

Assessment Plan: GELOs in Biology Courses

A. PLNU General Education lab courses (BIO 101, 103, 105, 130, 210 & 211)

Learning Outcome: GELO 1d. Critical Thinking: Students will be able to examine, critique and synthesize information in order to arrive at reasoned conclusions.

This outcome will be measured yearly via direct, summative assessment. Students are chosen randomly by the administration.

Outcome Measure:

BIO 101, 103, 105, 210, 211 Signature Assignment: Individual lab report

BIO 130 Signature Assignment: Motor unit activity

Criteria for Success: 70% of students will score at an average of level 2 or higher on the rubric. Level 2 was chosen because all of these courses are introductory courses. BIO210 and BIO211 are freshmen courses for all Biology Department majors; BIO130 is the introductory Anatomy & Physiology course for pre-nursing students and Allied Health majors; BIO101, 103, 105 are General Biology courses for all other majors.

Longitudinal Data:

Class	n	Ave+S.D.	% of Students Scoring ≥ 2
BIO101	37	2.0 \pm 0.6	49%
BIO103	NA		
BIO105	18	1.9 \pm 0.4	50%
BIO130	42	2.1 \pm 1.0	62%
BIO210	20	2.6 \pm 0.5	90%
BIO211	22	2.0 \pm 0.6	50%
Total	139	2.1 \pm 0.7	63%

Conclusions Drawn from Data: Different GE classes scored very differently on this outcome. Only one of the classes met the criteria for success (BIO210). This assignment will be changed in the future to obtain more reliable data (see below).

Changes to be Made Based on Data: 9 Biology faculty met to score the assignments, and we first calibrated the scoring by making sure that there was inter-rater reliability with use of the rubric. Next we generally assigned 2 faculty who did not teach the class to score each class in order to have the most objectivity in the scoring; for example, BIO211 faculty scored BIO101 assignments but not BIO211 assignments. We discovered that since each class had a different

assignment, the scoring was very subjective between the different classes. For example, the lab report assignments for BIO101, 103, and 105 were much simpler than for BIO210 and 211. BIO130 was a one question assignment, and it seemed to have the most reliable scoring. Thus, we decided that for subsequent years, we will not use lab reports for our signature assessments. Instead, we will use one final exam question, which will be the same or very similar between classes, in order to evaluate this learning outcome.

Rubric: AACU Critical Thinking Rubric: Rows 1,2,4,5 for BIO101, 103, 105, 210, 211; Row 5 for BIO130.

B. PLNU General Education non-lab courses (BIO 102 and 104)

Learning Outcome: GELO 1c. Information Literacy: Students will be able to access and cite information as well as evaluate the logic, validity, and relevance of information from a variety of sources.

This outcome will be measured yearly via direct, summative assessment. Students are chosen randomly by the administration.

Outcome Measure: BIO 102 and 104 Signature Assignment: Research paper.

Criteria for Success: 70% of students will score at an average of level 2 or higher on rubric. Level 2 was chosen because these courses are both introductory courses for non-majors.

Longitudinal Data:

Class	n	Ave+S.D.	% of Students Scoring ≥ 2
BIO104	20	2.4 \pm 0.7	85%

Conclusions Drawn from Data: The students in BIO104 are successfully writing research papers using the initial stages of information literacy.

Changes to be Made Based on Data: We will also evaluate students in BIO102 next year.

Rubric: AACU Information Literacy Rubric: Rows 2,3,4