Score and Average Exam Score, Spring 2018 ($n=59$)

Final course letter grades are considered using the average MyLab quiz score (figure 2), identifying that students earning higher average MyLab quiz scores also earned higher final course grades.

- Students earning an A as their final course grade had average MyLab quiz scores 25 percentage points higher than students who earned a C as their final course grade, and 31 percentage points higher than students who earned a D as their final course grade.

Data indicates that MyLab quiz score performance may be a leading indicator of successful course completion. As a best practice, MyLab quiz scores may help Emerson identify students early on who might be at risk of poor overall course performance.

Average MyLab quiz score based on final course letter grade earned

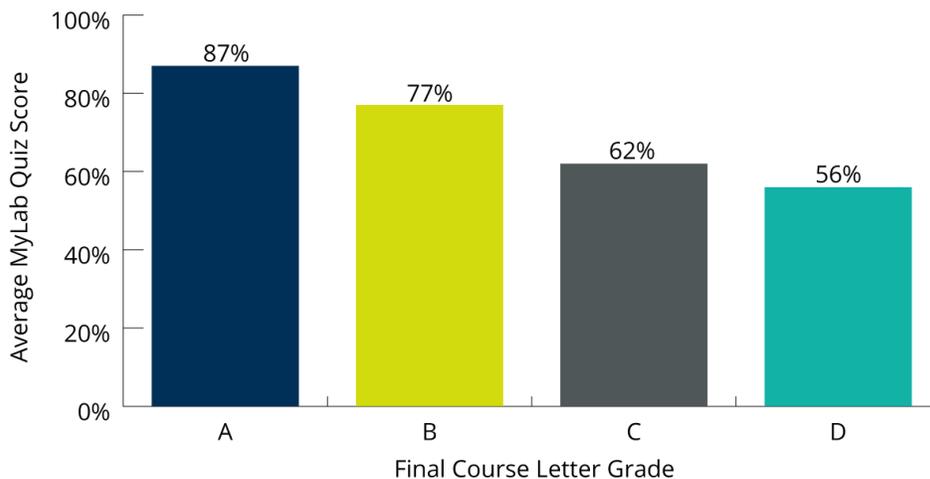


Figure 2. Average MyLab Quiz Score for Final Course Letter Grade Earned, Spring 2018 ($n=59$)

The Student Experience

Responses from the voluntary, Spring 2018, end-of-semester survey of Emerson's students indicate that the majority of responding students recognize the value of MyLab Accounting.

- 89% of respondents agreed that their understanding of the course material increased as a result of using MyLab.
- 94% of respondents agreed that MyLab provided additional resources that helped them learn more than they would have from traditional paper-and-pencil homework.
- 89% of respondents agreed that use of MyLab positively impacted their exam scores.
- 100% of respondents agreed that they would recommend MyLab to another student.
- 100% of respondents agreed that the study and help resources in MyLab were a good value for the course.

Student comments when asked, "What are the benefits of MyLab?" include:

- *"It's nice that your homework gets corrected right away. It's easier to learn from your mistakes, get help, and then understand what you messed up on."*
- *"I learned a lot using MyLab. I loved Help Me Solve This, and the homework really did help me understand the concepts that were taught in class. I love the available tools and videos for studying."*

- *"I love doing problems to learn better. So being able to do them while seeing the problem worked out or being able to go straight to the eText is incredibly useful."*
- *"I like how there were always resources in the program to assist me. MyLab helped me understand the material outside of class."*

"I learned a lot using MyLab. I loved Help Me Solve This, and the homework really did help me understand the concepts that were taught in class."

—Student, North Dakota State University

Conclusion

Homework is formative, and students have the opportunity to try, review, and try again, learning from mistakes and practicing concepts until they are confident. The immediate feedback in MyLab offers Emerson's students something paper-and-pencil homework cannot, helping them quickly identify areas of both strength and weakness, leading to more focused practice opportunities. Students on the end-of-semester survey overwhelmingly agreed that MyLab offered them more than traditional paper-and-pencil homework, while the data indicate that MyLab quiz performance may be an indicator of successful course completion.