

MyMedicalTerminologyLab

School Name [Boise State University, Boise, ID](#)

Course Name [Medical Terminology](#)

Course Format [Online](#)

Key Results Data show that students who complete most of their MyMedicalTerminologyLab assignments earn appreciably higher average quiz, exam, and final course grades.

Submitted by

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Course materials

MyMedicalTerminologyLab and *Medical Language: Immerse Yourself* (custom), Turley

Setting

Boise State University is a four-year public institution located in downtown Boise. The school serves more than 22,000 students: 87 percent are undergraduate, 63 percent are age 18–24, 60 percent attend full time, 59 percent receive some need-based financial assistance, and 16 percent identify as minority.

Medical Terminology is a one-semester, three-credit course that is required of health career majors and an elective for criminal justice and English majors. As such, a diverse group of more than 200 freshman through seniors take the course each semester. Students explore the vocabulary used by medical personnel and are introduced to Greek and Latin prefixes, suffixes, and the combining forms and roots used in medical terminology. The course also includes the study of anatomical, physiological, and pathological terms, clinical procedures, abbreviations and lab tests according to systems of the body. Course learning objectives include demonstrated ability to spell and pronounce medical terms correctly and knowledge of medical terms related to the structure and function of the human body. Clinical application is stressed.

Challenges and Goals

Prior to implementing MyMedicalTerminologyLab in spring 2013, Jeff Anderson, associate professor and director of clinical education, and his colleagues chose to offer their large-enrollment Medical Terminology course online. Faced with creating the course from scratch, the department sought an

existing media-rich, online support program with the resources required for out-of-the-classroom learning in a framework that would maintain structure in the course. Because online students juggle many responsibilities, they need flexibility and options in self-paced course materials. The self-study tutorials, chapter review options, and variety of exercises offered in MyMedicalTerminologyLab gave the Boise faculty the range of alternatives for both homework and assessment that they desired.

Implementation

Anderson expects students to spend approximately nine hours per week on his course in order to be successful. Assignments are divided into weekly lessons comprising the following:

- **Lesson introductions.** Anderson provides learning outcomes for each lesson, as well as an overview, Strategies for Success (a summary of actions to be taken), and a suggested schedule to balance the workload.
- **Reading assignment for each lesson.** Textbook reading prior to assignments.
- **Case studies.** These self-made case studies are a direct result of Anderson's bedside clinical background. Students work through two or three captured-video cases each week using the textbook to translate terms presented on a provided .pdf worksheet.
- **Vocabulary review.** All the vocabulary in the chapters covered each week is covered in a lesson specifically for this review. Anderson highly recommends that students generate flash cards for vocabulary practice.
- **MyMedicalTerminologyLab activities.** For each chapter, six MyMedicalTerminologyLab exercises are assigned: Labeling, Matching, Medical Language Spoken Here, Word Surgery, Popping Words, Spelling Challenge, as well as Self-Paced Study, Self-Paced Study Review Questions, and the Exam Review.

- **Weekly group activities/discussion board and Collaborate sessions.** Students are required to participate in one of two activities: a live class meeting via Collaborate or a discussion board activity that requires one startup comment and at least one response to a peer’s post. Students may alternate between the options throughout the semester.
- **Weekly wrap-up.** A recap of the week and an introduction to the following week’s material, including reading and preparation to discuss a provided journal article (via Collaborate or the discussion board).

Additional assessments include:

- **Exams (three).** Exams are posted to BlackBoard on Mondays and students have until 12 p.m. on Saturday of that week to complete them. Exams comprise approximately 50 multiple-choice and matching questions created by Anderson, are limited to 35–40 minutes (depending on the exact number of questions, and the exam closes immediately when the time limit is reached). An optional final exam is offered to students who are not satisfied with their current exam scores.
- **Quizzes (three).** Approximately 15 multiple-choice and matching questions created by Anderson; students have 10–12 minutes and the same weekly constraints as exams.
- **Career project.** Students pursuing a health science career identify three journals in their professional field of interest. Using an article from one of the journals, students write a 400-word summary and translate a minimum of ten medical terms from the article. Students who are not studying a health science curriculum search for a disease state that interests them and completes the same written assignment.

Note: There are 90 MyMedicalTerminologyLab assignments, and they only count 5 percent toward the final course grade. Anderson awards all students the full 5 percent (25 points) if at least 80 percent of students complete the end-of-semester student survey. MyMedicalTerminologyLab’s gradebook captures all data; the analysis that follows is based on actual student MyMedicalTerminologyLab assignment scores and completion rates.

Assessments

- 65 percent Exams (three)
- 21 percent Quizzes in BlackBoard (three)
- 5 percent MyMedicalTerminologyLab assignments
- 5 percent BlackBoard discussions
- 4 percent Career project

Results and Data

MyMedicalTerminologyLab homework completion rates were analyzed to determine the impact of homework completion on quiz and exam scores (Figure 1). Because the 90 required MyMedicalTerminologyLab activities account for just 5 percent of a student’s overall course grade, many students did not complete a significant number of the assignments. For this analysis, students were put into three groups: those who skipped no more than 30 assignments, students who skipped 31–60 assignments, and students who skipped 61 or more assignments. Results show that students who completed more assignments earned appreciably higher quiz and exam scores; students who skipped the MyMedicalTerminologyLab work performed poorly on average on course assessments.

- Students who completed all assignments (*n* = 20) earned average quiz scores of 82 percent and average exam scores of 81 percent. The course average quiz score was 66 percent, the course average exam score was 70 percent (*n* = 193)
- Students who skipped up to 30 assignments had average exam grades 35 percent higher than students who skipped 61 or more assignments.
- Students who skipped up to 30 assignments had average quiz grades 60 percent higher than students who skipped 61 or more assignments.

In addition, data show that final course grades decreased as students skipped more assignments (Figure 2). This is meaningful because although MyMedicalTerminologyLab homework counts for a very small percentage of the final grade, a strong

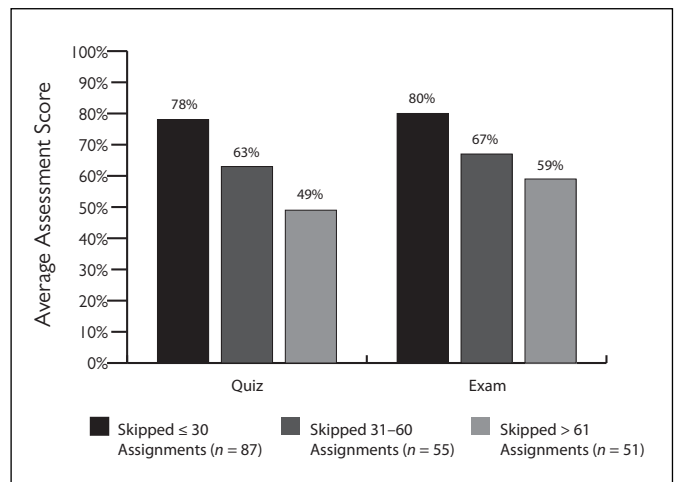


Figure 1. Average Quiz and Exam Scores by MyMedicalTerminologyLab Assignment Completion, Fall 2014 (*n* = 193)

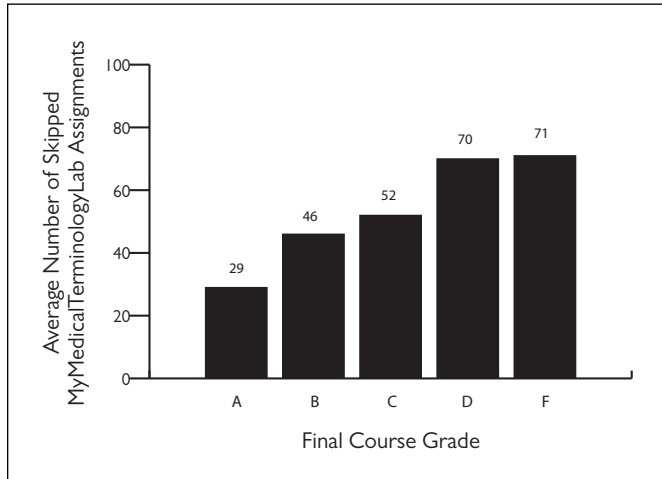


Figure 2. Average Number of Skipped MMTL Assignments per Final Course Letter Grade, Fall 2014 (n=193)

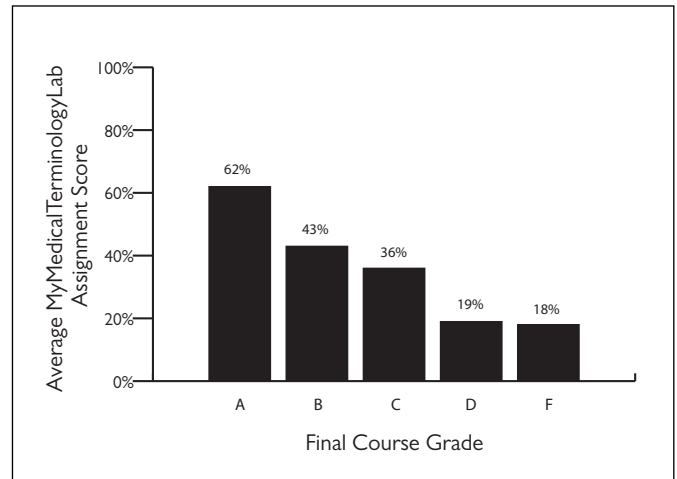


Figure 3. Grade Distribution by Performance on Average MMTL Homework Grade, Fall 2014 (n=193)

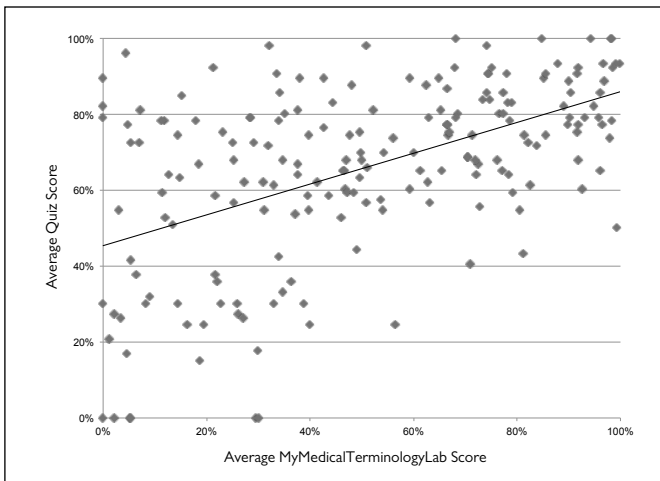


Figure 4. Correlation between Average MyMedicalTerminologyLab Assignment Scores and Average Quiz Scores, Fall 2014 (n = 193)

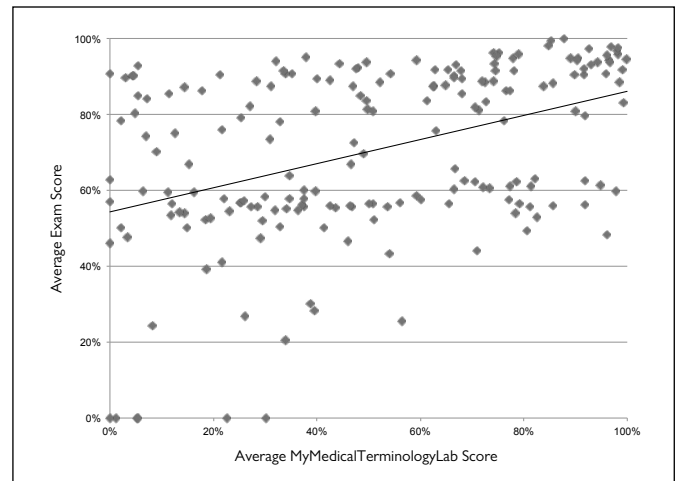


Figure 5. Correlation between Average MyMedicalTerminologyLab Assignment Scores and Average Exam Scores, Fall 2014 (n = 193)

linear relationship exists between homework completion and final course grades. A comparison of MyMedicalTerminologyLab assignments scores and final course grades indicates that raw MyMedicalTerminologyLab homework scores may be a strong predictor of both overall course success and final course grades (Figure 3).

Figures 4 and 5 are correlation graphs that measure the strength of the relationship between MyMedicalTerminologyLab assignment scores and quiz and exam scores. The corresponding p values measure the statistical significance, or strength, of this evidence; $p < .01$ is considered strong evidence. Both correlations indicate a strong positive relationship where $r = .52$

(quiz correlation) and $r = .42$ (exam correlation) and p value $< .01$. MyMedicalTerminologyLab assignment scores may help students in an online course identify where they stand in terms of preparation for quizzes and exams. As a best practice, MyMedicalTerminologyLab assignment scores may help instructors identify early on those students who are struggling and at risk of poor course performance.

Practice and review in MyMedicalTerminologyLab helped students master material, as indicated by the higher quiz, exam, and final course grades achieved by students who completed more MyMedicalTerminologyLab homework assignments.

The Student Experience

In spring 2015, students were asked to participate in a voluntary end-of-semester survey administered by Anderson. Students were asked to rate statements on a scale of 0 (strongly disagree) to 5 (strongly agree). Following are a sample of average statement scores:

- 4.23** MyMedicalTerminologyLab matching activities significantly helped me to master the chapter content.
- 4.04** Using the Dynamic Study Modules was far more helpful to me than any of the other MyMedicalTerminologyLab activities.
- 4.03** MyMedicalTerminologyLab self-paced study activities significantly helped me to master the chapter content.

On the same survey, when asked what aspects of the course were most valuable to the overall learning experience, student responses included:

“The MyMedicalTerminologyLab was the best thing for my learning, without which I would have struggled on examinations.”

“The activities online really helped me understand the content more. It was nice that we could do the activities more than once, because doing it over and over helped me learn the material.”

“MyMedicalTerminologyLab were probably the most effective. They allowed me to practice what I had learned.”

“MyMedicalTerminology Lab was very useful in quizzing myself over the learning objectives.”

Conclusion

Online courses pose significant challenges for instructors, not the least of which is that students are juggling work, school, families and other responsibilities, and time is at a premium. MyMedicalTerminologyLab assignments allow students to work through challenging course material at their own pace and as time permits. Practice and review in MyMedicalTerminologyLab helped students master material, as indicated by the higher quiz, exam, and final course grades achieved by students who completed more MyMedicalTerminologyLab homework assignments.

Although his students already had MyMedicalTerminologyLab assignments to complete on a weekly basis, midway through the spring 2015 semester, Anderson added another layer of the MyMedicalTerminologyLab program to the course: Dynamic Study Modules. Dynamic Study Modules continuously assess student performance and activity. It then uses data and analytics to develop personalized medical terminology content for each student. Dynamic Study Modules help students become more-effective and more-efficient learners by analyzing accuracy and confidence and delivering the exact content each learner needs, when they need it. According to Anderson’s students, the Dynamic Study Modules were an effective way to learn content and review material. When asked what they liked most in their online learning experience, one student replied, “the Dynamic Study Modules!”

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.