

BIOL 485: a brief assessment

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In 2013 I created and taught BIOL 485 for the first time. This was a literature-based seminar on biological aspects of drug development for malaria. My main goals were that the students in this course would (1) gain willingness and confidence in reading and discussing primary research literature, (2) get better at reading, understanding, and discussing primary research literature, and (3) gain an improved understanding of how research leads to the creation of new drugs for infectious diseases.

I assessed progress toward goal #1 mainly through pre- and post-course surveys. Students came into the course with more article-reading experience than I might have guessed; only 4 of 19 students surveyed had previously read fewer than 10 journal articles, while 10 had read more than 20. Despite this, noticeably positive pre-to-post changes occurred in students' attitudes toward such articles.

<i>Question</i>	<i>pre → post means*</i>
What is your confidence in your ability to read and analyze scientific journal articles?	1.8 → 3.1
What is your level of interest in reading scientific journal articles?	2.5 → 3.1
What is your understanding of "the way scientific research is done" or "the scientific research process"?	2.3 → 3.3
What is your confidence in your ability to lead a class discussion about a scientific journal article?	1.4 → 2.7

*Likert-style responses were converted to a 0-to-4 scale for convenience.

Regarding goals #2 and #3, students' work throughout the quarter gave me a sense that they were generally reaching these goals. However, I did not collect formal pre/post data to confirm or refute this impression.

Feedback from the Instructional Assessment System (IAS)

Students also filled out a standardized end-of-course form according to UW policy. Ratings from "Excellent" to "Very Poor" were converted to 0-to-5 scores. Students considered the course very worthwhile according to these ratings.

<i>Question</i>	<i>Median response</i>
The course as a whole:	4.79
The course content	4.83
Instructor's contribution:	4.91
Instructor's effectiveness:	4.83
Instructor's interest:	4.83
Amount learned:	4.59
Grading techniques:	4.67

Particularly satisfying aspects of the 2013 class

Many student-led discussions were truly outstanding. I was glad to have given the students so much control over the class sessions because they made very good use of the time and experimented with the class format in interesting, informative ways.

I believe that the open-notes quizzes were effective in holding students accountable for the material while de-emphasizing rote memorization of facts and minimizing stress.

I also noticed that students especially enjoyed “tales from the trenches” in cases where my own lab research related to issues discussed in class. It was nice to be able to offer students this additional insight into the research process.

Thoughts on future versions of the course

I would revisit a few issues if I were to teach this course again.

- I might want to do formal pre- and post-testing of students’ ability to analyze articles that they have not previously read.
- Independent projects were an opportunity for students to read and write about papers that they personally selected. This assignment was somewhat incongruous with the rest of the course in that it was the only point at which the students needed to practice effective scientific writing. Is it OK to give them this bit of practice rather than none at all? Or should writing become a more pervasive theme of the course?
- Should all members of a discussion-leading team receive the same grade? That’s how I did the grading this time around, but I should think more about whether this is the best policy.
- Should the featured parasite/disease change from year to year? Re-using papers and assignments would make the course easy to teach, but would also increase the likelihood of students borrowing answers from previous students.
- When students broke up into small groups for discussions, sometimes different groups discussed different questions and sometimes each group tackled the same question. Students seemed to prefer the latter. Should that become the norm in the future?
- Finally, students’ grades in the 2013 course were extremely high. I should grade a bit more harshly in the future.