

# MyLab Accounting educator study explores Dynamic Study Module scores and exam scores at Salt Lake Community College

<p><b>School name</b> Salt Lake Community College, Salt Lake City, UT</p> <p><b>Course name</b> Managerial Accounting</p> <p><b>Course format</b> Face to face and online</p> <p><b>Course materials</b> MyLab Accounting with <i>Managerial Accounting</i> by Braun and Tietz</p>	<p><b>Timeframe</b> Spring 2016</p> <p><b>Educator</b> Paige Paulsen, CPA, Associate Professor</p> <p><b>Results reported by</b> Candace Cooney, Pearson Customer Outcomes Analytics Manager</p>
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## Key Findings

- Data indicate a very strong, positive correlation between MyLab homework scores and Dynamic Study Module scores.
- Students earning higher MyLab homework scores and Dynamic Study Module scores also earned substantially higher average exam scores.
- With MyLab's rich array of resources, students reported they were able to study using techniques best suited for them, and Paulsen was able to alter her lectures, focusing on problem-solving instead of lecturing on basic chapter content.

## Setting

- Locale: large, urban, public, two-year university
- Enrollment: 61,000 students on ten campuses
- Student-faculty ratio: 20:1
- Average class size: 20 students
- Transfer rate: 73 percent to a four-year institution
- First-time freshmen: 13 percent
- Gender: 50 percent male/female
- Average age: 26
- Diversity: 21 percent minority

## About the Course

Professor Paige Paulsen has been teaching for approximately 26 years, including 19 years at Salt Lake Community College, where she has been teaching Managerial Accounting her entire tenure. Managerial Accounting is a one-semester, three-credit course enrolling approximately 600 School of Business students per year. The course is a study of developing and using accounting information essential for management decisions. Topics covered include job costing, activity-based costing, inventory management, operating budgets, and capital investment decisions. General course learning outcomes include:

- acquiring substantive knowledge of managerial accounting;
- developing quantitative literacy;
- developing the knowledge and skills to be civically engaged; and
- thinking critically and communicating effectively while working professionally with others.

## Challenges and Goals

Paulsen acknowledges that practice through homework is an important part of learning accounting, but hand grading of homework assignments was taking instructors a long time to complete and return to students. To resolve this issue, Paulsen and her colleagues sought a digital homework management system that would complete grading in a just-in-time environment. This would give instructors time back from hand grading, but more importantly, it would provide students with immediate feedback, something lacking from their current grading system. Additionally, the department was asked to create online courses to offer multiple format options to their community college student audience who desire flexibility in scheduling. Seeking one digital program to cover all their needs, Paulsen and her department adopted MyLab™ Accounting in 2008 and have modified their use of the program over time. In Fall 2015, Paulsen added the Dynamic Study Modules to her MyLab regimen.

## Implementation

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 testing. Paulsen's goals for assigning work in MyLab are to teach new concepts, provide homework and practice opportunities, help students assess their own understanding of the course material and track their progress, and identify at-risk students. As the course instructor, Paulsen's role is to assign content, homework, and assessments in MyLab and provide support and remote monitoring to students using the program at home. Class meets twice a week for 100 minutes; most of the lecture is spent clarifying homework problems, but Paulsen will spend time as necessary explaining challenging topics. Use of MyLab for general content understanding and practice has allowed her to modify the lecture from one focused on presentation to one focused on problem solving.

Paulsen anticipates that students will spend at least four hours per week working in MyLab, including time spent reading the eText. Paulsen's students confirmed this on a voluntary, end-of-semester Spring 2016 survey (46 percent response rate)—64 percent of students said they spent more than four hours per week working in MyLab, while the remaining 36 percent of students said they spent 2–4 hours working in the program.

Paulsen's course utilizes various procedures and learning experiences including online lectures, practice exercises, discussion questions, homework assignments, quizzes, and exams. Active participation is essential for student success, as the course follows a "Read It, Watch It, Try It, Practice It, Prove It" approach:

- Students are expected to READ the assigned topics in the textbook.
- Students should WATCH the assigned podcasts which cover the basic concepts outlined in the chapter.
- Students should TRY the short exercises and practice problems assigned.
- Students will PRACTICE the concepts by completing homework assignments.
- Students will PROVE their knowledge by completing chapter Dynamic Study Modules and exams.

Students complete three MyLab assignments per chapter with firm due dates that consist of the following:

- **Media exercises:** video podcasts that take the place of in-class lecture, followed by brief questions for content recognition. Each assignment is worth 8–17 points per chapter and the assignments are due at 9:00 a.m. on the due date.
- **Homework exercises:** practice assignments containing numeric problems covering all chapter learning objectives; students are given two attempts per problem. Learning aids are turned on and in the end-of-semester survey, 91 percent of students reported that they always or usually utilized the learning aids when unable to start or complete a problem. Each assignment is worth 50 points per chapter and assignments are due at 11:59 p.m. on the due date.
- **Dynamic Study Modules (DSM):** questions that continuously assess student performance and activity, using data and analytics to provide personalized feedback that targets the individual student's strengths and weaknesses in real-time. Paulsen assigns DSM as a quiz to give students additional practice in the areas where they struggle the most. Each assignment is worth 25 points per chapter and assignments are due at 11:59 p.m. on the due date.
- **Study plan:** the study plan monitors student performance on homework and exams and continuously makes recommendations based on their performance, providing customized remediation activities to get students back on track. Paulsen makes the study plan optional, but on the end-of-semester survey, 55 percent of students confirmed they used it for practice and to identify chapter content they were struggling with.

MyLab media and homework assignments can be completed after the due date with a ten percent per day penalty. Dynamic Study Modules cannot be turned in late. Also included in the homework section beginning with chapter three are practice questions accompanied by a playable podcast (audio and video) of an instructor at SLCC discussing the concepts and solving the problems. These problems are optional, but Paulsen recommends students complete them as they prepare to answer the DSM questions.

All exams except the final exam are given in MyLab. Exams cover 2–3 chapters and students have just one attempt at completion. Once open in MyLab, the exam must be completed in a two-hour session and cannot be reopened. Late exams must be taken within one week of the scheduled date or the student will receive a 15 percent reduction in score. The final exam is comprehensive and

proctored on campus. Students earning less than 50 percent on the final exam receive an E in the course (scale A–F) regardless of their overall course grade.

## Assessments

- 50% MyLab exams (five)
- 25% MyLab homework assignments
- 20% Final exam
- 5% Wall Street Journal article reviews

## 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  $r$ -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 very strong positive correlation exists between average MyLab homework assignment scores and average Dynamic Study Module scores, where  $r=.88$  and  $p<.05$ .
- A strong positive correlation exists between average MyLab exam scores and the final exam score, where  $r=.54$  and  $p<.05$ .

For students, the formative MyLab homework assignments are 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).

Grade distribution data for students showing mastery of course content by earning an A, B, or C exam average indicate that these students also earned higher MyLab homework scores and higher Dynamic Study Module scores (figure 3).

- Students who earned A, B, or C average exam grades had MyLab homework scores 26 percentage points higher than students who earned D or F exam averages.
- Students who earned A, B, or C average exam grades had Dynamic Study Module scores 18 percentage points higher than students who earned D or F exam averages.
- Students earning an average exam grade of A recorded an average MyLab homework score of 98 percent and an average Dynamic Study Module score of 100 percent.

### Correlation between average MyLab homework score and average Dynamic Study Module score

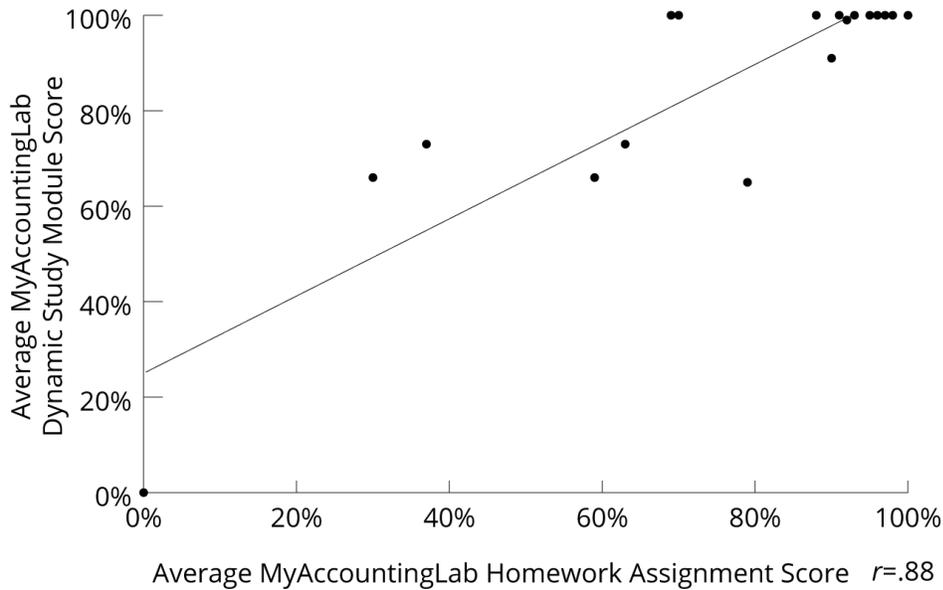


Figure 1. Correlation between Average MyLab Homework Score and Average Dynamic Study Module Score, Spring 2016 ( $n=24$ )

### Correlation between average MyLab exam score and final exam score

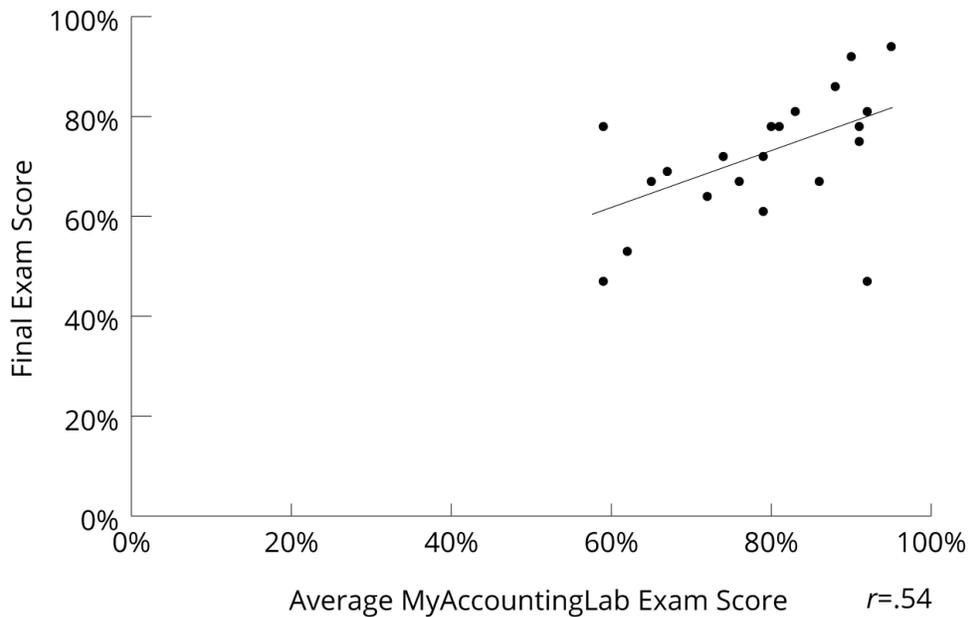


Figure 2. Correlation between Average MyLab Exam Score and Final Exam Score, Spring 2016 ( $n=24$ )

### Relationship between exam letter grade and average MyLab homework score and Dynamic Study Module score

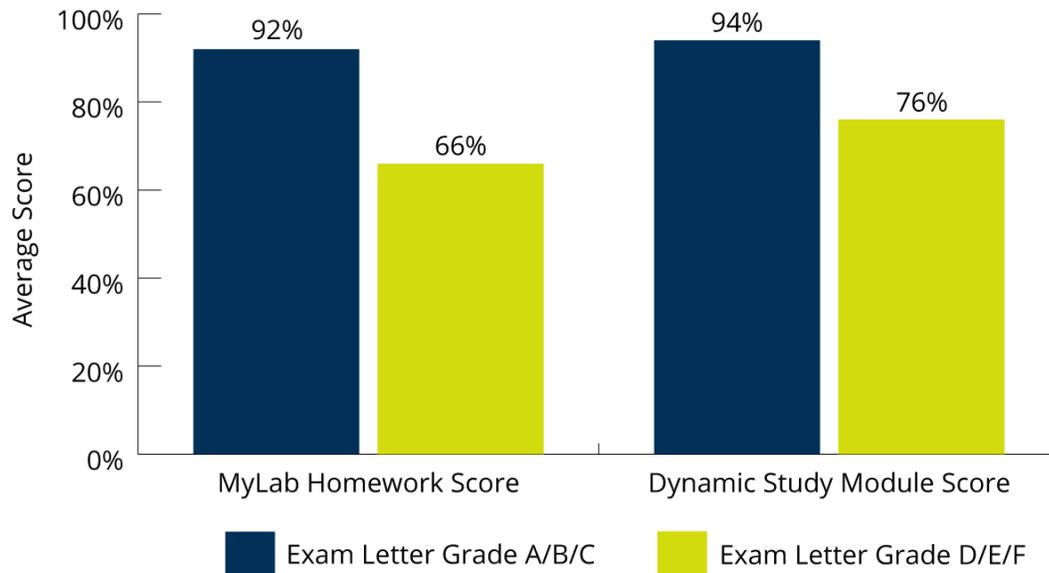


Figure 3. Relationship between Exam Letter Grade and Average MyLab Homework Score and Dynamic Study Module Score, Spring 2016 (n=24)

### The Student Experience

Responses from the Spring 2016 end-of-semester, voluntary survey of Paulson's students (46 percent response rate) indicate that the majority of responding students recognize the value of MyLab Accounting.

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

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

- *"I really liked the Help Me Solve This learning aid and the Study Plan."*
- *"I liked being able to complete problems over and over again in the Study Plan until I was able to fully understand the content."*
- *"I liked that I could check my answers twice before submitting my answer for credit. It allows for mistakes and correction of mistakes. That is a major catalyst for learning in my mind!"*

## Conclusion

Although Paulsen adopted MyLab Accounting for its grading functionality and the just-in-time nature of its feedback and scoring, she also found that she was able to change the content and pace of her lectures now that students were picking up the basics through the variety of MyLab assignments they completed. Lecture became an opportunity for students to practice the more challenging content, with their instructor guiding them through the problem-solving process. Following a MyLab best practice, Paulsen's MyLab homework assignments consist of multiple problem types: short exercises, video exercises, multi-step problems, as well as adaptive learning style Dynamic Study Modules. By offering students options for visual, verbal, aural, and logical learning styles, her students are able to study using techniques best suited for them, particularly students taking the course online. MyLab successfully enabled Paulsen to employ a single digital program giving all her students a similar experience, regardless of their course format.