MyITLab

School Name	Indiana University, Bloomington, IN
Course Name	Introduction to Computers and Computing
Course Format	Lecture

Key Results Students who complete all or most MyITLab homework assignments earn higher average quiz and final course grades than do students who more routinely skip assignments. Data also show a very strong positive correlation between MyITLab Skill Training and Grader Project scores, where $r = .75$.

Submitted by
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Course materials
MyITLab and *Introduction to Computers* (custom edition), Poatsy, Beekman, Quinn, Pope, and Snyder

Setting

Indiana University Bloomington, the flagship campus of Indiana University's eight campuses statewide, is a four-year public university serving more than 40,000 students in a small-city setting. Seventy-six percent of the school's students are under-graduates, 55 percent are state residents.

Introduction to Computers and Computing is a one-semester, three-credit course enrolling 500 to 800 students each semester. Required of all non-IT majors, the course uses real-world problems to challenge students to become effective problem solvers using Microsoft Excel, Access, and Word, as well as Web programming languages. Students who successfully complete the course will have demonstrated a level of under-standing beyond traditional computer literacy and understand how the fundamental design principles of computers and computing are related to real-world activities.

Challenges and Goals

Charles Pope, senior lecturer and course coordinator, began using MyITLab in 2007. Large enrollments in his class made grading homework prohibitive; he sought a program that could autograde assignments, thereby enabling his lab instructors to spend less time reviewing homework and more time cover-ing the course's most challenging material. In addition to its automated homework and assessment capabilities, Pope chose MyITLab for its ability to help students test themselves, then remediate on those topics where they need the most support.

Implementation

Students are tested in class on both concepts and applications. Concepts are tested via four lecture quizzes, a midterm, and a final exam. Lecture quizzes are low stakes and comprise 10 questions each. The midterm examines chapters 1 and 2 and includes 66 questions. The final exam is comprehensive and covers chapters 0, 1, 2, 3, 6, and 7 and includes 100 questions.

During the application portion of the course, students take an optional pretest to identify knowledge gaps in Microsoft Word, Excel, and Access. Students who score less than 70 percent on the pretest and students who choose not to take the pretest are required to complete MyITLab Skill Trainings in the lab. Trainings take approximately 40 minutes to complete. After completing the Skill Training or scoring higher than 70 percent, students are required to take the posttest.

Students complete two required, 90-minute Grader Projects per module in the lab. They are allowed two submissions and the higher grade is counted. Students also take three 75-minute lab quizzes, each covering several application topics.

For each day that an assignment is turned in late, a student's grade for that assignment is dropped 10 percent off the total points available. Lecture and lab exams may only be made up under exceptional circumstances and with documentation.

Assessments

24 percent	MyITLab Grader Projects
22 percent	MyITLab Skill Trainings
21 percent	Lab quizzes (three)
14 percent	Midterm exam
14 percent	Final exam
5 percent	Lecture quizzes

Students who skipped one or fewer assignments had 35 percent higher average final course grades than students who skipped two or more assignments.
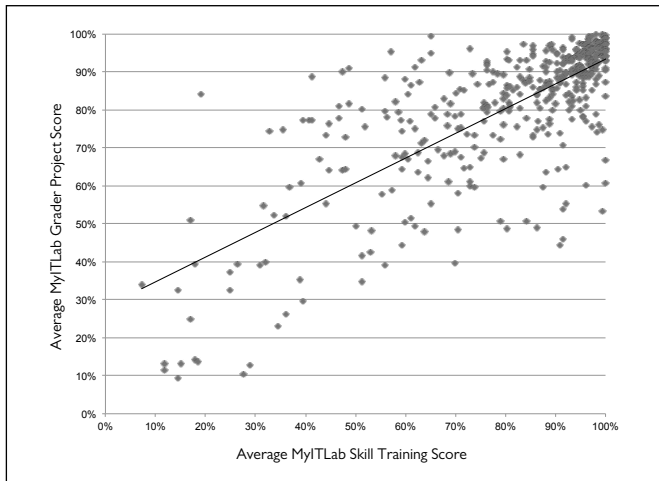

Figure 1. Correlation between Average MyITLab Skill Training Scores and Average MyITLab Grader Project Scores, Fall 2014 ($n = 440$)
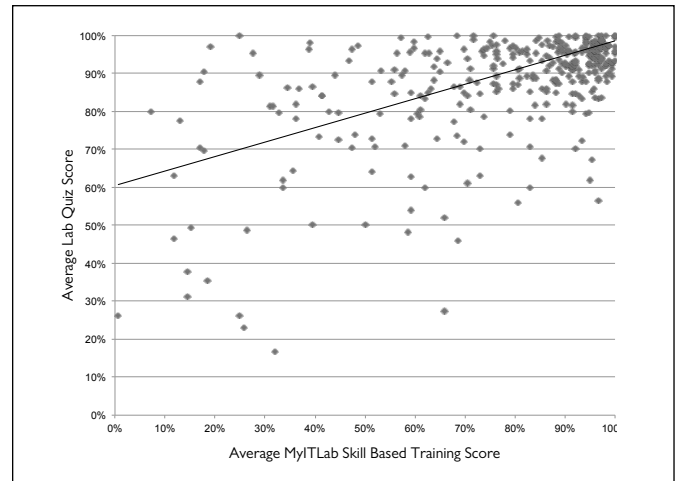

Figure 2. Correlation between Average MyITLab Skill Training Scores and Average Lab Quiz Scores, Fall 2014, ($n = 440$)

Results and Data

Figure 1 shows a very strong positive relationship MyITLab Skill Training scores and MyITLab Grader Project scores for students who received a final course grade and who attempted both Skill Trainings and Grader Projects, where $r = .75$ and p value < .001. MyITLab Skill Training scores help students identify where they stand in terms of preparation for Grader Projects, and help instructors identify early on students who are struggling and at risk of poor course performance. Similarly, Figure 2 shows a strong positive correlation between Skill Trainings and lab quizzes for students who received a final course grade and who attempted Skill Trainings, where $r = .56$ and p value < .001.

Figure 3 shows the course grade distribution per average total MyITLab score: students who earned an A or B for their final course grade also earned a higher overall MyITLab score. Students who spend time in MyITLab working to achieve greater success on homework assignments generally earn both higher quiz scores and final course grades.

- Students who earned a final course grade of A earned an average score of 92 percent on Average Cumulative MyITLab Homework Grade.

- Students who earned a final course grade of D or F earned an average score of 43 percent or less on MyITLab Grader Projects.

In addition, MyITLab homework completion rates were analyzed to determine if a relationship exists between both homework completion and average quiz and final course grades (includes only students who attempted MyITLab Skill Trainings). Results show that students who completed most assignments achieved considerably higher quiz scores and earned higher final course grades (Figure 4).

- Students who skipped one or fewer assignments earned 10 percent higher average quiz grades than students who skipped two or more assignments.

- Students who skipped one or fewer assignments earned 35 percent higher average final course grades than students who skipped two or more assignments.
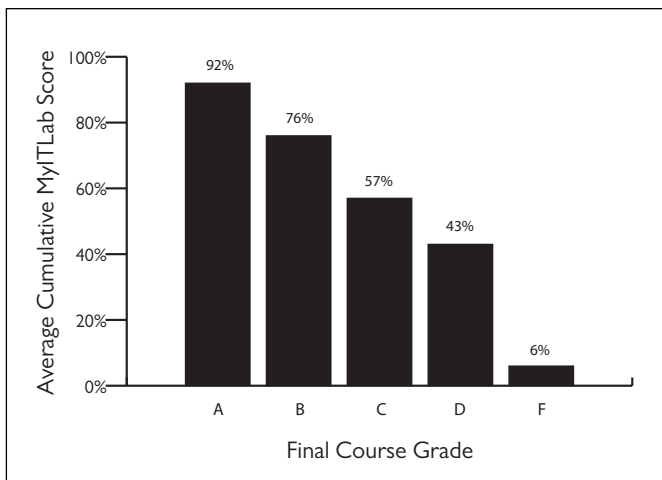
Figure 3. Average Cumulative MyITLab Scores and Final Course Grades, Fall 2014 (*n* = 443)
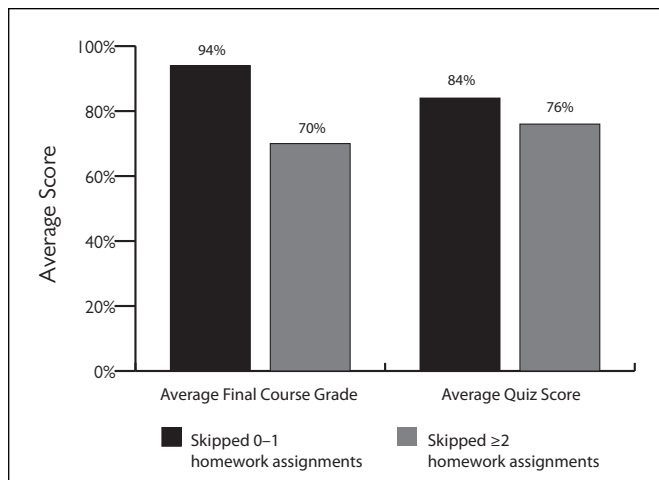

Figure 4. Relationship between MyITLab Homework Completion, Average Quiz Scores, and Final Course Grades (in Percentages), Fall 2014 (*n* = 443)

The Student Experience

Responses from a fall 2014 end-of-semester student survey indicate that the majority of students surveyed recognize the value of MyITLab.

72% Agreed or strongly agreed that use of MyITLab positively impacted their exam scores.

76% Agreed or strongly agreed that their understanding of the course material increased as a result of using MyITLab.

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

"It had helpful training modules that demonstrated the fastest and easiest ways to complete the tasks that were asked of me."

"The different options for learning aids because everyone learns differently."

"It was helpful when I was lost."

"I liked that there were learning aids when I was not sure what to do. It gave me extra help and confidence within the course."

"MyLab helped me understand and become better with Access. I had never used Access before. Now I know the gist of it, which will be useful in the long run."

Conclusion

Pope believes MyITLab's outcome-based Skill Trainings, which include powerful multimedia hints and learning aids, helped his students earn both higher average quiz scores and higher final course grades. Student survey comments, including the following, indicate that students recognize and appreciate the value of these features:

"[I like] the different options for learning aids because everyone learns differently."

"The learning aids helped me a lot. I was able to practice over and over."

Thanks to the adaptive feedback from its pretests, MyITLab promotes a learning environment in which students can both remediate areas of weakness and move quickly through areas of mastery. This kind of support outside of class via MyITLab Skill Trainings and Grader Projects also means that lab instructors are able to cover more content in lab sessions.

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