

MyMedicalTerminologyLab

School Name Zane State College, Zanesville, OH

Course Name Medical Terminology

Course Format Hybrid

Key Results

Data show a strong positive correlation between MyMedicalTerminologyLab homework scores and quiz, exam, and course grades. Students who completed all or most MyMedicalTerminologyLab assignments achieved 40 percent higher quiz grades and 23 percent higher exam grades than did students who skipped more assignments.

Submitted by

Kelli Wehr, Adjunct Instructor

Course materials

MyMedicalTerminologyLab and *Medical Terminology for Health Care Professionals*, Rice

Setting

Zane State College is two-year public college serving nearly 3,000 students from two small-town campuses in central Ohio. The school offers more than 40 associate degree programs, certificates, workshops, and occupational skills training in a wide range of studies. Forty-three percent of the school's students are nontraditional students of more than 25 years of age.

Medical Terminology is a one-semester, two-credit course required of all health care majors, including physical therapy, occupational therapy, and health information management. The course provides a study of the vocabulary used by medical personnel with an emphasis on basic prefixes, suffixes, root words, and combining vowels.

Challenges and Goals

Medical Terminology was a high enrollment, high failure course with both low pass and success rates. Kelli Wehr, adjunct instructor, and her colleagues sought a new course format and text to help increase student engagement in course content and promote application of course topics to real-world situations. Wehr chose to pilot MyMedicalTerminologyLab for its range of interactive games built around the spelling and pronunciation of complex medical language.

Implementation

Wehr teaches a 16-week hybrid class in which eight weeks are spent fully online, eight weeks are spent in the classroom (one day per week for two hours), and all assignments are delivered via MyMedicalTerminologyLab. Before each lecture, students are assigned a textbook portion so they are familiar with the ideas and material to be presented. Wehr uses lecture time to introduce new chapter content via group work and hands-on activities. By assigning MyMedicalTerminologyLab outside of lecture, and thereby ensuring that students spend sufficient time with basic course content, Wehr is able to focus on practical applications and career options in class.

Homework assignments are due biweekly and consist of six kinds of interactive games: matching, spoken language, word surgery (to dissect words), popping words, spelling challenge, and exam review. Each game is worth five points, and students have unlimited attempts to complete them. Assignments are open for two weeks, before and during the lecture period for completion; if requested, assignments are reopened for exam review. Wehr also suggests that students create flash cards to review any challenging vocabulary.

Students are eligible to take quizzes after they've completed homework assignments on or before the date and time they are due; late assignments receive a grade of zero. Quizzes are multiple choice, cover one to three chapters each (but are comprehensive), and have a 30-minute time limit. Students who exceed the time limit receive a grade of zero. Students have three attempts at each quiz, and the highest score is recorded as the final quiz grade.

A comprehensive midterm exam covers chapters 1–4 and 8–11. It is a scantron, multiple-choice exam taken on campus. The comprehensive final exam covers all chapters (1–18) and comprises 100 multiple-choice questions. There are no makeups allowed for either exam.

Students who completed the most MyMedicalTerminologyLab assignments earned significantly higher quizzes, exams, and final course grades.

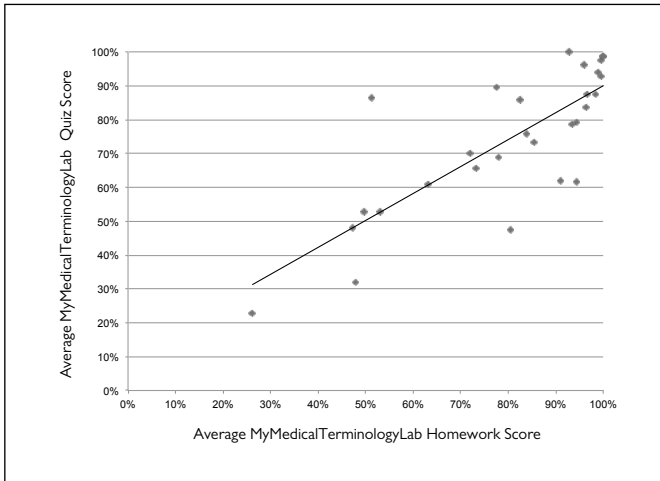


Figure 1. Correlation between Average MyMedicalTerminologyLab Homework Scores and Average MyMedicalTerminologyLab Quiz Scores, Fall 2014 (n = 29)

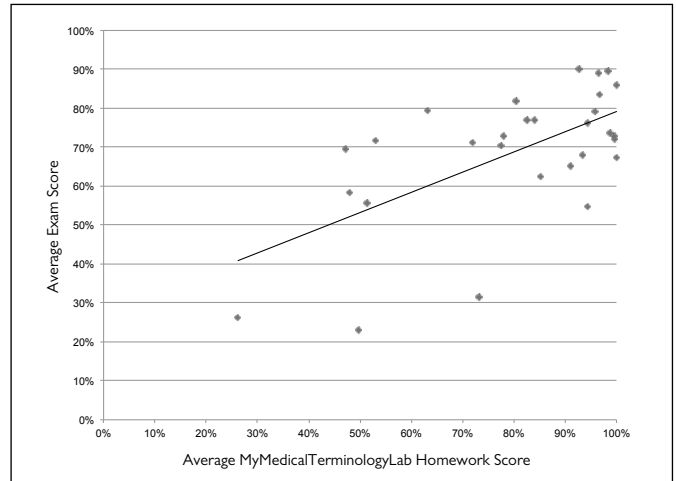


Figure 2. Correlation between Average MyMedicalTerminologyLab Homework Scores and Average Exam Scores, Fall 2014 (n = 29)

Assessments

- 29 percent Final exam
- 25 percent MyMedicalTerminologyLab homework (eight)
- 25 percent MyMedicalTerminologyLab Quizzes (eight)
- 21 percent Midterm exam

Results and Data

Figure 1 shows a very strong positive correlation between MyMedicalTerminologyLab homework scores and average quiz scores where $r = .79$ and p value $< .001$. Figure 2 shows a strong positive correlation between MyMedicalTerminologyLab homework scores and average exam scores where $r = .62$ and p value $< .001$. MyMedicalTerminologyLab homework scores can help students identify where they stand in terms of quiz and exam preparation. Data suggest that student performance on MyMedicalTerminologyLab assignments is a leading indicator¹ of future assessment success. Similarly, MyMedicalTerminologyLab scores can help instructors identify early on struggling and at-risk students. In addition, data indicated a strong correlation

between average MyMedicalTerminologyLab quiz and exam scores, where $r = .52$, $p < .01$ (not depicted here).

- 96%** Average MyMedicalTerminologyLab score for students earning an average exam grade of A.
- 57%** Average MyMedicalTerminologyLab score for students earning an average exam grade of F.

In addition, MyMedicalTerminologyLab homework completion rates were analyzed to determine if a relationship exists between completion rates and average quiz, exam, and final course grades (Figure 3). Results show that those students who completed the most MyMedicalTerminologyLab assignments earned considerably higher quizzes, exams, and final course grades. The average number of skipped assignments was six.

- Students who skipped five or fewer assignments had 40 percent higher average quiz grades than did students who skipped six or more assignments.
- Students who skipped five or fewer assignments had 23 percent higher average exam grades than did students who skipped six or more assignments.

¹<http://annenberginstitute.org/pdf/LeadingIndicators.pdf>

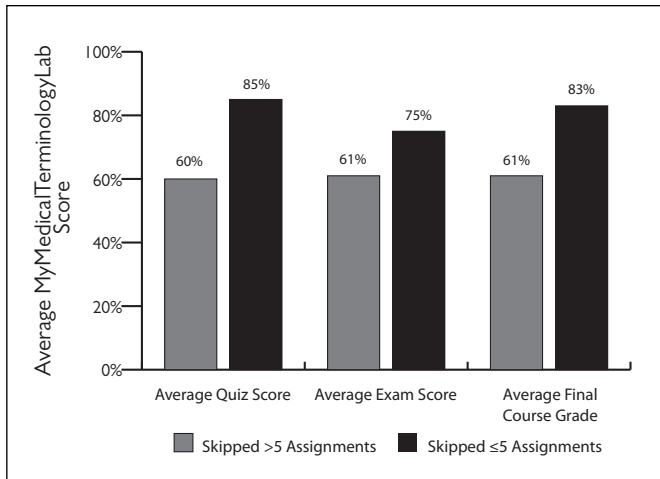


Figure 3. Average Quiz, Exam, and Final Course Grade by MyMedicalTerminologyLab Homework Score, Fall 2014 ($n = 29$)

- Students who skipped five or fewer assignments had 36 percent higher average final course grades than did students who skipped six or more assignments.

Wehr allows students to retake quizzes up to three times to help them continue the learning process while also exhibiting proficiency. Students were grouped into two categories based on the mean number of attempts (the average number of attempts was 2.9). Figure 4 shows that students who used more than one attempt on at least three or more quizzes earned average exams scores that were 17 percent higher than students who did not use the extra attempts.

The Student Experience

In a fall 2014 end-of-semester survey, students were asked to rate MyMedicalTerminologyLab in terms of how much it helped them learn course material (5 = extremely helpful, 1 = extremely unhelpful). Results indicate that students overwhelmingly value the program.

- 4.35** Average student rating of MyMedicalTerminologyLab.
- 52%** Percentage of students who rated MyMedicalTerminologyLab *extremely helpful*
- 88%** Percentage of students who responded “Yes” when asked if they would recommend MyMedicalTerminologyLab to another student.

In the same survey, Wehr’s students shared the following positive comments about MyMedicalTerminologyLab.

“It is a great system. I learned so much by using it.”

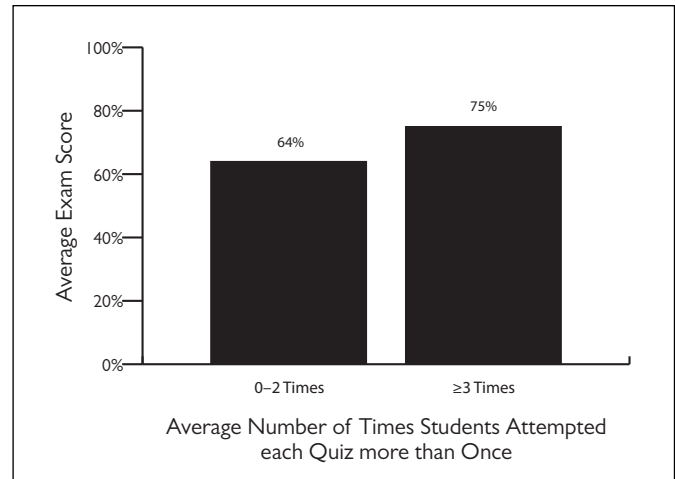


Figure 4. Exam Performance Based on Number of MyMedicalTerminologyLab Quiz Attempts, Fall 2014 ($N = 29$, $n = 16$ students who attempted two or fewer quizzes more than one time, $n = 13$ students who attempted three or more quizzes more than one time)

“I really like this program. It helps me to study and learn the material efficiently.”

“I like it much better than having tons of paper homework to do. I like that I get instant feedback/answers so I can correct my mistakes immediately and know that I am studying the correct definitions.”

“I spend at least three hours a week in MyMedicalTerminologyLab. I go over the self-paced portions and most of the mastery items.”

“[The homework assignments] were all so helpful. The more I did them, the better I got and the more familiar with the words I got.”

“[The labelling exercises] are very important. In the medical world, one of the most important points of information is knowing the location of body parts.”

Conclusion

By requiring students to complete work in MyMedicalTerminologyLab in conjunction with attending lecture, Wehr believes she has successfully increased student engagement in course content and facilitated more participation in lecture activities. Data suggest that students who routinely spend time in the program achieve greater quiz and exam success than those who do not. In addition, students who complete most of the assignments and frequently redo quizzes earn higher quiz and exam scores than those who do not.

In spring 2015, the department agreed to continue using MyMedicalTerminologyLab, with plans to revise some of the program’s interactive games. Future plans include monitoring pass rates as MyMedicalTerminologyLab is more fully implemented beyond the current pilot.