

MyOMLab

School Name University of Louisville, Louisville, KY
Course Name Operations Management
Course Format Online

Key Results Required MyOMLab homework assignments promotes mastery of course material and increased course success. Data indicate significantly higher quiz and final course grades for those students who earned higher MyOMLab homework scores.

Submitted by
Maresh Gupta, PhD, Professor

Course materials
Operations Management, Heizer and Render

Challenges

The University of Louisville, a member of the Kentucky state university system, serves approximately 21,000 students. Operations Management, a three-credit, foundational course, is primarily taken by business majors and covers operations management concepts and the analytical methods of handling problems in manufacturing and service operations. The central question addressed in the course is how to design and operate a manufacturing or service organizational system.

Operations Management is a challenging course in which even students in a traditional lecture format often struggle. When Maresh Gupta, professor, taught the course online for the first time in fall 2013, he sought a tool that would enable him to manage student homework and assessments in the online environment, while also providing support for student learning outside of normal academic hours.

Implementation

Students must use MyOMLab in order to complete the course. First, they are directed to read the textbook, watch videos of solved problems in MyOMLab, and work in optional MyOMLab Study Plans. They are then allowed three attempts at required homework assignments; the average score of their attempts is recorded. Optional additional work, including supplementary problems similar to those assigned in the homework, is available in the MyOMLab Study Plan for extra credit.

Once their homework assignments are completed and scored, students are allowed one attempt at MyOMLab quizzes. Quizzes comprise 10–15 questions and are timed to take 30–40 minutes each. Both the midterm and final exams are also timed and delivered via MyOMLab.

A final, crucial component of Gupta's online Operations Management course is its discussion board. For each discussion board assignment, students must contribute at least one original post and at least two response posts. This ensures that students cannot "hide" in the online nature of the class and that any problems are quickly identified, responded to, and resolved by Gupta.

Gupta observes that his students' critical-thinking skills are sharpened by reading assignments in *The Goal* and completing experiential exercises, such as The Dice Game (a manual, as well as an Excel-based game) on the discussion board. In addition, these activities introduce students to the theory of constraints as a viable and practical theory in operations management. Gupta has published extensively in this area¹, and the instructions for the game are available upon request.

Assessments

30 percent	MyOMLab quizzes
20 percent	MyOMLab homework assignments
20 percent	Discussion board
15 percent	MyOMLab midterm exam
15 percent	MyOMLab final exam

¹ An Excel-based Dice Game: An integrative learning activity in operations management; Maresh Gupta, Lynn Boyd (2011), *International Journal of Operations & Production Management*, the official journal of the European Operations Management Association, Vol. 31.2011, 6, p. 608–630.

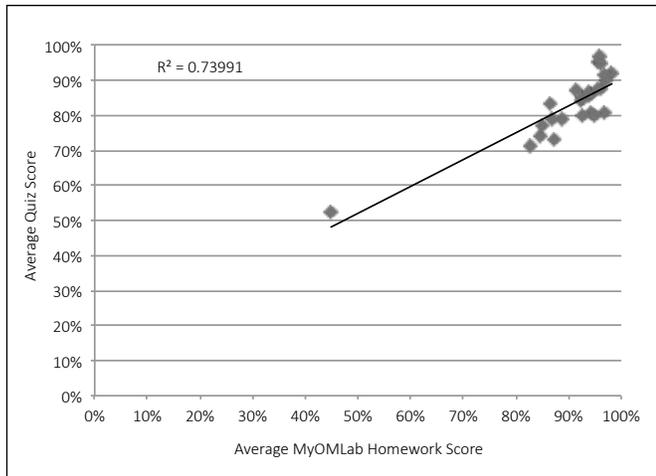


Figure 1. Correlation between Average MyOMLab Quiz Scores and Average MyOMLab Homework Scores, Fall 2013 ($n = 26$)

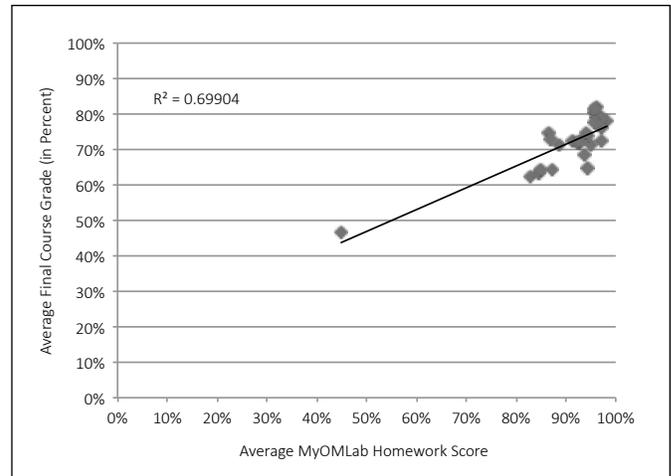


Figure 2. Correlation between Average Final Course Grades and Average MyOMLab Homework Scores, Fall 2013 ($n = 26$)

Final Course Grade	Average MyOMLab Homework Score
A	95%
B	92%
C/D	72%

Table 1. Comparison of Final Course Grades and MyOMLab Homework Scores, Fall 2013 ($n = 26$)

Results and Data

Data indicate that the correlation between MyOMLab homework scores and MyOMLab quiz scores is very strong, positive, and linear: students who earn higher scores on MyOMLab homework assignments also earn higher quiz scores (figure 1). It is confirmed by the correlation value, 0.86^* which is significant at p -value <0.0001 . Furthermore, when a statistical analysis using a simple regression model is performed, MyOMLab homework scores as an independent variable and MyOMLab quiz scores as a dependent variable. The overall model fit is significant: $R^2 = 0.74^*$ (p -value <0.0001). The parameter estimates for MyOMLab homework scores is significant: 0.77^* (p -value <0.0001) with $SD = 0.09$. This shows that MyOMLab homework scores are significant predictors for MyOMLab quiz scores. There is also a very significant, positive relationship between MyOMLab homework scores and final course grades (figure 2).

In addition, MyOMLab homework scores are strong indicators of their final course grades. Students who earned As and Bs in

* significant at 0.05 α -level.

the course scored an average of 93.5 percent on MyOMLab homework assignments; students who earned Cs and Ds in the course scored an average of just 72 percent (table 1).

The Student Experience

MyOMLab offers much needed structure and accountability to his online students—they are responsible for completing their homework in a timely manner, which ultimately sets them up for success on subsequent quizzes and exams. They appreciate the student-centered learning provided by MyOMLab's Help Me Solve This option and other interactive learning features, such as videos and immediate feedback. They appear to see the value in required, weekly assignments and the structure that MyOMLab brings to their studying and learning.

Conclusion

Gupta reports that MyOMLab is an invaluable aspect of his online class and that he wouldn't teach without it. The combination of the program's algorithmic problems, plus students' ability to repeat and review problems as needed for quiz and exam review enable students to practice as much as they need to, remediate, and master course content.

Plans for the future include making minor modifications to the course, such as eliminating the extra credit points and implementing a new strategy to encourage students to do additional homework problems. While MyOMLab quizzes will still count for 30 percent of the final course grade, for students who complete the Study Plan while doing homework assignments, the quizzes will drop to 20 percent and the Study Plan will account for the additional 10 percent. Gupta will continue tracking results and looks forward to sharing more data in the future.