

#4. Executive Summary: Undergraduate Program Assessment: Alternative Delivery

Submit to the Assessment Committee Chair via email.

Department: Natural Sciences

Date: 6/21/2017

Course(s): Bio 111

Alternative Format(s) – select as many as are applicable:

Dual Credit

Select

Select

Select

Select

Select

Members (must include more than course instructor only) **involved with analysis of artifacts: Kyle Johnson, Robert Herman, Kristy Jurchen, Jennifer Freund**

See #3 Assessment Plan: Alternative Delivery: Student Outcomes for: a) *Course requirement evaluation; b) Student Outcome; c) Question(s); e) Methodology*

Analysis of artifacts:

1). Student Outcome: **PERFORMANCE CRITERIA*** - *How was data analyzed? (attach rubrics/scoring tools if used).*

The mean and standard deviation of student averages were calculated for CUNE and DC1. Because this data was not available for DC2, the mean and standard deviation of the number of students who got a question correct was calculated for all questions for CUNE and DC2.

2). **COMPARABILITY** – *How did you determine if the outcomes of the traditional and alternative delivery modes were comparable? (note “na” if delivery modes were not compared). Using a t-test (unpaired, two tailed for DC1 and Concordia, and a paired, two-tailed test for DC2 and Concordia), the means were compared to determine whether a statistical difference appeared. $p < 0.05$ was considered significant.*

Summary of RESULTS*:

1). *Restate the assessment question(s) (from the Assessment plan):* Do students understand basic concepts of the process of science, cell biology, biochemistry, genetics, and molecular biology, and can they apply their knowledge of these topics?

2). *Summarize the assessment results. A narrative summary is required. Charts, tables or graphs are encouraged but optional.* Concordia students scored a $61 \pm 18\%$ (mean \pm standard deviation) compared to DC1 students' $63 \pm 16\%$. Comparing the question means (average number of students who got a question correct), Concordia students scored $61 \pm 16\%$, DC2 students scored $45 \pm 21\%$, and DC1 students scored $63 \pm 26\%$. The difference between DC2 and Concordia was significant.

3). **INTERPRETATION*** - *Discuss how the results answer the assessment question(s).* Based on the assessment, on average Concordia and DC1 students understood and could apply just under 2/3rds of the concepts covered in the course. Overall, Concordia students struggled most with questions 9, 13 - 15, 17, 19, 20, and 22. These questions covered concepts related to biochemistry and cell biology. For the most part, the other schools struggled with these questions as well.

4). *Observations made that were not directly related to the question(s). (i.e. interrater reliability of the scoring tool was low)* Incomplete data was obtained from DC2I. In talks with the schools, it appears that more topics are covered at these schools than at Concordia, since the course lasts a full year at the schools and only one semester at Concordia. Additionally, a miscommunication issue resulted in DC2 receiving the final assessment after most of the topics covered in the assessment had already been covered. Although this did ensure that the instructor did not "teach to the test", the instructor may have prepared the students for this exam better if he were to see exactly how the students would be evaluated.

5). **How did the outcomes of the traditional and alternative format analysis compare?** (note “na” if delivery modes were not compared). **The difference between DC2 and Concordia was significant. The other differences were not significant.**

Sharing of Results:

When were results shared? Date: June 14, 2017

How were the results shared? (i.e. met as a department) Met as a department

Who were results shared with? (List names): Rob Hermann, Connie Callahan, Tim Huntington, Kregg

Discussion of Results –Summarize your conclusions including:

1. **ACTION***- *How will what was learned from the assessment impact the alternative format teaching of this course starting the next academic year?* Concordia and DC1 will continue to do our best to get the students to understand the material. An added emphasis will be put on topics that the students struggled with. I will discuss the results with DC2 and talk about the concepts with which the students could improve. DC2 will also have a new instructor. I will make sure that this instructor receives the assessment in a more timely manner.

2. **IMPACT***- *What is the anticipated impact of the ACTION* on student achievement of the learning outcome in the next academic year?* Due to the added emphasis on the biochemistry topics, it is anticipated that the students would do better on these questions. By having time to see how the students will be evaluated, it is anticipated that the students at DC2 will score more similarly to their peers at Concordia.

3. **BUDGET IMPLICATIONS** – *Indicate budget requirements necessary for the successful implementation of the ACTION* (i.e. an additional staff person, new equipment, additional sections of a course).* No budget implications.

Submitted via email to Assessment Committee Chair by: Kyle Johnson

Reviewed by the Assessment Committee (date): 6/22/17

Submitter notified/additional action needed: na

BUDGET IMPLICATIONS – Assessment Committee Chair notified appropriate Dean: na

Approved & Posted to Assessment site: 6/22/17