

MyLab Accounting educator study explores the use of MyLab assignments to identify at-risk students at Carroll Community College

<p>School Name Carroll Community College, Westminster, MD</p> <p>Course name Financial Accounting</p> <p>Course format Flipped, lecture, and online</p> <p>Course materials MyLab Accounting for Horngren's <i>Financial and Managerial Accounting</i> by Nobles, Mattison, and Matsumura</p>	<p>Timeframe Fall 2015</p> <p>Submitted by Kate Demarest, Professor</p> <p>Results reported by Candace Cooney, Customer Outcomes Analytics Manager</p>
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Key Findings

- Data for this course show a strong positive correlation between average exam grades and both average Dynamic Study Module scores and total average MyLab scores.
- Data indicate that students who completed all Dynamic Study Module assignments had average exam scores four percentage points higher than students who skipped at least one Dynamic Study Module assignment.
- The use of Email by Criteria in MyLab enabled the instructor to provide critical intervention feedback to every student in her course about their progress in a personalized manner.

Setting

- Locale: two-year, rural, public institution 30 miles northwest of Baltimore, MD
- Enrollment: approximately 12,000 students
- For credit students: 30 percent
- First time, full-time rate: 39 percent
- Full-time retention rate: 70 percent
- Graduation rate: 26 percent
- Student/Faculty ratio: 15:1
- Average classroom size: 19 students
- Age: 29 percent over age of 24
- Race/Ethnicity: 11 percent minority

About the Course

Professor Kate Demarest has been at Carroll Community College since 1989 and teaching Financial Accounting for 17 years. Financial Accounting is a three-credit course, which is the first semester of a two-semester sequence, enrolling approximately 250 students each year. The course is an intensive study of the development of the accounting cycle, preparation of financial statements, and accounting for sole proprietorships. Additionally, the course emphasizes generally accepted accounting principles and their application in understanding inventory costing methods, internal control, accounts receivable, depreciation, liabilities, and stockholders' equity. Course learning objectives include:

- applying generally accepted accounting principles;
- defining and applying fundamental principles of internal control;
- demonstrating quantitative literacy by using accounting models to define, represent, and solve mathematical equations; and
- using critical thinking to analyze financial statements.

Challenges and Goals

Noting a high withdrawal and failure rate in their Principles of Accounting course, Demarest and her colleagues determined that homework completion was a critical formative assessment missing from their students' course preparation. Homework was assigned, but not graded; because of this, many students were simply not completing the assignments. Speculating that the lack of required and graded homework was leading to the high failure rate, they sought an online digital course companion that would require students to practice problems and complete homework, while giving students immediate feedback in the form of automatic grading. In 2008, Demarest adopted MyLab to address their issue of retention.

Implementation

Demarest's use of MyLab is required; the program is primarily used at home on a personal computer. Students use the program for reviewing new concepts and content understanding, homework assignments, practice, and exam preparation. Demarest's goals for assigning homework in MyLab are to get students reading the textbook and using the various multimedia assets available to them, for practice with key concepts and terms from the assigned reading, to help students assess their own understanding of the course material as well as to track their progress. As the course instructor, Demarest's role is to reinforce new concepts in lecture that students struggled with on homework assignments, provide students with case studies and real-world applications of the content, and assign content and homework in MyLab.

In her flipped classroom, Demarest follows a standard weekly format. For students to have an effective classroom experience, it is essential that they prepare outside of class:

- Students are expected to read the assigned textbook chapters before coming to class, as well as view the MyLab videos and/or DemoDocs for the material being covered that day in class.
- Students complete a warm-up assignment as an initial practice to demonstrate their general understanding of the chapter, also prior to lecture.
- During the first weekly lecture, difficult concepts are reviewed, and students work in pairs or teams to solve problems.
- Post lecture, students are expected to complete the MyLab homework assignment, including the Dynamic Study Modules, before the next class as indicated on the course calendar.
- The final weekly lecture is spent reviewing challenging course content that students appear to be struggling with; Demarest uses Item Analysis in the MyLab gradebook to identify these more demanding topics. Additionally, group work that includes real-world applications through the use of case studies is added to the final lecture as time permits.

Students are assigned a warm-up assignment each week, associated with the chapter being covered in class; this assignment should take students about 35–40 minutes and is due prior to lecture. Questions are carefully chosen so that a student should be able to answer them all successfully if they have done the pre-reading. Demarest's intention is to get students reading and interacting with the material so they have an understanding of the content before attending lecture.

Homework assignments are due after the initial lecture on the chapter content; they consist of approximately 10 multi-part, numeric response, end-of-chapter problems; students have just one attempt for each problem, but are given three attempts at each part of the problem. All learning aids are turned on. The importance of the learning aids for student comprehension is identified by the student response to a voluntary, end-of-semester fall 2015 survey in Demarest's class (87 percent response rate): 92 percent of students indicated they "always" or "usually" utilized the learning aids to help when they were unable to start or complete a homework problem. One student who took the survey summed up a key learning aid by saying, *"I really like the 'Help Me Solve This' option that came with each problem; they were extremely helpful!"*

Demarest also assigns the Dynamic Study Modules, which 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 her students additional practice in the areas where they struggle the most. As a student stated on the end-of-semester survey, *"I liked the explanations they had with every question you would get wrong [in the Dynamic Study Modules]; it was easy to realize what I needed to study for."*

Additionally, 81 percent of students on the end-of-semester survey said the Dynamic Study Modules helped them learn and remember chapter content. These are mastery-based and required, so students generally complete them all. Homework assignments have firm due dates and no late assignments are accepted. For additional information on how to assign Dynamic Study Modules and use the reporting feature, see Module 7 of the [MyLab Implementation Guide](#).

Demarest expects her students will spend at least 1.5–2 hours per week working in MyLab; some students will spend more time working through practice problems as needed, and others will use the eText, video lectures, or other features in the program as part of their studying and exam preparation. On the end-of-semester survey, every student said they spent at least 1–2 hours working in MyLab each week, with 88 percent of students saying they spent 3 or more hours practicing and completing homework in MyLab.

Three exams and a final exam are given throughout the semester; exams are pencil and paper and are a combination of multiple choice questions and open-ended problems. The multiple choice questions are pulled from the Pearson test bank and Demarest creates the open-ended problems herself, crafted to be similar to questions on the MyLab homework assignments. Make-up exams are given only under special circumstances and if coordinated in advance of exam day.

Student Intervention Strategies

Believing that immediate and impactful intervention will help her retain and encourage students throughout the semester, Demarest follows a Pearson best practice of using the intervention strategies built into MyLab. The key to effective intervention is targeted, timely communication with students, providing important feedback at critical points during the semester. Two key options in MyLab enable Demarest to employ intervention strategies throughout the semester – Email by Criteria and Gradebook Item Analysis.

Email by Criteria

Email by Criteria is an efficient way for Demarest to reach all students in her class, whether she has a section of 20 or a section of 200; it works by allowing her to create groups of students and emailing them as a whole, but with the benefit that each email appears personal and directed to the specific student. The personalized nature of the contact leaves a very favorable impression on students. On the end-of-semester student survey, 96 percent of students said they received emails from Demarest about their progress on MyLab homework assignments and in the course in general, and 100 percent of those students agreed or strongly agreed that they appreciated receiving these emails from Demarest, identifying their course success or need for one-on-one assistance. Students are actually very relationship-oriented and appreciate the personal attention, as identified by this comment, typical of those on Demarest's end of semester student reviews: *"[Demarest] cares about me more than other professors I have had, and noticed how I was doing all semester."*

- The first week of the semester, she sends an email to encourage students who have not yet registered for MyLab to do so immediately or risk falling behind. This is especially important in online sections where she does not have the opportunity to meet with students live.
- Every week thereafter, following MyLab homework assignment due dates, Demarest creates several email messages based on specific homework criteria/scores—one for students exhibiting a high level of performance (earning an A) applauding their success and showing her pride in their work, another for students not performing as expected (earning a D/F) expressing concern and offering suggestions for assistance, and one encouraging those students in the middle, identifying that they are working hard for success, and again offering suggestions to attend office hours or a review class.
- After major assessments, Demarest again creates several emails to reach most of her students quickly. Students earning a B+ might get an email encouraging them because they are so close to an A, while students earning a B- might get an email with suggestions about study habits or strategies to raise their next exam score. Students failing the exam will get an email urging them to make an appointment to see her, to review what might be going wrong.
- At the midpoint of the semester, Demarest reviews overall grades and generally sends positive messages to students doing well, congratulating them on the result of their hard work to date, but also sends a message to the at-risk students, giving them a sense of urgency to pick up the pace or even consider their options about continuing in the course.
- Demarest has also identified Thanksgiving and spring break as times when students begin to lose interest and their enthusiasm for homework and studying begins to wane; she takes this opportunity to again encourage them to stay on top of things with the end of the semester coming quickly.

The following is a sample student response after receiving an email from Demarest expressing her concern over a recent quiz grade, where she offered specific suggestions about how the student can move forward, given that the same material will appear on the upcoming midterm exam:

*"I re-read through the text before taking the quiz. I think sometimes I just get too anxious about the time and I try to rush through. **I appreciate how involved & interactive you are in this class. I've never had an online-professor care so much about my performance, it means a lot to me. Thank you for everything!"***

All of Demarest's emails are intended to support student success or catch a student before they fail. See Module 13 in the [MyLab Implementation Guide](#) for additional ideas and strategies.

Gradebook Item Analysis

Demarest believes that Item Analysis is the single most effective tool in MyLab to determine how each student and/or each section you teach is performing by objective. Item Analysis gives Demarest summary information on how her students performed on specific assignments and specific problems, including information on how many students got a question correct, incorrect, or partially correct, how long it took students to answer the question, and how many may have skipped the question completely.

After each homework assignment due date and time has passed but before the next lecture, Demarest looks at Item Analysis in the gradebook to see where her students struggled on the MyLab

homework assignments and adjusts her upcoming lecture accordingly. The best lecture is one that reviews what students find challenging and allocates more time to these topics. There is little benefit to working through problems in lecture that most students were able to complete on their own in MyLab. Item Analysis helps her identify not just tough topics, but specific types of problems that students are finding difficult. Because Demarest can now focus her lectures on topics the students haven't mastered, she is able to find time for real-world application activities in lecture as well. Group activities and case work foster critical thinking, improve problem solving skills, assist students in developing their social and presentation capabilities, and allow them to apply classroom knowledge to the workplace, all of which are critical employability skills.

Demarest also uses Item Analysis in the gradebook to shape her quizzes and exams; knowing the trouble spots enables her to craft an exam that is challenging but which also identifies content students have mastered. Additional techniques for using Item Analysis can be found in Module 6 of the [MyLab Accounting Implementation Guide](#).

Assessments

- 45% Exams (three)
- 25% Final exam
- 25% MyLab assignments
- 5% Professionalism

Results and Data

Correlation between average Dynamic Study Module grade and average exam grade

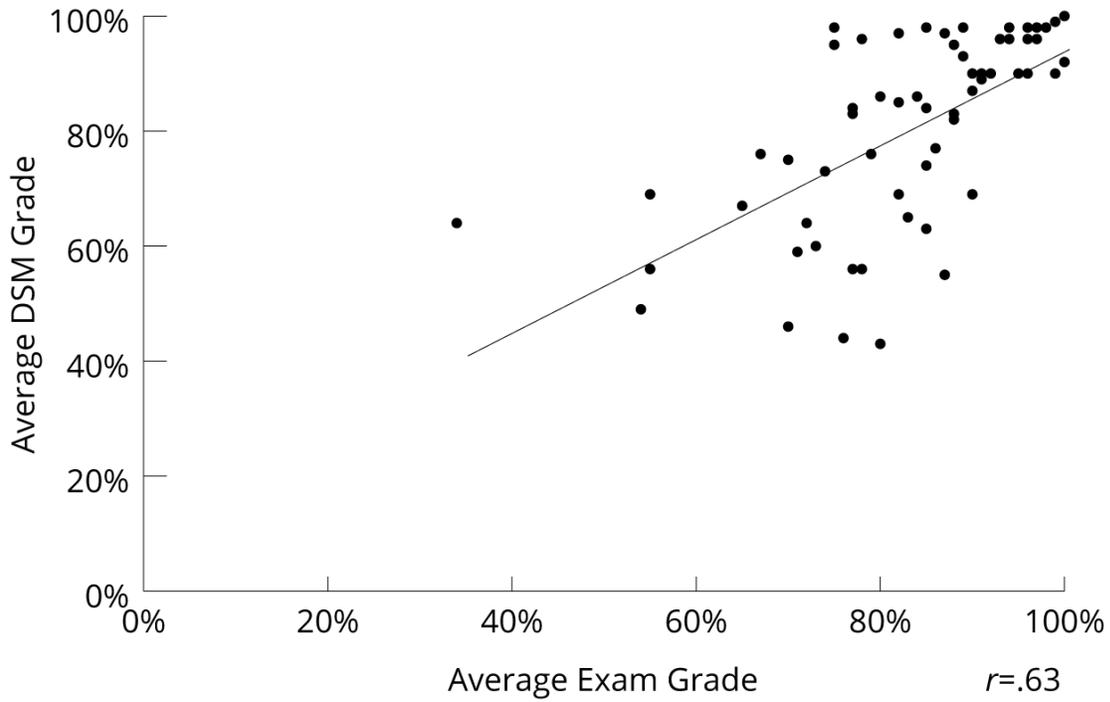


Figure 1. Correlation between Average Dynamic Study Module Grade and Average Exam Grade, Fall 2015 ($n=61$)

Correlation between average MyAccountingLab homework grade and average exam grade

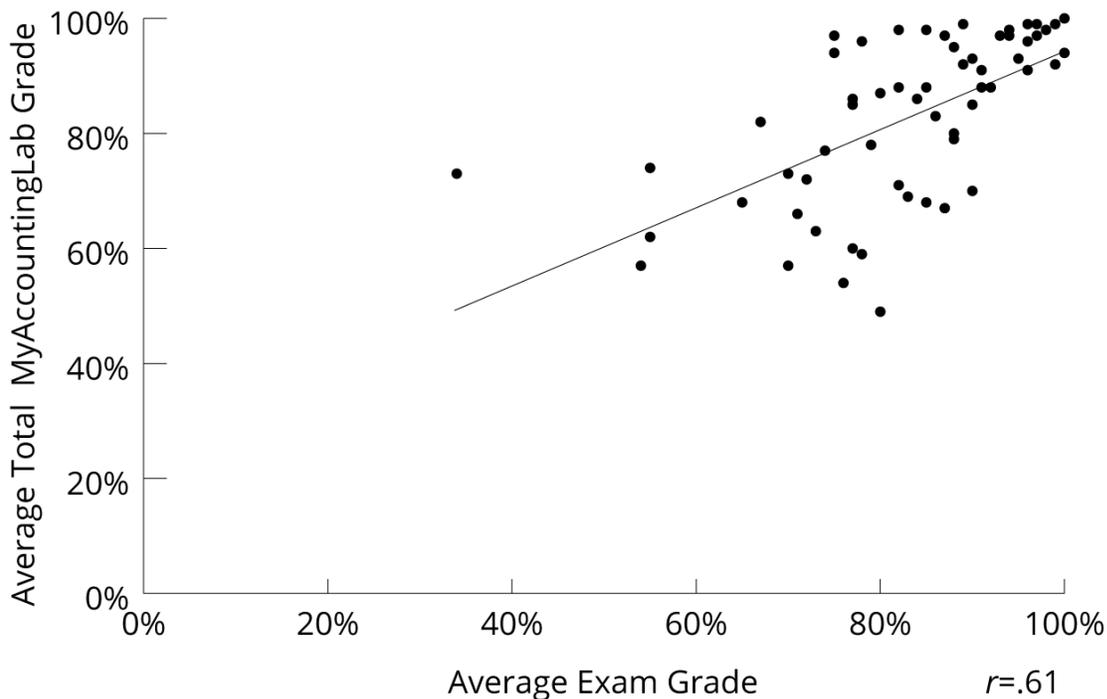


Figure 2. Correlation between Average MyLab Homework Grade and Average Exam Grade, Fall 2015 ($n=61$)

Relationship between Dynamic Study Module completion and average exam scores

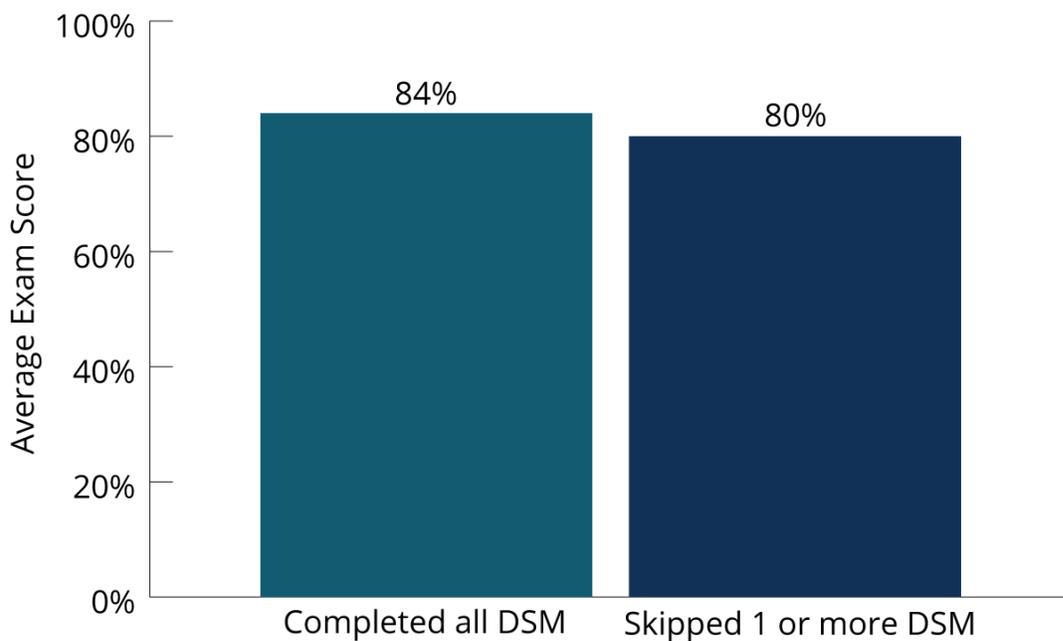


Figure 3. Relationship between Dynamic Study Module Completion and Average Exam Grades, Fall 2015 ($N=61$ total, $n=42$ completed all, $n=19$ skipped 1 or more DSM)

Relationship between Average Dynamic Study Module grade and final course letter grades

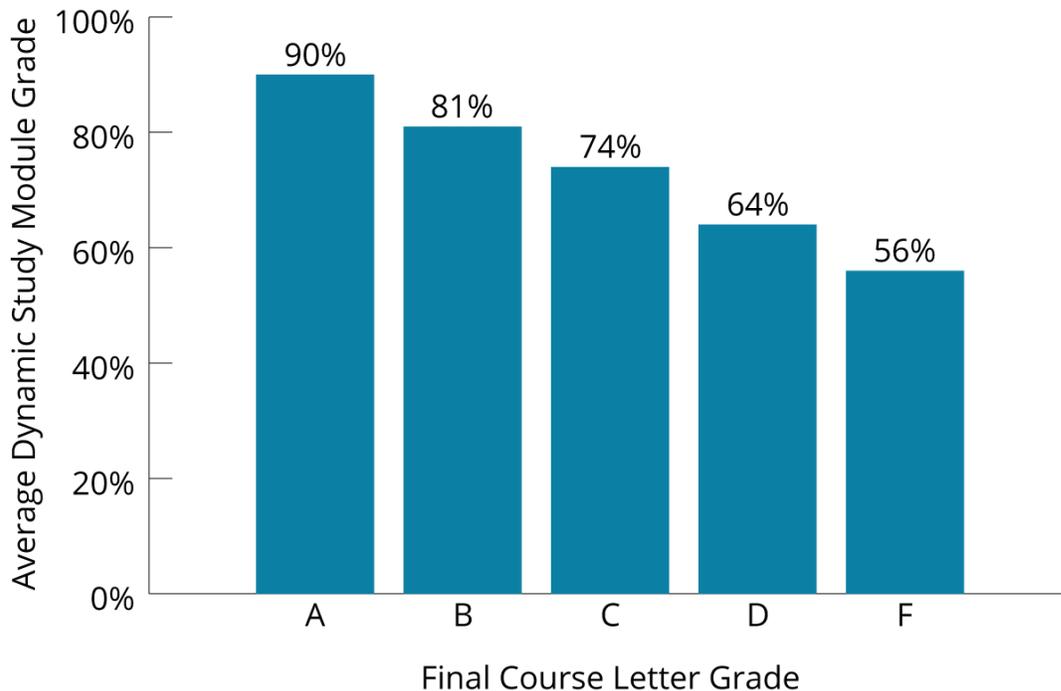


Figure 4. Relationship between Average Dynamic Study Module Score and Final Course Letter Grades, Fall 2015 ($n=61$)

The Student Experience

Responses from a fall 2015 end-of-semester, voluntary survey of Demarest's students (87 percent response rate) indicate that the majority of responding students recognize the value of MyAccountingLab:

- 89 percent of students strongly agree or agree that the use of MyLab positively impacted their quiz and exam scores.
- 92 percent of students strongly agree or agree that MyLab provided additional resources that helped them learn more than they would have from more traditional pencil and paper homework.
- 92 percent of students strongly agree or agree that their understanding of the course material increased as a result of using MyLab.
- 81 percent of students strongly agree or agree that the test-review-retest pattern of the Dynamic Study Modules helped them to learn and remember chapter content.

Student survey responses to the question "What did you like most about the Dynamic Study Modules?" include:

- *"They are the best! All classes need them!"*

- *"The dynamic study modules allowed me to think critically when answering the questions. When completing these modules I was provided feedback as well as the correct answers which provided me with additional content to study for exams."*
- *"I liked the explanations they had with every question you would get wrong, it was easy to realize what I needed to study for."*
- *"Once I found out that "I don't know yet" didn't count against my grade, I was able to click on it to properly learn how to do the problem without stressing out or giving up."*

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

- *"When using the Help Me Solve This feature, I like how it would go into detail to explain things to you better."*
- *"MyLab provided me the opportunity to learn, study, and understand the content that was being taught in class. Having the ability to access the book, questions, explanations, and answers through this online resource became extremely beneficial to me through the course of this semester."*
- *"I liked the study plans the most because it really helped me focus on what was important and it helped me be more successful in my studying."*
- *"The warm-ups helped me to prepare relatively well for class. Homework was a huge help in preparing me for test in class."*

Conclusion

Demarest's use of MyLab intervention strategies have helped her identify both students at risk as well as content that may be creating a challenging environment as students work through their homework problems and practice for exams. She is able to construct more appropriate lectures, more balanced quizzes and exams, and foster an environment in her classroom where every student is important and worthy of recognition from the instructor. Use of MyLab has been a very positive experience for both Demarest and her students; in fact, 92 percent of students on her end-of-semester survey agreed that they would recommend the use of MyLab to another student.