

## MyEconLab

School Name Southern Maine Community College, South Portland, ME  
Course Name Microeconomics  
Course Format Online

**Key Results** Average quiz, exam, and final course grades increased when students were required to use Dynamic Study Modules. In addition, data show strong correlations among MyEconLab course components: homework, Dynamic Study Module assignments, quizzes, and exams. These correlations measure the strength of the relationships among the course assessments.

**Submitted by**  
Alan Lovell, Instructor

**Course materials**  
MyEconLab and *Principles of Microeconomics*, Case, Fair, and Oster

### Setting

Southern Maine Community College, one of seven colleges in the Maine Community College System, is a two-year, public community college whose main campus is located oceanside, close to Portland. The school enrolls nearly 7,500 students, of which 44 percent attend full time. The average student is 27 years of age, 94 percent are from Maine, and 72 percent receive financial aid.

Microeconomics is a one-semester, three-credit course with online sections of approximately 20 students each, taken by all business majors. The course covers the introduction to the analysis of firms and consumers in a market economy. Topics include consumer preferences and consumer behavior, production choices and production costs, industry structure and resource pricing, along with the history of economic thought. Course learning objectives include successfully describing (1) how a market economy works, including the laws of supply and demand; (2) the short- and long- term costs of production and how they impact a firm's output decisions; and (3) various market structures, how markets fail, and the role of government intervention.

### Challenges and Goals

In 2010, Instructor Alan Lovell was faced with creating an online course for Microeconomics from scratch. He had used several online programs in the past and was familiar with the significant

resources publishers could offer. He sought a product that would provide a complete online experience in a ready-to-go format. MyEconLab's mix of interactive text, homework capabilities, and wide range of assessment options made its adoption for his new online courses an easy decision.

### Implementation

In fall 2014, Lovell added Dynamic Study Modules to his course. Dynamic Study Modules use the latest findings in neurobiology, cognitive psychology, and game theory to create personalized learning that is designed to decrease study time and boost knowledge acquisition and retention. Each module begins with a set of questions that a student attempts to answer, even if they have not yet done the required textbook reading. Research has found that asking questions first triggers students' brains to learn faster, while real-time feedback heightens their curiosity and enhances their long-term memory. Lovell was excited to use Dynamic Study Modules, as he realizes that low stakes quizzing (such as the Dynamic Study Modules) may help students retain more of what they learn.<sup>1</sup> Personally, he has observed that while online learning works well for students with well-developed study skills, other students often need something like Dynamic Study Modules to help them develop their own pathway to success.

Lovell offers his students information about the Dynamic Study Modules at the start of the semester, so they understand how and why he requires this component of MyEconLab. Dynamic Study Modules continuously assess the student performance and use analytics to provide personalized content in real-time to reinforce concepts that target each student's strengths and weaknesses. For this reason, students must complete modules before they can access any MyEconLab chapter homework assignments. No points are earned by completion of the Dynamic

<sup>1</sup>[http://www.nytimes.com/2014/07/20/opinion/sunday/how-tests-make-us-smarter.html?smid=pl-share&\\_r=0](http://www.nytimes.com/2014/07/20/opinion/sunday/how-tests-make-us-smarter.html?smid=pl-share&_r=0)

*[Lovell] sought a product that would provide a complete online experience in a ready-to-go format. MyEconLab's mix of interactive text, homework capabilities, and wide range of assessment options made its adoption for his new online courses an easy decision.*

Study Modules, but they are a prerequisite to opening chapter homework assignments.

Lovell encourages his students to adhere to the following while completing course assignments:

- Preview the MyEconLab chapter PowerPoint slides (found in the Chapter Resources tab).
- Attempt the Dynamic Study Modules.
- Read the chapter in the textbook.
- Complete the weekly MyEconLab homework assignment.
- Take the weekly MyEconLab quiz.

MyEconLab homework assignments include 18–20 multiple-choice and graphing problems. All learning aids are turned on, and students have unlimited attempts. Homework is open all week and available until the end of the week for each chapter assignment (the week begins on Sunday and ends on Saturday). Answers from Lovell's end of semester opinion survey indicate that students find the Help Me Solve This learning aid to be particularly beneficial. According to one student, "I liked the Help Me Solve This feature. For an online class with no teacher to ask in person, this was very helpful!"

Students must finish MyEconLab homework before they can open the quiz. Lovell drops each student's lowest three homework scores when calculating final course grades.

To help students prepare for exams, Lovell designs MyEconlab quizzes that are similar in approach to the exams. Quizzes include 5–7 multiple-choice and graphing questions. There is no time limit, but learning aids are turned off and students are allowed two attempts; the highest score is recorded. Quizzes are available all week and close at the end of the week for each chapter assignment. Lovell drops each student's lowest two quiz scores when calculating final course grades.

Students take three exams of 35 multiple-choice and graphing questions each. Exams are open book/open notes, and Lovell encourages students to use all resources. Exams have no time limit and are due at the end of the week they were assigned.

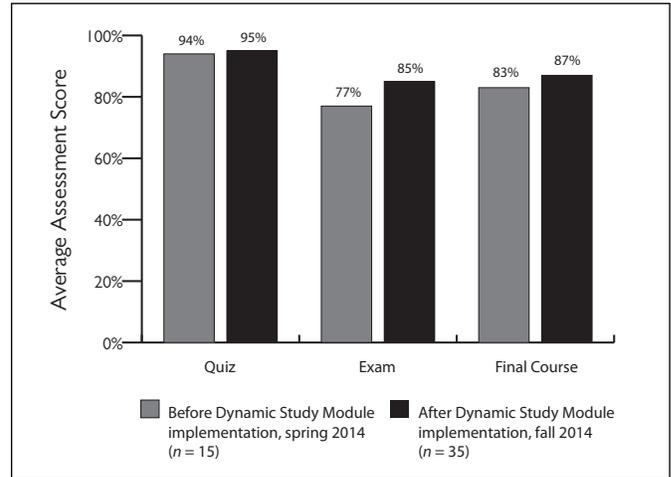


Figure 1. Average Assessment Scores before and after Implementation of Dynamic Study Modules, Spring–Fall 2014 (n = 50)

#### Assessments

- 50 percent Exams (three)
- 25 percent MyEconLab quizzes (20)
- 15 percent MyEconLab homework (20)
- 10 percent Discussion participation

#### Results and Data

After adding Dynamic Study Modules to his course (but keeping all other assignments and assessments the same), Lovell's average quiz, exam, and final course grades improved compared to the previous semester (Figure 1).

**11%** Percentage increase of average exam grades

**5%** Percentage increase of average final course grades

Figures 2–5 (on the following page) are correlations that measure the strength of the relationships among average MyEconLab homework scores, average Dynamic Study Module scores, average MyEconLab quiz scores, and average exam scores. The corresponding *p* value measures the statistical significance/strength of this evidence, with < .01 considered strong evidence.

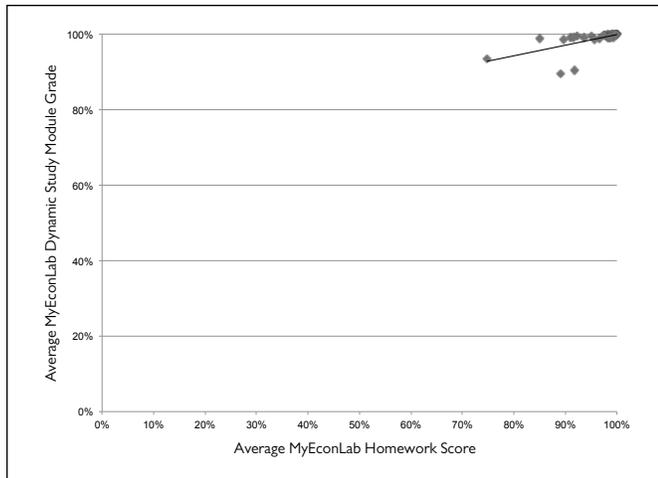


Figure 2. Correlation between Average MyEconLab Homework Scores and Average Dynamic Study Module Scores, Fall 2014 ( $n = 35$ )

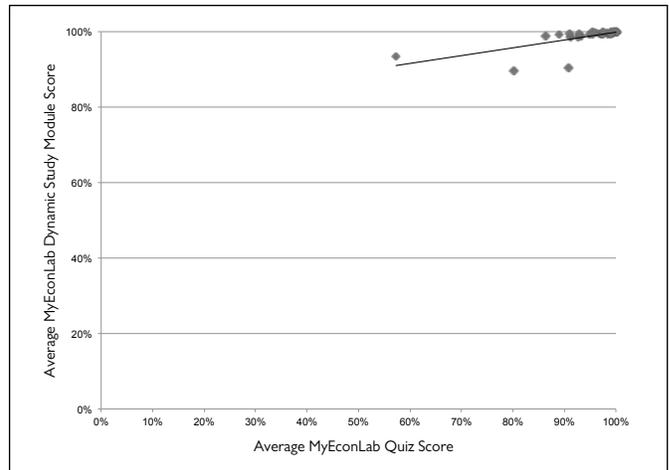


Figure 3. Correlation between Average MyEconLab Quiz Scores and Average Dynamic Study Module Scores, Fall 2014 ( $n = 35$ )

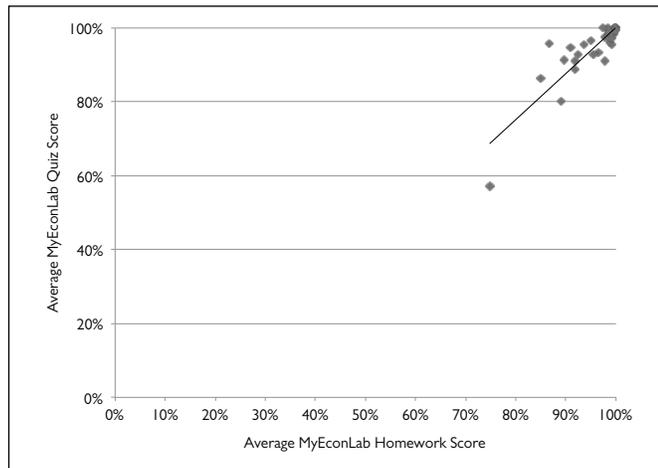


Figure 4. Correlation between Average MyEconLab Homework Scores and Average MyEconLab Quiz Scores, Fall 2014 ( $n = 35$ )

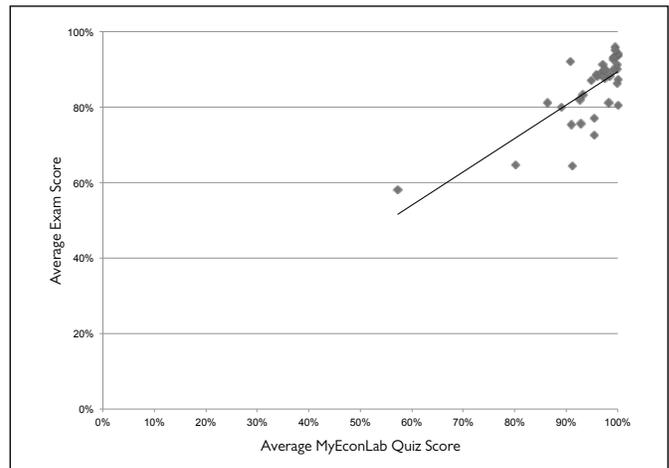


Figure 5. Correlation between Average MyEconLab Quiz Scores and Average Exam Scores, Fall 2014 ( $n = 35$ )

- Average Dynamic Study Module score and average MyEconLab homework score: strong positive correlation where  $r = .61$  and  $p$  value  $< .01$ .
- Average Dynamic Study Module score to average MyEconLab quiz score: strong positive correlation where  $r = .67$  and  $p$  value  $< .01$ .
- Average MyEconlab quiz score to average MyEconLab homework score: very strong positive correlation where  $r = .87$  and  $p$  value  $< .01$ .

- Average MyEconLab quiz score to average exam score: very strong positive correlation where  $r = .76$  and  $p$  value  $< .01$ .

For students, their MyEconLab homework and Dynamic Study Module scores may help them identify where they stand in terms of successfully completing future course assessments. As a best practice, instructors may use the MyEconLab homework and Dynamic Study Module scores to help identify students early on who may need intervention.

*“I owe my success to the Help Me Solve This feature.”*

—Student

## The Student Experience

In fall 2014, students were asked to participate in a voluntary, 13-question, end-of-semester survey. The survey was administered by Lovell and covered use of MyEconLab and its impact on their learning and assessment. Of the 49 percent of students who responded:

- 71%** Agree or strongly agree that their understanding of the course material increased as a result of using MyEconLab.
- 71%** Agree or strongly agree that the use of MyEconLab positively impacted their quiz and exam scores.
- 59%** Agree or strongly agree that the Dynamic Study Modules pattern of test/learn/retest helped them retain information about important course concepts.

On the same survey, when asked what they liked best about MyEconLab, student answers included the following:

*“I owe my success to the Help Me Solve This feature. With pencil and paper, if I can’t figure something out I have to wait until I can discuss things with my professor or a tutor. The Help Me Solve This feature took me step by step through problems so I could fully understand concepts.”*

*“That I could do homework problems until I got them right. Some things were difficult, but having more chances helped me grasp the concepts.”*

*“The study and practice exam questions helped me to get an idea of what to expect on the quizzes and also gave me additional information. Sometimes even when I know the topic well, multiple-choice questions can be tricky and confusing when only one word is different. The practice and study I did really helped to resolve that.”*

## Conclusion

Lovell reports that students like the gaming aspect of Dynamic Study Modules. Compared to traditional, multiple-choice questions, the interactive nature of module questions promotes that students think before they respond. He adds that students are gaining “far more” from the Dynamic Study Modules than they would from simply highlighting their textbooks.

Dynamic Study Modules create an environment in which students test, learn, and retest—a best practice for overall course success, and one that is especially critical in online environments. According to Henry L. Roediger III, professor of psychology at Washington University in St. Louis and author of *Make It Stick: The Science of Successful Learning*, “We need to change the way we think about testing. It shouldn’t be a white-knuckle finale to a semester’s work, but the means by which students progress from the start of a semester to its finish, locking in learning along the way and redirecting their effort to areas of weakness where more work is needed to achieve proficiency.”<sup>1</sup> This is Lovell’s goal in requiring Dynamic Study Modules—and data so far shows that it’s working.

<sup>1</sup>[http://www.nytimes.com/2014/07/20/opinion/sunday/how-tests-make-us-smarter.html?\\_r=0](http://www.nytimes.com/2014/07/20/opinion/sunday/how-tests-make-us-smarter.html?_r=0)

This user-report case study documents implementation practices and evaluates possible relationships between program implementation and student performance. These findings are not meant to imply causality or generalizability beyond this specific instance. Rather, findings from this study demonstrate associations that are potentially useful for further theory testing in future experimental studies. For this case study, a mixed-methods design was applied, and the data collected included qualitative data from interviews, quantitative program usage analytics, and student performance data. An open-ended interview protocol was used to guide data collection.