

MyLab IT educator study examines homework and test scores at Lorain County Community College

Key Findings

- Students who scored 90% or greater on MyLab IT homework had lab test scores 12–17 percentage points higher than students who scored less than 90% on MyLab IT homework.
- 100% of respondents agreed that they were able to easily access MyLab IT through Canvas and appreciated not having a separate, second login and password for MyLab IT.
- Students who scored 100% on Simulation Trainings had average Grader Project scores 22 percentage points higher than students who scored 90–99%. In fact, 96% of survey respondents agreed that the Simulation Trainings helped them get familiar with and practice skills in Microsoft Office before completing assessment-based Grader Project assignments.

Study Specifics

School name: Lorain County Community College, Elyria, OH

Course: Microcomputer Applications I

Course format: Face to face (lecture + lab)

Course materials: MyLab IT with *Exploring Microsoft Office 2016 Volume 1* by Poatsy et al. and *Visualizing Technology* by Geoghan

Timeframe: Fall 2018

Educator: Michelle Craddock

Results reported by: Sara Kasper, Pearson Results Manager

Setting

- Lorain County Community College (LCCC)'s enrollment has continued to grow rapidly since Fall 1999. Current enrollment exceeds 15,000 students and an additional 3,000 students are taking University Partnership courses to earn bachelor's and master's degrees.
- 72% of students are enrolled in programs that provide them with skills for immediate employment
- 28% of students are enrolled in programs that lead to transfer into bachelor's degree programs
- Average age of degree-seeking students: 26
- Women comprise 62% of the student body

About the Course

Microcomputer Applications I is a survey of computer application packages including Windows, Word, Excel, and PowerPoint. Students learn about hardware concepts, basic computer terminology, email, and the internet. The course is required of most students enrolled at LCCC and is offered in face-to-face and online sections.

Michelle Craddock is an adjunct instructor and has used MyLab™ IT since 2013. In Fall 2018, she taught three out of 29 sections of Microcomputer Applications. MyLab IT is used by most instructors teaching the course.

Challenges and Goals

Students enrolled in Microcomputer Applications I are typically first-year students getting newly accustomed to college life. In Craddock's experience, they often do not spend time reviewing the textbook before class. As a result, Craddock feels she must use lecture time for teaching basic course concepts as well as give her students assignments that can mostly be finished in class. Craddock appreciates the auto-grading of assignments in MyLab IT — students are able to go back and earn a higher score if they choose and do not have to wait for her

to grade their assignments. Craddock's course goals include increasing student attempts on Grader Projects in order to increase overall course success.

Implementation

LMS integration

At LCCC, [MyLab IT is integrated with Canvas](#), the school's Learning Management System. Craddock recalls that in the past, "Too many students would forget their password to login to MyLab. Now they don't have to worry about that anymore." All students are instructed to login to Canvas and choose the course link in order to view the announcements page listing the assignments and due dates. On an end-of-semester student survey, 100% of respondents agreed that they were able to easily access MyLab IT through Canvas and appreciated not having a separate, second login and password for MyLab IT. Said one student, *"It's so much easier so that you won't forget and always able to complete work."*

Course material options

Although Craddock suspects that students prefer the price of the eText + access code compared to the print text, she does ask students to bring their textbook to lecture and calls out important page numbers in order to alert students as to what will be covered on the tests. On the end-of-semester student survey, 74% of respondents reported purchasing a print copy of the text. Of these students, 66% used the print copy exclusively and 33% occasionally used the eText.

Course format

Class meets twice a week for a 50-minute lecture followed by a 50-minute lab. Students physically change classrooms halfway through, from a lecture hall to a thirty-seat computer lab. During lecture, Craddock covers content from the assigned chapters and shows students what they need to know so they can perform the tasks during lab time. Attendance is taken for every lecture and lab session by signing an attendance sheet. Content from the *Visualizing Technology* text is covered during the first two weeks of the semester.

MyLab IT hands-on assignments

Students are assigned hands-on, graded exercises including 2–3 MyLab IT [Simulation Trainings](#) and 1–2 [Grader Projects](#) per chapter. Four chapters in Word, four chapters in Excel, and three chapters in PowerPoint are covered. Students have unlimited attempts on Simulation Trainings and three attempts on Grader Projects. MyLab IT assignments are meant to be worked on during lab but may be finished outside of class. All assignments are due at 11:59 p.m. on a scheduled date. Students must work on the Simulation Trainings first before attempting the Grader Projects; 10% is deducted from their score if they complete the Grader Projects first.

Student survey comments on the Simulation Trainings included:

- *"The things that benefited me the most were the Learning Aids with the simulations."*
- *"It shows you how to do the steps and teaches you. I am a visual learner so watching the videos helped me out."*
- *"It helped me with more hands-on practice."*

Best practice: Several times during the semester, Craddock shows students how to access their [Grader Project Report](#) so they can view feedback that will help them improve their scores on a second or third attempt. She also posts a video that shows the steps if they forget or need a refresher. On the end-of-semester student survey, 90% of respondents agreed that the Grader Project Report helped them understand what steps they did wrong in order to improve their score.

Best practice: Craddock includes step-by-step instructions on how to access the MyLab IT assignments each week. Although initially these were created for an online class she taught, she has found that providing these instructions minimizes confusion and cuts back on student excuses. Additionally, Craddock posts the chapter overview videos and recommends students watch them, especially visual learners.

Written tests

Students are given timed tests with multiple-choice and true/false questions after the sections for Hardware, Windows 10, Internet, Word, Excel, and PowerPoint. Craddock posts a study guide for each test on Canvas and encourages students to work through the end-of-chapter summary, key terms, and multiple-choice questions from the text. The tests are taken online through Canvas and are available for one week. Students are able to take the exams at home or during lab. Although the tests are open-book, the timing is short enough so that students aren't able to easily look up answers. Answers to the tests are not automatically shown, but students can ask the instructor to see their specific test results during lab time.

Lab tests and final exam

Students are also given tests during lab time following the units for Windows 10, Word, Excel, and PowerPoint. To study for the tests, students are encouraged to review the lecture material and homework exercises. These tests are created and hand-graded by Craddock.

Assessments

- 39% Tests
 - 21% Written tests (6)
 - 18% Lab tests (4)
- 61% Homework
 - 23% MyLab IT Grader Projects
 - 21% Homework in Canvas
 - 17% MyLab IT Simulation Trainings

Results and Data

Students' scores on MyLab IT skills-based Simulation Trainings are intended to help them identify potential gaps that exist in their understanding, and these scores may also indicate to students how successful they will be when completing the assessment-based Grader Projects. On the student survey:

- 82% of respondents said they always or often used the available learning aids when unable to complete a step in a Simulation Training.
- 96% of respondents agreed that the Simulation Trainings helped them get familiar with and practice skills in Microsoft Office before completing the Grader Project assignments.

Students were grouped into three categories based on their overall Simulation score: 100%, 90–99%, and <90%. It was found that students who scored 100% on Simulation Trainings had average Grader Project scores 22 percentage points higher than students who scored 90–99% and 46 percentage points higher than students who scored less than 90% (figure 1). The data highlight the importance of successful completion of simulations (no matter how many attempts it may take to achieve 100%) on Grader Project success.

In fact, the correlation between Simulation Trainings and Grader Projects is strong and positive, where $r=0.72$ and p -value $<.001$. This connection does not indicate causation but instead measures the strength of the relationship between these two variables; the closer r -value is to 1.0, the stronger the correlation.

Grader Project average based on Simulation Training score

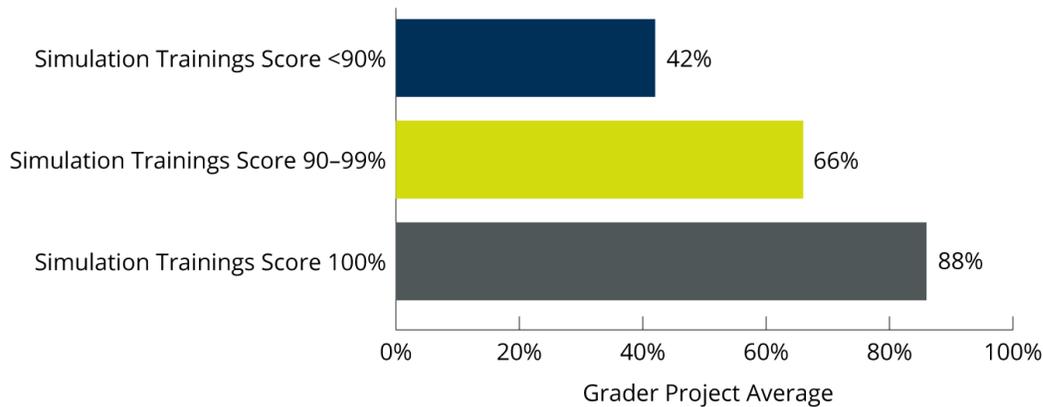


Figure 1. Grader Project Average Based on Simulation Training Score, Fall 2018; Simulations Score <90% (n=10); Simulations Score 90-99% (n=10); Simulations Score 100% (n=26)

To determine the impact of MyLab IT homework on unit lab exams, the average MyLab IT unit homework score for Word, Excel, and PowerPoint was calculated. This score was based on the total points received for Simulation Trainings and Grader Projects (for each unit) out of the total points possible. *Note: three students who had one or more zero scores for a lab tests were removed for the purpose of this analysis.* The average lab test score for each unit was then calculated based on a MyLab IT homework score greater or less than 90%.

- It was found that students who scored 90% or greater on MyLab IT homework had lab test scores 12-17 percentage points higher than students who scored less than 90% on MyLab IT homework, suggesting that student achievement on homework does have an impact on exam success.
- 92% of student survey respondents agreed that the use of MyLab IT positively impacted their exam scores.

Average lab test score based on MyLab IT homework score for Word, Excel, and PowerPoint units

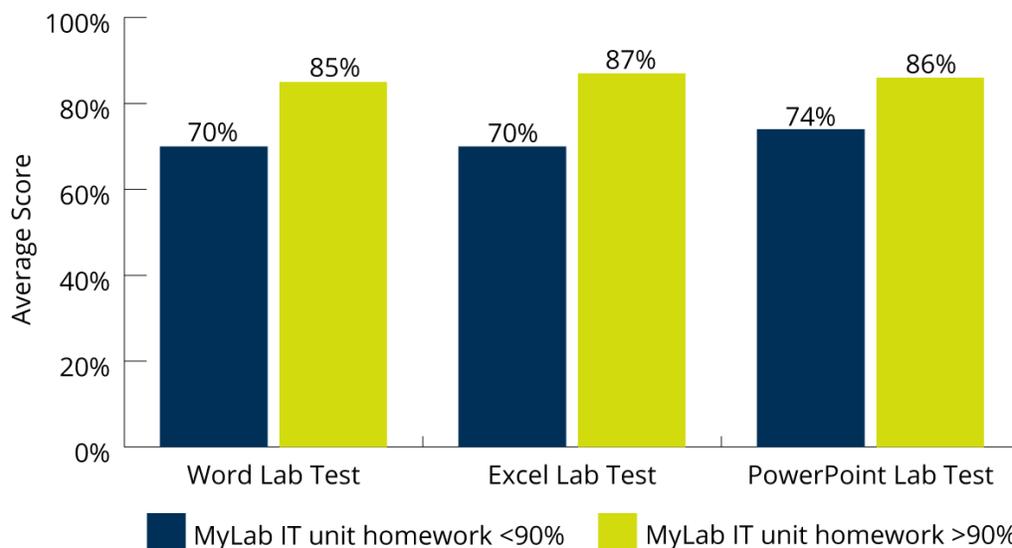


Figure 2. Fall 2018 Average Lab Test Scores Based on MyLab IT Unit Homework Score (N=43); Word Homework <90% (n=19) and Word Homework >90% (n=24); Excel Homework <90% (n=23) and Excel Homework >90% (n=20); PowerPoint Homework <90% (n=19) and PowerPoint Homework >90% (n=24)

The Student Experience

Responses from an end-of-semester survey of Craddock's sections (52% response rate) indicate that the majority of responding students recognize the value of MyLab IT.

- 91% of respondents agreed that their understanding of the course material increased as a result of using MyLab IT.
- 88% of respondents said that MyLab IT was a good value for the course.
- 87% of respondents would recommend MyLab IT to other students.

Open-ended comments to the question, "What are the benefits of MyLab IT?" included:

- *"It gives the opportunity to practice what we're learning, with help if needed, by example, and receiving our grades quickly without just having to see our professor do it on a big screen."*
- *"Provides for a hands on learning experience with Microsoft Office and has thorough guides on how to complete different tasks if you are unsure."*
- *"It allows you to practice with the benefits of instant help or corrections if need be."*

Conclusion

Craddock uses homework within MyLab IT to automate much of the learning and assessment for this applications-based course. Overall, students in her Fall 2018 section responded positively to MyLab IT. Data highlighted the importance of successful completion of simulations on Grader Project success and the overall impact of MyLab IT homework on lab exams. Craddock will continue to encourage students to take advantage of multiple homework attempts available to them in order to maximize success in the course.