

MyITLab

School Name	Northern Illinois University, DeKalb, IL
Course Name	Introduction to Business Information Systems
Course Format	Flipped, hybrid, ebook only

Key Results Data indicate that MyITLab homework scores may be an indication of future success on quizzes, final exams, and final course grades. Students who earned higher MyITLab scores had consistently higher letter grades across all course assessments. MyITLab completion rates are also indicative of higher quiz and final exam scores.

Submitted by

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Course materials

MyITLab and *Exploring 2013*, Vol. 1 (eText), Poatsy

Setting

Northern Illinois University is a four-year public university in a college-town setting. The school serves more than 21,000 students from a main campus in DeKalb and satellite centers in Hoffman Estates, Naperville, Rockford, and Oregon, Illinois. The average undergraduate age is 22.6 years, 75 percent attend full time, and 40 percent identify as a minority.

Introduction to Business Information Systems is a one-semester, three-credit course enrolling approximately 1,000 students per year. Required by all students in the School of Business, the course emphasizes technology literacy to enhance business decision making, provide business intelligence, and improve organizational efficiency and effectiveness. The course employs Microsoft desktop applications and a variety of Web applications.

Introduction to Business Information Systems is a Course Transformation Project (CTP), a course redesign intended to promote higher-level learning outcomes via increased student engagement. The course includes interactive exercises designed to help students better learn and understand the material, as well as interactive lectures and experiential activities. To enable increased interaction, a significant amount of class materials are administered via MyITLab, which is designed to make class more enjoyable and effective and to facilitate hands-on learning with less classroom attendance. Students must be present for specific classes to complete experiential activities and participate in lectures; other classes are optional.

Challenges and Goals

In 2010, the College of Business identified a need for a new Information Systems course that would provide their business students with the background in Excel and Access necessary to pursue and complete the courses that comprise their 4 year business curriculum. Many business courses were spending too much time teaching students how to use these common desktop applications and not getting to the more important course content. Being designated as part of the CTP, 30% of the course content had to be available in a media rich online environment so students could complete pre-work before attending lecture. Additionally, lectures were to be more interactive and engaging, and the digital program chosen would need to provide instructors with in-class activities as well. Downing and his colleagues would be working with large sections, being tasked with doing more with less, so the digital resource adopted would be used for grading and testing, too. Ultimately, MyITLab was chosen for its simulated environment and its ability to provide comprehensive application projects that could be used as both homework and assessment.

Implementation

MyITLab assignments

- Skill Based Trainings: Students are allowed unlimited attempts, contributes 10 percent of the MITL grade, due Wednesdays at 12 a.m.
- Grader Project homework: Contributes 10 percent of the MITL grade, due Wednesdays by 12 a.m.
- Skill Based Exams: Contributes 40 percent of the MITL grade, due Thursdays by 12 a.m.
- Grader Project Assessment: Students are allowed two attempts, contributes 40 percent of the MITL grade, due Thursdays by 12 a.m.

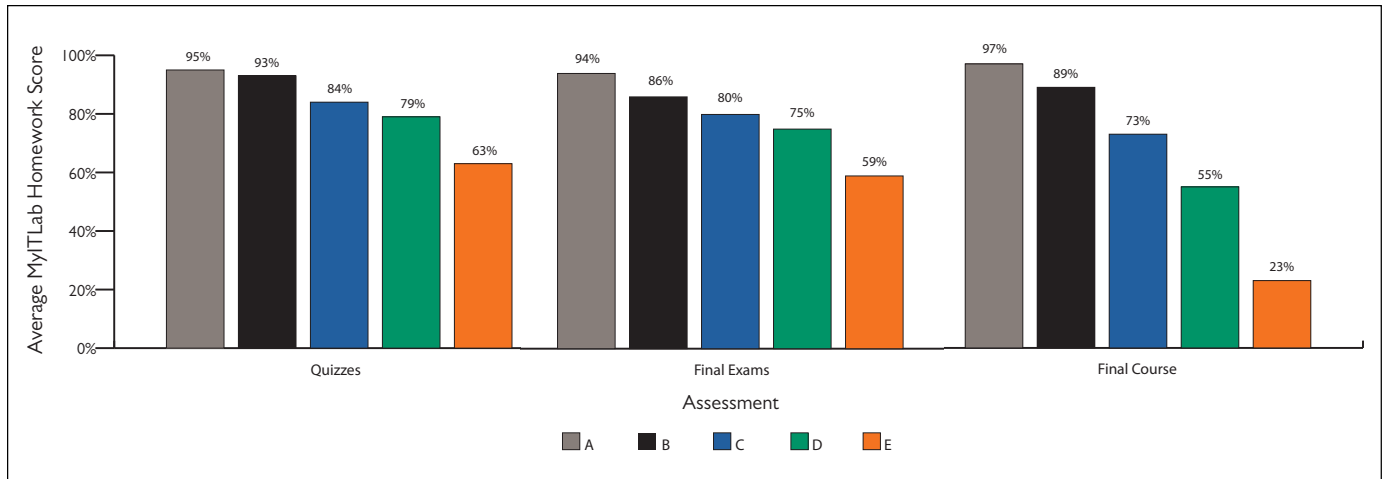


Figure 1. Grade Distribution by Average MyITLab Homework Scores per Average Quiz, Final Exam, and Final Course Grades, Fall 2014 ($N = 288$; quizzes: $A n = 48$, $B n = 135$, $C n = 79$, $D n = 17$, $F n = 38$; final exams: $A n = 19$, $B n = 103$, $C n = 116$, $D n = 41$, $F n = 9$; final course: $A n = 12$, $B n = 49$, $C n = 107$, $D n = 82$, $F n = 9$)

Students may opt not to complete initial Skill Based Trainings and Grader Project homework. If so, their Skill Based Exam and Grader Project assessment scores will count for 50 percent of their MITL assignment grades. Students are encouraged, however, to complete the trainings and the Grader Project homework as the option to skip these assignments is intended for more-advanced students who already know much of the material. In addition, if the Skill Based Exam or Grader Project assessment grade is higher than the corresponding Skill Based Training or Grader Project homework grades, the Skill Based Exam or Grader Project assessment grade will count as 50 percent.

Quizzes

Students complete seven in-class, paper-and-pencil quizzes worth 25 points each. Quizzes are based primarily on MyITLab assignments, but also include content from lecture. Students receive a zero for missed quizzes, there are no make-ups, and the lowest quiz grade is dropped before calculation of the final quiz grade.

Final exam

The final exam is a cumulative, in-class, paper-and-pencil exam; the design is similar to that of the quizzes.

Participation

Despite being a hybrid course—leading to the potential for less in-class time—much of the learning in the course is designed to come from a thoughtful exchange of ideas during class. To promote participation, use of a personal response system was instituted and responding to clicker questions is required. Approximately 10 questions are asked per lecture; students may discuss answers with peers, but their responses must be recorded within 30 seconds. Participation grades are based on

correct responses; the lowest 10 percent of the total scores is dropped. Downing reports that the use of clickers has resulted in students paying closer attention to lecture content and engaging more in class.

Assessments

25 percent	MyITLab exercises and exams
25 percent	Quizzes (seven)
25 percent	Final exam
15 percent	Participation
10 percent	Group process: technology project

Results and Data

A comparison of total average MyITLab homework scores and average quiz, final exam, and final course grades suggests that MyITLab homework scores may be good indications of future assessment grades (Figure 1).

- Students earning an A average on quizzes had total average MyITLab homework scores of 95 percent.
- Students earning a D or F average on quizzes had total average MyITLab homework scores of 74 percent.
- Students earning an A average on the final exam had total average MyITLab homework scores of 94 percent.
- Students earning a D or F average on the final exam had total average MyITLab homework scores of 72 percent.

Figures 2 and 3 (on the following page) are correlations that measure the strength of the relationship between total average

Students who completed more than the average number of skipped assignments had both higher quiz averages and higher final exam grades.

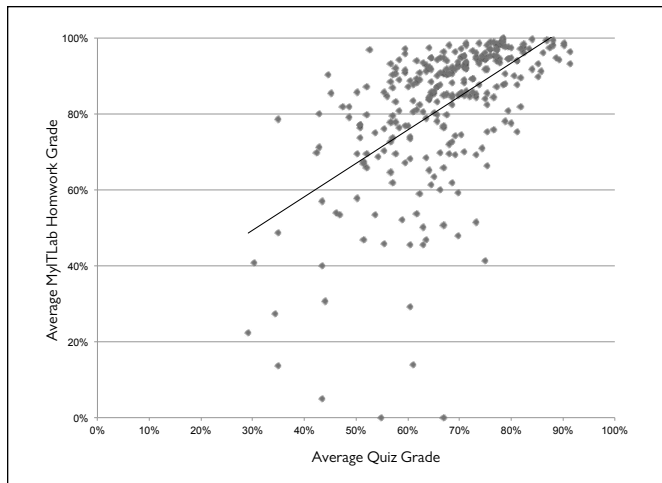


Figure 2. Correlation between the Average MyITLab Homework Grades and Average Quiz Grades, Fall 2014 ($n = 288$)

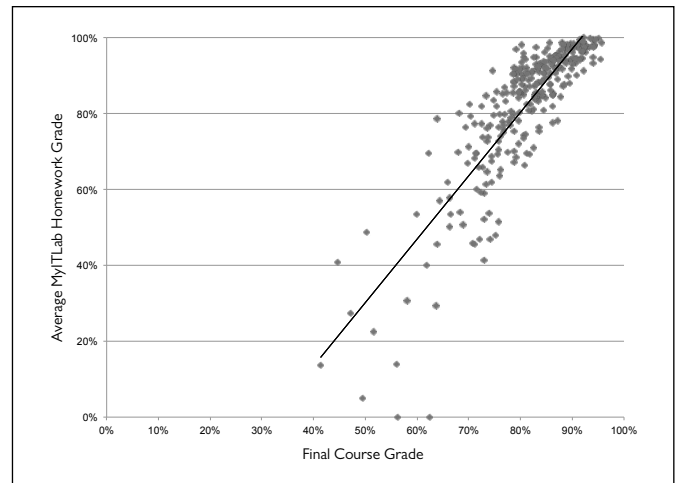


Figure 3. Correlation between the Average MyITLab Homework Grades and Final Course Grades, Fall 2014 ($n = 288$)

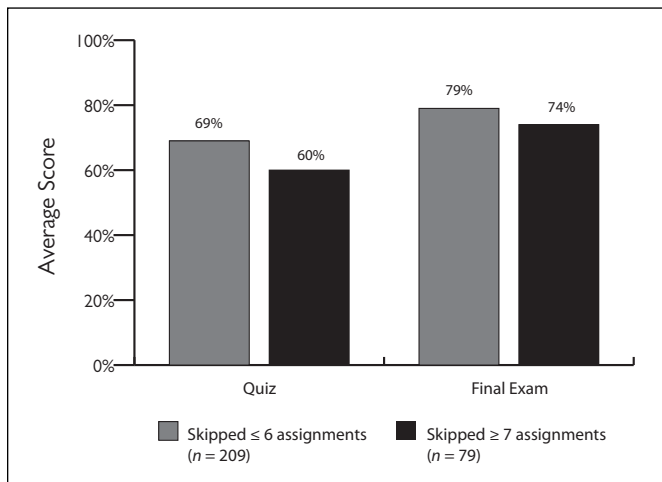


Figure 4. Relationship of Homework Completion Rates to Average Quiz and Final Exam Grades, Fall 2014 ($n = 288$)

MyITLab homework grades to average quiz and final course grades. Correlations do not imply causation but instead measure the strength of a relationship between two variables. The p value measures the statistical significance/strength of this evidence (the correlation); p value $< .01$ is considered strong evidence. A strong positive correlation where $r = .56$, p value $< .01$ exists for MyITLab homework to average quiz grade and a very strong positive correlation where $r = .85$, p value $< .01$ exists for MyITLab homework to final course grade. Instructors may find the MyITLab scores an indication of students in need of additional support or under course stress and in need of intervention.

MyITLab assignment completion was also assessed. Figure 4 shows a positive relationship between the number of completed assignments and a student's average quiz and final exam grades. Students were placed into two groups based on the average number of skipped assignments (seven). Students who completed more than the average number of skipped assignments had both higher quiz averages and higher final exam grades.

- Average number of skipped assignments: 7
- Students who skipped six or fewer assignments had average quiz scores 15 percent higher than students who skipped seven or more assignments.

- Students who completed all assignments had average quiz grades 20 percent higher than students who skipped seven or more assignments.
- Students who completed all assignments had average final exam grades 8 percent higher than students who skipped seven or more assignments.

The Student Experience

In fall 2014, students were asked to participate in a voluntary, 10-question, end-of-semester survey administered by Downing. Survey questions covered students' use of MyITLab and its impact on their learning and assessment. Of the 87 percent of students who responded:

- 88%** Indicate that they always or usually used the available learning aids in MyITLab when unable to start or complete a homework assignment.
- 79%** Agree or strongly agree that MyITLab provided additional resources that helped them learn more than they would have from traditional paper and pencil homework.
- 76%** Agree or strongly agree that their understanding of the course material increased as a result of using MyITLab.
- 61%** Agree or strongly agree that they would recommend MyITLab for other courses for which it is available.
- 50%** Agree or strongly agree that the use of MyITLab positively impacted their quiz and exam scores.

[T]he interactive nature of MyITLab was a contributing factor in helping the university to redesign the course and to achieve its goals of increased student engagement, improved learning outcomes, and greater interaction and collaboration during in-class sessions.

Conclusion

In his flipped, hybrid course environment, Downing reports that MyITLab is a critical component of the course implementation. "I wouldn't teach this course without MyITLab," he says. While homework and repetitive practice is the key to learning Microsoft applications, the interactive nature of MyITLab was a contributing factor in helping the university to redesign the course and to achieve its goals of increased student engagement, improved learning outcomes, and greater interaction and collaboration during in-class sessions.

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.