

Product Name **MasteringA&P**

Course Name **Anatomy and Physiology I and II**

Credit Hours **Four**

Key Results After implementing MasteringA&P, more students earned As and Bs and fewer students withdrew from the course.

Text

Visual Anatomy and Physiology, 1e, Frederic H. Martini, William C. Ober, and Judi L. Nath

Implementation

Anatomy and Physiology (A&P) I is a study of basic biological chemistry, cellular structure and function, histology, and integumentary, skeletal, and nervous systems. A&P II is a study of the anatomy and physiology of the muscular, circulatory, immune, respiratory, digestive, excretory, endocrine and reproductive systems. Both courses are prerequisites for admission to all allied health programs except one, and the grades achieved in these courses are often used as a predictor for student success for admission to those programs.

Because of the importance of these courses, it is critical that students succeed in the course. Over the years, I became increasingly frustrated with students who did not read the textbook and then struggled in class. I implemented MasteringA&P in 2011 because the program enabled me to assign prelecture homework and thereby better monitor student reading and comprehension of the material.

Required homework consists of end-of-chapter questions and tutorials. I use the Gradebook's diagnostics to better understand where students are struggling. Also, I add my own essay review questions to the MasteringA&P homework in order to mirror questions on the exams. I develop complex content questions that cover multiple modules and promote critical thinking skills. Finally, I give feedback on the written homework questions before the exam review period to help students identify those concepts they need to study.

After my first semester using MasteringA&P, the results showed an increase in the number of students earning an A or B in the course and higher lecture averages. More recent analysis shows that the trend of increased As and Bs continued in subsequent semesters for both A&P I and II.

To better assist students who need help, I spend office hours in the learning center. I find that more students will meet with me in the learning center than in my office. In addition, I allow students to print assignments after the due date so they can use them as study tools—students often bring the printed assignments when they meet with me to reference specific items.

Assessments

70 percent Lecture
Five exams (83 percent), MasteringA&P (17 percent)

30 percent Lab

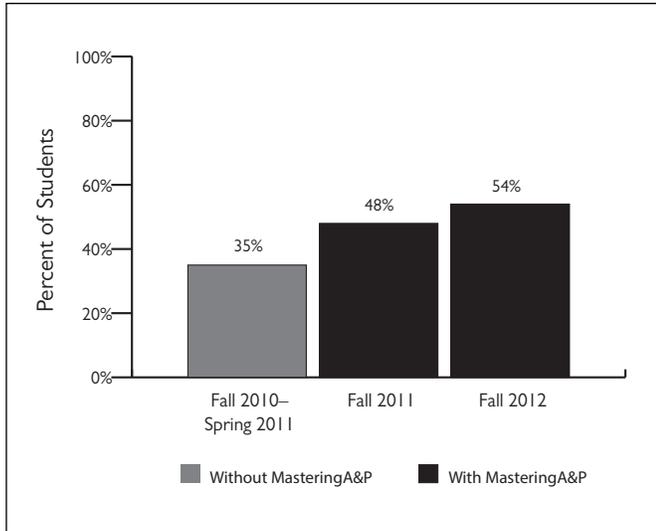


Figure 1. Anatomy & Physiology I A/B Rates with and without MasteringA&P, Fall 2010–Fall 2012 (Fall 2010–Spring 2011 n= 114, Fall 2011 n=25, Fall 2012 n=26)

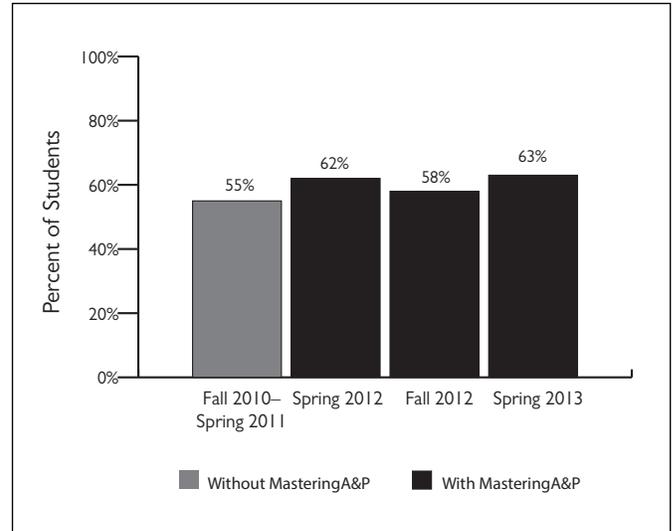


Figure 2. Anatomy & Physiology II A/B Rates with and without MasteringA&P, Fall 2010–Spring 2013 (Fall 2010–Spring 2011 n=50, Spring 2012 n=29, Fall 2012 n=24, Spring 2013 n=30)

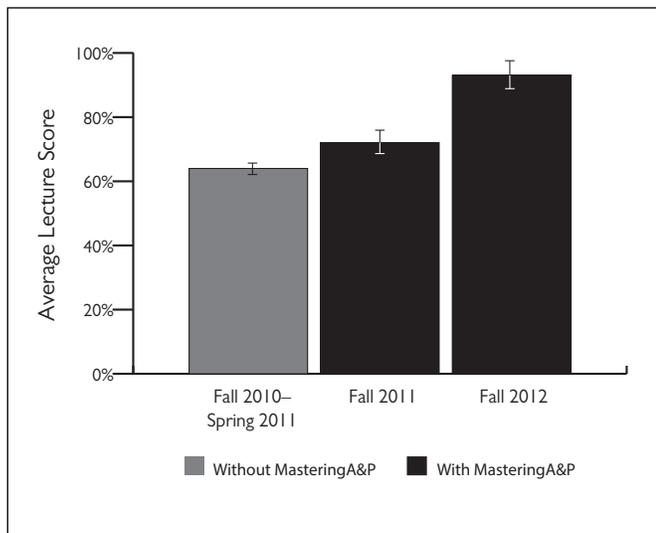


Figure 1. Anatomy & Physiology I Average Lecture Score with and without MasteringA&P, Fall 2010–Fall 2012

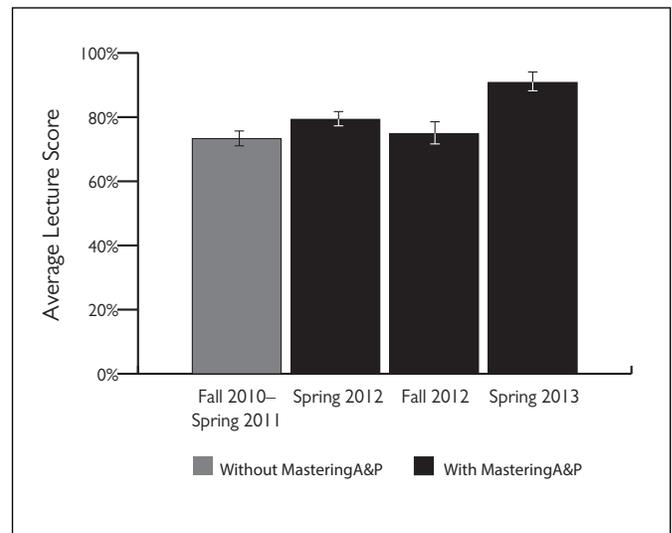


Figure 1. Anatomy & Physiology II Average Lecture Score with and without MasteringA&P, Fall 2010–Spring 2013

Results and Data

After my first semester using MasteringA&P, the results showed an increase in the number of students earning an A or B in the course and higher lecture averages. More recent analysis shows that the trend of increased As and Bs continued in subsequent semesters for both A&P I and II (figures 1 and 2).

My initial analysis also showed significantly higher lecture grade averages (all exam scores and the MasteringA&P score, equal to one exam grade). I continue to see higher results for the lecture average for both A&P I and II (figures 3 and 4).

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In addition, I found the following:

- In A&P I, the withdraw rate dropped from 16 percent to 11 percent and 10 percent respectively in fall 2011 and fall 2012.
- In fall 2012, 79 percent of students earning an A or B in A&P I scored 80 percent or higher on their MasteringA&P homework. The average MasteringA&P score for all students earning an A or B in the course was 84 percent.
- In A&P II, 86 percent and 95 percent of students earning an A or B in the course scored 80 percent or higher on their MasteringA&P homework in fall 2012 and spring 2013 respectively. The average MasteringA&P score for all students earning an A or B in the course during those semesters was 87 percent and 92 percent respectively.

The Student Experience

I have been teaching for 39 years. In my experience, students often will not ask for help when they need it, usually because they don't know where they need it or are too embarrassed to ask for help. From the start, I saw that MasteringA&P helped students understand what they were struggling with and that working in the program gave them the confidence to ask questions and get help. I continue to see this in students who ask about topics from their homework that they don't understand, both in class and during my office hours in the learning center.

Because MasteringA&P provides feedback and hints, it helps students understand where to focus their efforts. The result is higher course scores and fewer student withdrawals.

Conclusion

MasteringA&P is a very useful tool that can help improve student learning, if a student uses it and uses it conscientiously. The burden for success is on the student and their effective use of Mastering's resources.

I find that the better I am at creating relevant assignments based on what I expect from the students, the better the students perform. Because MasteringA&P provides feedback and hints, it helps students understand where to focus their efforts. The result is higher course scores and fewer student withdrawals.

*Submitted by Bruce Fisher
Roane State Community College*