

Course Assessment- Part B: Your Results & Analysis

COMPLETE

#513

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BI 101-Biology-Sascha McKeon- Summer 2021

* **Part B: Your Results DIRECTIONS 1. Report the outcome achievement data gathered via the assignments, tests, etc. you identified for each outcome (question 3) of your Part A. (Only include data for students who completed the course. Do not include students who withdrew or earned an incomplete) Data for all 3 outcomes should be reported below.**

LO1: Students will differentiate between and appropriately use inductive and deductive reasoning in decision making. This outcome was assessed by using online lab simulations that allow students to reflect on background reading and formulate their own hypotheses (this is inductive logic), and then over the course of the simulation gather data and submit conclusions. In an inquiry assignment "Design an Experiment", 100% of students were able to correctly formulate a hypothesis based on the given case study; and upon completion of the experiment, 78% drew logical and accurate conclusions.

LO2: Student will apply biological principles and generalizations to novel problems. This outcome was assessed through class discussion and feedback, where students proposed a novel experiment identifying a causal relationship they would like to explore and then reviewed a peers "problem" and recommended an experimental design based upon the scientific method, and content principles they learned in that unit. 100% of students participated in this assignment, and provided novel ideas and constructive feedback to their peers.

LO3: Student will develop informed positions or opinions on contemporary issues and communicate effectively using appropriate biological vocabulary. Each week students participated in discussion threads involving hot topic/debate content relevant to the textbook subject matter. We tackled issues such as STEM CELL ETHICS, GMOs, GENETIC PROFILING/SCREENING, VACCINE MANDATES. Students were tasked to review supplemental information prior to taking a stance on the issue, then effectively share why they lean towards a certain view. Students provided "YES and" feedback to each other, providing cited references from external research. 100% of students participated in this assignment, and based on course survey results (though limited) students felt confident in their ability to do so.

* **Outcome #1**

LO1: Students will differentiate between and appropriately use inductive and deductive reasoning in decision making.

* **% of students who successfully achieved the outcome (C or above)**

100%

* **Outcome #2**

LO2: Student will apply biological principles and generalizations to novel problems.

* **% of students who successfully achieved the outcome (C or above)**

100!

* **Outcome #3**

LO3: Student will develop informed positions or opinions on contemporary issues and communicate effectively using appropriate biological vocabulary.

* **% of students who successfully achieved the outcome (C or above)**

100%

*** ANALYSIS 3. What contributed to student success and/or lack of success?**

If students engage (participate) in the class, assignments and assessments build upon life skills (thinking critically, communicating effectively) so that their success is less about their "SCIENCE KNOW HOW" and more about data driven inquiry and reflection, which is less overwhelming and more accessible. This allows students to engage in the content, and be successful, despite the added "biology" lens applied to the topics at hand. Learning occurs through modeling content in everyday life, application, and repetition.

Lack of success is a direct result of failure to engage in the content, an accumulation of missed assignments and work; not reflective of inherent skill or inability to learn.

*** 4. Helping students to realistically self-assess and reflect on their understanding and progress encourages students to take responsibility for their own learning. Please compare your students' perception of their end-of-term understanding/mastery of the three outcomes (found in student evaluations) to your assessment (above) of student achievement of the three outcomes.**

The course was low enrolled (just 12 at the start), struggled with retention this term (ended with 10) and the number of students who completed the survey was limited (just one). So it is difficult to extrapolate any significance from the feedback. However this student felt "expert" confidence towards each of these 3 outcomes at the start of term, and again at the end of term. Which supports my goal of building course content around SCIENTIFIC PROCESSES, and LIFELONG SKILLS that a scientific mind can APPLY to any field. The hope is that if students are not intimidated by the perceived "difficulty" in science, they can engage in the content and both increase their proficiency in these skills, as well as retain the biological content because it's presented in a relevant and accessible way.

*** 5. Did student achievement of outcomes meet your expectations for successfully teaching to each outcome (question 4 from Part A)**

YES. I had hoped for 70%; and it was better.

*** 6. Based on your analysis in the questions above, what course adjustments are warranted (curricular, pedagogical, student instruction, etc.)?**

Perhaps incentives should be provided in the course (possible extra credit) for student participation in surveys so that I can better utilize the feedback. Overall though, I think the labs chosen and the discussion topics are relevant, of interest to students, and serving their purpose. Between terms, I reflect on new "current events" and "hot button issues" to see if new debates can be utilized as part of our discussion, and new videos, papers, and resources can be shared to supplement the background research for these topics, and I will continue to do so.

7. What resources would be required to implement your recommended course adjustments (materials, training, equipment, etc.)? What Budget implications result?

SIMBIO simulation packages need to be provided to students and this is best paid for by the distance learning fee.

*** 8. Describe the results of any adjustments you made from the last assessment of this course (if applicable) and their effectiveness in student achievement of outcomes.**

As mentioned in Question 6, each term I participate in these discussions as well, to provide an expert voice and sharing of new content for students to consider and expand their horizons with. I am always on the look out for new videos, short papers, ted talks, and data that I can disseminate. I firmly believe this keeps the class interesting as it's all CURRENT and relatable.

9. Describe how you explain information about course outcomes and their relevance to your students.

I provide students with a COURSE ALIGNMENT MATRIX. This matrix demonstrates the alignment between course-level instructional objectives, module-level learning outcomes, level of Bloom's for each set of objectives, and assessments for the entire course so students can see the value of each assignment and the overall progression of learning content in the course.

10. Please describe any changes/additions to instruction, curriculum or assessment that you made to support students in better achieving the CGCC Institutional Learning Outcomes: ILO #1: Communication. The areas that faculty are focusing on are: "Source and Evidence" and "Organization and Presentation" and ILO #2: Critical Thinking/Problem Solving. The areas that faculty are focusing on are: "Student's Position" (Critical Thinking) and "Evaluate Potential Solutions" (Problem Solving). ILO #4: Cultural Awareness. The area that faculty is focusing on is: "Curiosity" - Encouraging our students to "Ask deeper questions about other cultures and seek out answers to these questions" ILO #5: Community and Environmental Responsibility. The area that faculty are focusing on are: "Applying Knowledge to Contemporary Contexts" and "Understanding Global Systems" ILO#3 -Quantitative Literacy - "Application/Analysis" and/or "Assumptions"

Since the last term, I made the course MORE ACCESSIBLE by providing students an alternative lab (as not all can access the SIMBIO software with their given tech) which was available from the get go, rather than in previous terms, when they were provided only on an as needed basis. My concern was that if they had to ask, even if I announce this possibility, many will forget to or be too intimidated to. Why create gates and obstructions. By removing this obstacle, students had easy access from day 1 and that increased the participation with lab work early on as students could self select the option that worked for them anonymously and effortlessly. This aligns with ILO#1 Organization and Presentation.