

MyLab Accounting educator study examines Dynamic Study Module, quiz, and exam scores at Owens Community College

<p>School Name Owens Community College, Perrysburg, OH</p> <p>Course name Introductory Managerial Accounting</p> <p>Course format Online</p> <p>Course materials MyLab Accounting with <i>Horngrén's Financial and Managerial Accounting</i> by Miller-Nobles, Mattison, and Matsumura</p>	<p>Timeframe Fall 2016</p> <p>Submitted by Janine Rosenthal, Assistant Professor</p> <p>Results reported by Candace Cooney, Pearson Customer Outcomes Analytics Manager</p>
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Key Findings

- Students who completed all Dynamic Study Modules earned higher average quiz and exam scores than students who skipped at least one Dynamic Study Module assignment.
- Data indicate strong correlations exist between MyLab homework scores and average Dynamic Study Module, quiz, and exam scores.
- 100 percent of students responding to an end-of-semester survey agreed that the test-review-retest pattern of the Dynamic Study Modules helped them to learn and remember content.

Setting

- Locale: two-year, suburban, public institution located in northwestern Ohio
- Enrollment: more than 9,000 students
- Full-time students: 31 percent
- First-time students: 20 percent
- Graduation rate (3-year): 11 percent
- Student-faculty ratio: 15:1
- Average class size: 13.6
- Average age: 25.6

- Gender: 52 percent female
- Ethnicity/race: 29 percent identify as minority

About the Course

Janine Rosenthal has been teaching Accounting full-time for six years at Owens Community College. Introductory Managerial Accounting is a one-semester, three-credit course which is the second course in a two-semester sequence, enrolling approximately 125 students per year. It is required of all business administration majors. The course introduces students to managerial accounting terms, concepts, and systems, and includes corporate accounting, cost-volume-profit analysis, budgeting, relevant costing, and capital expenditure analysis. Upon successful completion of this course, students should be able to:

- Identify the differing information needs of internal management and external users of financial information;
- Identify the basic managerial accounting terminology and concepts;
- Calculate job costing and process costing; and
- Prepare cost-volume-profit analysis and prepare budgets.

Challenges and Goals

In 2015, Rosenthal and her colleagues were looking to add a digital course companion to their core Accounting classes. Believing that students need both practice and feedback to be successful in Accounting, they wanted a program with a wide variety of student resources and features. While they reviewed other available products, the consensus was that MyLab Accounting offered the broadest range of options for both assessment and student self-study. They adopted MyLab™ Accounting in Fall 2015 for both Financial and Managerial Accounting classes. In Fall 2016, Rosenthal required use of the Dynamic Study Modules, hoping that the concept-based nature of the assignment would help students understand the chapter theories and prepare for quizzes.

Implementation

MyLab Accounting is required; the program is used predominantly by students at home on a personal computer. Students use MyLab for practice and homework assignments as well as all assessments. Rosenthal's goals for assigning work in MyLab are to get students to read the textbook, practice problems that address key Accounting concepts, and reinforce concepts introduced in lecture. As the course instructor, Rosenthal's role is to assign content, homework, and assessments in MyLab, introduce new content in lecture, and provide support and remote monitoring to students. She anticipates that students will spend approximately 3 hours per week working in MyLab, which may include reading the eText and completing assignments. Based on results of a voluntary, end-of-semester survey (64 percent response rate), 44 percent of students said they spent more than three hours per week using MyLab, while an additional 44 percent of students indicated they spent 2–3 hours in the program each week.

Rosenthal integrates the MyLab course with Blackboard, the Learning Management system used at Owens, to make things easier for both her and her students (learn more about [Blackboard integration](#)).

- Grade transfer: grades are easily transferable from MyLab to Blackboard and there is one single gradebook for the course;
- Single sign-in process: students are ready to work in MyLab on the first day of class; and
- Content linking: ability to link to MyLab directly from Blackboard.

Rosenthal's students now have just one access code and a single sign-in process in lieu of separate log-in and passwords for both Blackboard and MyLab. In the end-of-semester survey, students shared the following:

- 89 percent of respondents agreed that they were able to access MyLab through Blackboard and appreciated not needing a second, separate login for MyLab.
- 100 percent of respondents agreed that the sign-in and registration process for MyLab was simple and fast through Blackboard.

Before students can begin the MyLab homework assignment, Rosenthal assigns the Dynamic Study Modules (DSM). Students must score at least 80 percent on the DSM before they can open the homework assignment. [Dynamic Study Modules](#) are questions that continuously assess student performance and activity, using data and analytics to provide personalized feedback in real-time to reinforce concepts that target the individual student's strengths and weaknesses. The Dynamic Study Modules give Rosenthal's students additional practice in the content areas where they struggle the most. As a student stated on the end-of-semester survey, "The [DSM] have basic definitions, formulas, everything I needed for the chapter." The DSM are mastery-based and required, so students generally complete them all. For additional information on how to assign Dynamic Study Modules and use the reporting feature, see Module 7 of the [MyLab Implementation Guide](#).

Students participating in the end-of-semester survey shared the following:

- 100 percent of respondents agreed that the test-review-retest pattern of the DSM helped them to learn and remember chapter concepts.
- 78 percent of respondents agreed that 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 chapter content they needed to focus on.

Additionally, the following comments about the Dynamic Study Modules were included on the Fall survey:

- *"They [Dynamic Study Modules] helped me understand some of the problems more than what I would have with just the homework."*
- *"They were a good chapter review before starting the homework."*
- *"I learned to focus and retain information on the key points of each chapter."*

Students are assigned end-of-chapter homework problems in MyLab; approximately one textbook chapter is covered each week with a companion homework assignment for each chapter. Rosenthal creates a weekly assignment that consists of short exercises and longer, multi-step problems. Students are allowed to use the 'Check Your Work' option three times, but are only given one attempt at submission. All learning aids are turned on. Learning aids provide tutorial help at the point-of-use; 89 percent of respondents on the end-of-semester survey said they 'always' or 'usually'

use the learning aids when unable to start or complete a homework problem. Late homework does not receive any credit.

Course assessments are administered through MyLab. Quizzes consist of ten, multiple-choice and true-false questions; students have 30 minutes and one attempt at completion. Quizzes are due the same day as MyLab homework. Exams are comprised of 4–5 multi-part problems. Students have one attempt and 90–120 minutes for completion, depending on exam coverage. Once the exam is opened, it must be completed in one sitting. Exam problems are similar to homework questions in both format and difficulty; Rosenthal occasionally uses algorithmic versions of homework problems on exams.

Lecture is a mix of introducing new material, problem solving, and review of previously covered topics. The first of two weekly lectures is generally spent on problem solving and reviewing homework. Rosenthal uses [item analysis](#) in the MyLab gradebook to identify areas where students are struggling with homework assignments. This directs her review of previously covered material, enabling her to spend additional time on more challenging topics and problems. Rosenthal generally spends the second weekly meeting introducing new concepts and theories through lecture, working through examples as needed. Students also work on problems in small groups for peer-to-peer support and learning.

Assessments

- 46% Exams (five)
- 25% MyLab homework assignments (11)
- 10% MyLab quizzes (11)
- 10% Dynamic Study Modules (11)
- 9% Attendance

Results and Data

Figures 1 and 2 are correlation graphs. 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 the average Dynamic Study Module scores and average MyLab homework scores where $r=.78$ and $p<.05$.
- A very strong positive correlation exists between the average MyLab homework scores and average MyLab quiz scores where $r=.89$ and $p<.05$.

For students, the formative MyLab Accounting homework is intended to help them identify where they are in terms of successfully completing the summative exams; it appears that performance on these assignments could be a leading indicator of course success (additional research is needed to develop and test this concept further). Rosenthal concurs, stating that the practice the MyLab homework provides is necessary for students to be successful in the course.

Correlation between Dynamic Study Module scores and MyLab homework scores

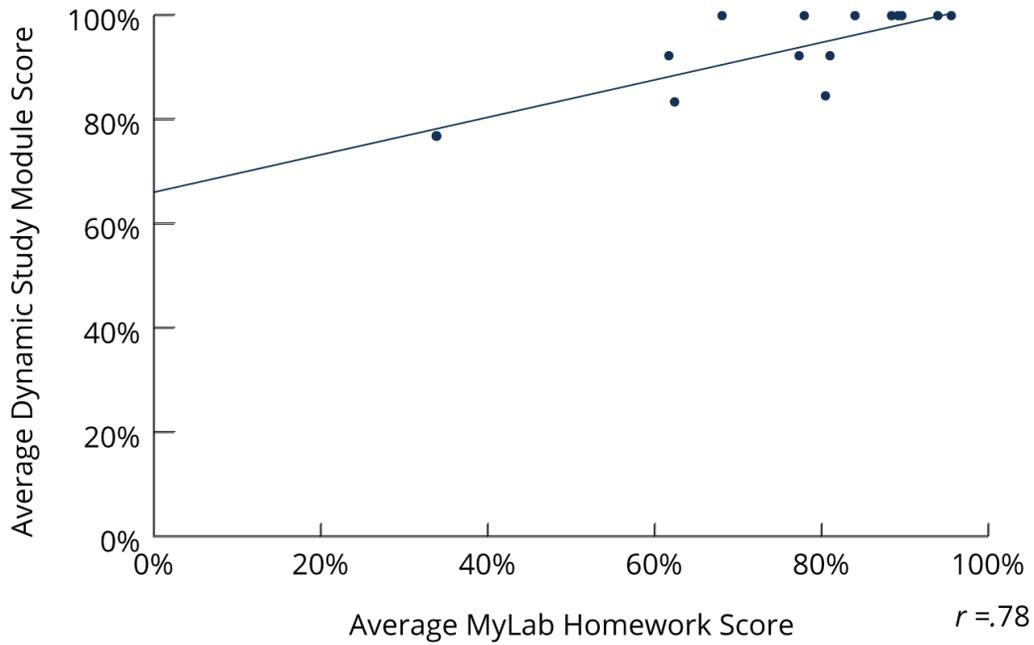


Figure 1. Correlation between Average MyLab Homework Score and Dynamic Study Module Score, Fall 2016 (n=14)

Correlation between MyLab homework and quiz scores

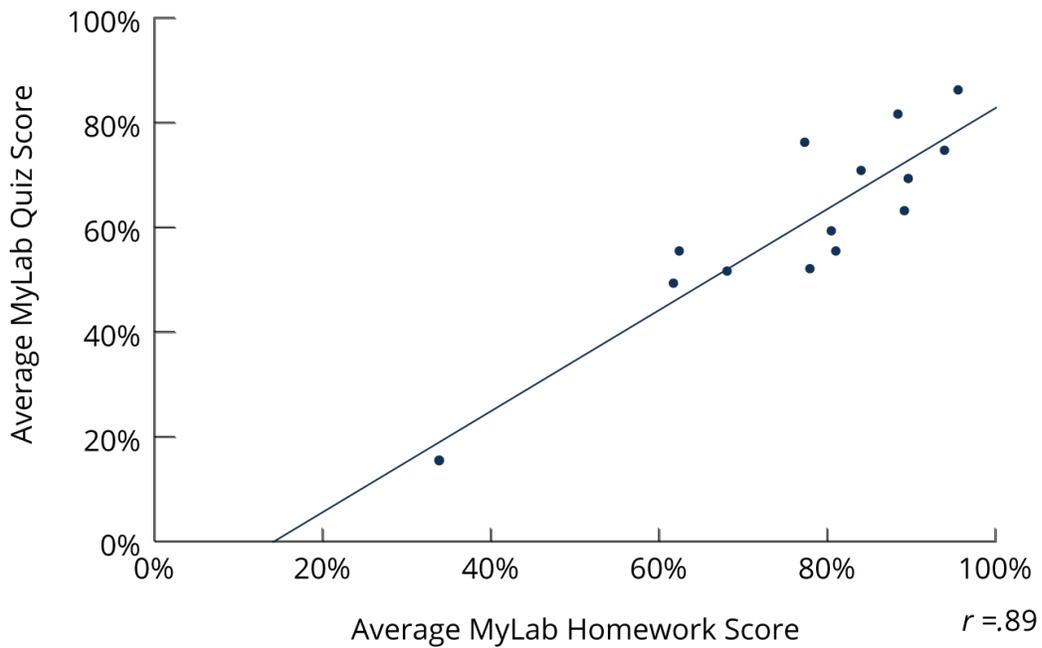


Figure 2. Correlation between Average MyLab Homework Score and Average MyLab Quiz Score, Fall 2016 (n=14)

In figure 3, students were divided into two groups based on the number of DSM assignments they completed. Students who completed all DSM assignments earned higher MyLab quiz and exam scores than students who skipped at least one DSM assignment.

- Students who completed all DSM assignments earned average quiz scores 17 percentage points higher than students who did not complete all assignments.
- Students who completed all DSM assignments earned average exam scores nine percentage points higher than students who did not complete all assignments.

Relationship between Dynamic Study Module completion and quiz and exam scores

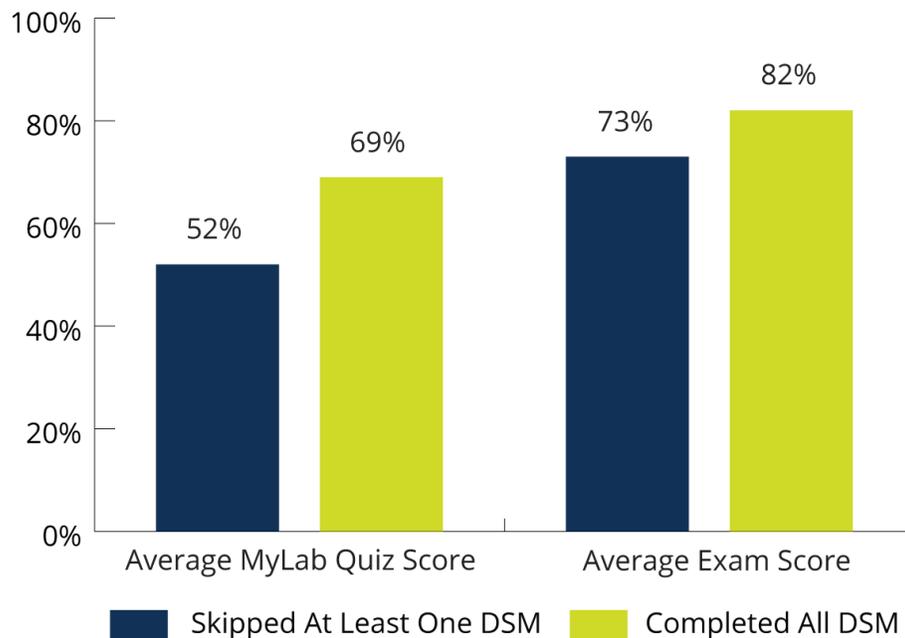


Figure 3. Relationship between Dynamic Study Module Completion and Average Quiz and Exam Scores, Fall 2016 (n=14)

The Student Experience

Responses from the Fall 2016 end-of-semester, voluntary survey of Rosenthal's students indicate that the majority of responding students recognize the value of MyLab Accounting.

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

Student survey responses to the question, “What did you like most about MyLab?” include:

- *“I liked the fact that the textbook was in MyLab, it was convenient not having to carry a large book around!”*
- *“I liked that there were many options to help me learn the material, especially toward the end when I was very unfamiliar with the material because it was more advanced...It helped me get a better grasp on things, especially since I am a visual learner.”*
- *“I liked the fact that you got your homework, test, and quiz scores back immediately.”*

Conclusion

Rosenthal incorporated the Dynamic Study Modules into her MyLab assignments as a pre-requisite assignment for the MyLab homework problems. Because the DSM focus on concepts and theory, constantly reaffirming that the material is clear and understood, she hoped this new assignment would help her students review what they read in the textbook and prepare for MyLab quizzes. Her students confirmed this on the end-of-semester survey—100 percent of respondents agreed that the test-review-retest pattern of the DSM helped them to learn and remember chapter concepts. Additionally, data show that students who completed all DSM assignments earned substantially higher average quiz and exam scores than students who did not. Rosenthal is currently planning to continue use of the DSM in future semesters.