

Product Name **MasteringA&P**
 Course Name **Anatomy and Physiology I and II**
 Credit Hours **Three (each)**

Key Results Adoption of MasteringA&P increased student engagement in course content outside of the lecture and the lab, students came to class better prepared, and they scored substantially higher on comprehensive final exams.

Text

Human Anatomy and Physiology, 8e, Elaine N. Marieb and Katja Hoehn

Implementation

This two-course sequence is a study of the structure and function of the human body. Traditional face-to-face and online sections are offered. The majority of students taking these courses are nursing or allied health majors, who are required to take both A&P I and II for completion of their program. A small percent of students will transfer to a four-year institution. The online students who used MasteringA&P during this study were part of the college’s online course program, versus an online degree program. There are lower enrollments in A&P II due to some students not passing A&P I, and others switching majors.

The department realized that many students were struggling in these courses, so we looked at the issues that were impacting student success—including poor time management, a lack of study skills, no course prerequisites, and an increase in non-traditional students who hadn’t been in a classroom in recent years. To address these needs, we redesigned the course with the goal of increasing students’ preparedness, exposure to and engagement with the course materials, and retention and student success.

My MasteringA&P assignments consist of prelecture homework of 15-25 questions for each chapter. I include activities and reading questions, but no testbank questions. These assignments are untimed, and students have two attempts to answer each question, but one attempt at the homework assignment overall. Assignments are designed to take approximately 30 minutes to complete. In addition, I assign a post-lecture, 10-question, 15-minute quiz for each chapter from a pool of testbank questions. Students have one attempt per quiz. Students may rework both homework assignments and quizzes for practice after their due dates.

I review the homework results and diagnostic charts in MasteringA&P prior to lecture so that I can spend time addressing any common misconceptions. Prior to the exam, I also spend class time reviewing any quiz questions that more than 40 percent of the class missed.

Assessments

- 60 percent Lecture tests (five)
- 20 percent Comprehensive final
- 20 percent Mastering A&P quizzes and homework

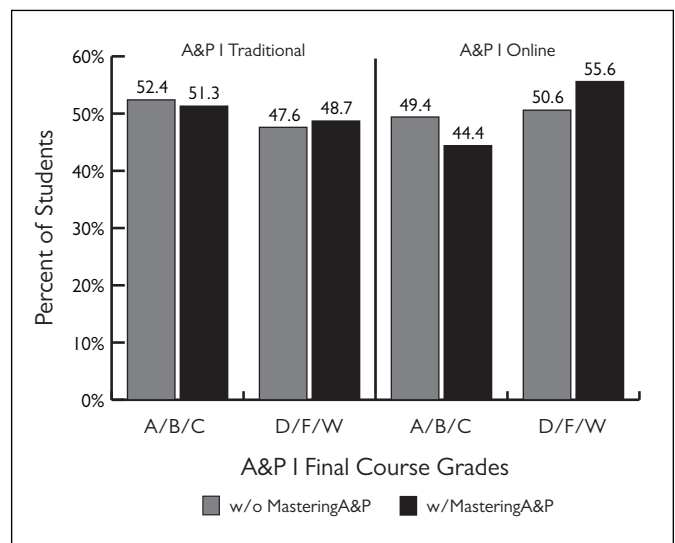


Figure 1. Anatomy and Physiology I Final Course Grades (Without MasteringA&P: A&P I n=759, A&P I Web n=85; both include fall 2010 and spring 2011. With MasteringA&P: A&P I n=876, A&P I Web n=63; both include fall 2011 and spring 2011.)

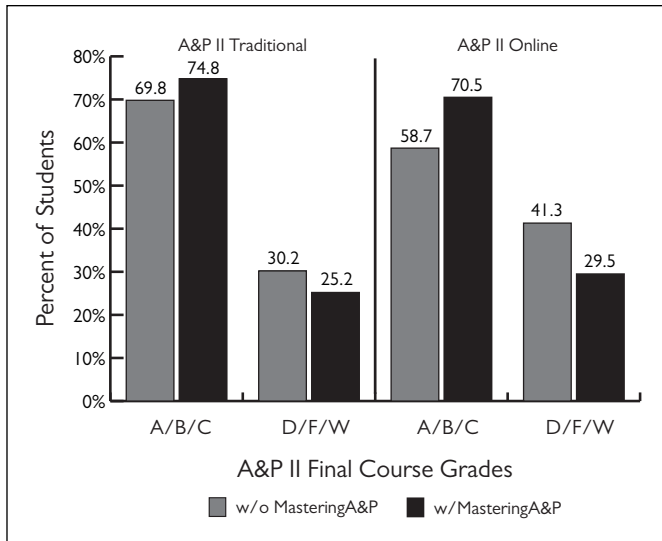


Figure 2. Anatomy and Physiology II Final Course Grades (Without MasteringA&P: A&P II n=427, A&P II Web n=63; both include fall 2010 and spring 2011. With MasteringA&P: A&P II n=473, A&P II Web n=44; both include fall 2011 and spring 2011.)

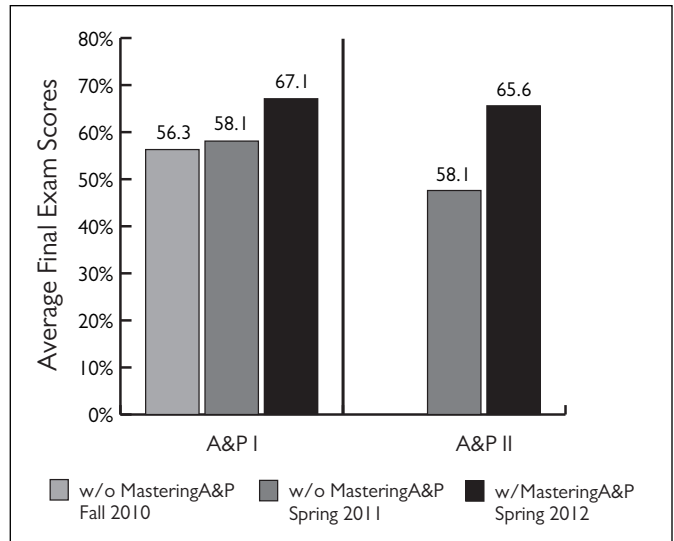


Figure 3. Average Divisionwide Final Exam Scores, Fall 2010–Spring 2012

Results and Data

After my first semester using MasteringA&P in A&P I, I found that As, Bs, and Cs decreased, and Ds, Fs, and withdraws (D/F/W) increased. The results for A&P II showed the opposite—an increase in As, Bs, and Cs, and a decrease in the D/F/W rate (see figures 1 and 2).

I believe the results in A&P I are caused by multiple factors. Many of the students are freshmen and have poor time management and study skills. In addition, there are no prerequisites—many students may need to take (or may be taking) a developmental or remedial course in reading, math, and/or writing at the same time. With MasteringA&P, students need to fully understand the concepts—those who in the past edged into a higher grade by guessing may find they need to work harder to earn the higher grade. The higher grades in A&P II indicate that students who successfully complete A&P I do better in the more advanced course, likely because of an increased depth of knowledge and retention of the concepts.

I also looked at final exam results, as it is a comprehensive test that measures learning gains made throughout the semester. In both A&P I and II, students showed significant, positive increases in their final exam scores (see figure 3).

The Student Experience

In student surveys, more than 50 percent of students report that MasteringA&P helped them improve their test grades, and that the program is an effective learning tool.

“Do you feel online homework/quizzes improved test grades?”

- 15% Significantly
- 45% Somewhat
- 22% Not at all
- 5% Actually decreased

“The online homework/quizzes...”

- 34% Were effective learning tools that improved my interest
- 24% Were effective, but too time consuming
- 17% Made studying more difficult because of the extra time required
- 10% Were time consuming and did not correlate well with course content

Conclusion

After implementing the pre- and postlecture MasteringA&P assignments, students are coming to class more prepared and are more engaged in learning. They ask better questions and have a better understanding of what they don’t know. This means that class time can now be spent discussing more-challenging applications and concepts and giving students a better foundation to apply to future courses.

*Submitted by Abigail Goosie
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