

Using MasteringBiology®: Case Study

Submitted by:

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Background on the Course

I teach both non-majors and majors biology. About 600 students take non-majors biology annually, which is a two-semester course with a lab. It is a university requirement that all science students must take the course, and 80% of these students are engineering students. We use *Campbell Biology: Concepts and Connections*.

The majors course is set at a higher level and covers three semesters with a lab. About 120 students take this course each year. We use Reece's *Campbell Biology*, Ninth Edition.

Assessment

Both the non-majors and majors courses follow the same assessment procedures. All assessment is hand graded.

- Graded exams: 30% (2 each at 15%)
- Graded lab assignments: 20% total (2–3 assignments per semester)
- Final exam: 50%

MasteringBiology is recommended, but not required. However, to increase student participation, we've added a competition element. The students with the highest score can win a free textbook of their choice.

Implementation

Because MasteringBiology is not required, we post one very large assignment per semester. The assignment is comprised of items that we select to correspond with our syllabus and course goals. Students can take the entire semester to complete the work. Most work steadily throughout the semester, using the assignment as a way to prepare for exams and the final.

All types of items are selected, including the test bank items, activities, and tutorials. Students find the tutorials and BioFlix® particularly helpful. We are careful to select the higher level questions in Bloom's taxonomy.

To keep student motivation high, I will access the gradebook from time to time in order to report to the class which students are ahead in the competition.

Motivating the students by competitions such as this one has been particularly helpful with the non-majors students. Since the class sizes are so large, it is not possible to add more required or graded elements to the course. In addition to the MasteringBiology competition, we have two others. Students who create the best histological slides with excellent labeling may win a free book, and students may opt to give a solo presentation on any biology concept of their choice.

Trends

Before we ran the MasteringBiology competition, students had to rely on their own study techniques to prepare for the exams. MasteringBiology provides me with an opportunity to help guide the students with their study. There is some initial work in creating the assignments, but they are easy to copy to future courses. And because MasteringBiology provides immediate feedback, the students know if they understand the material or if they need more preparation.

Students like using MasteringBiology. When I surveyed the students, here are some of the things they had to say:

"The questions help to highlight what you understand, and what you don't understand."

"I just like MasteringBiology, as it is good practice."

"The questions were challenging."

Conclusion

As noted above, MasteringBiology is helping students prepare for exams. Before we introduced the competition, it was up to the students' own initiative to prepare for exams. MasteringBiology offers them helpful guidance. And the competition helps to make the experience fun!

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