

## #2. Executive Summary: Undergraduate Program Assessment:

### Student Outcomes – Gen Ed

**Department: Natural & Computer Science Date: 5/12/17**

**Members involved with analysis of artifacts: Kent Einspahr, Kregg Einspahr, Kyle Johnson, Jen Freund, Connie Callahan, Kristy Jurchen, John Jurchen, Rob Hermann**

**See Undergraduate Program Outcome Assessment Plan: Student Outcomes – Gen Eds for: a) Learning Outcome; b) Background; c) Question(s); d) Methodology**

#### **Analysis of artifacts:**

1). **PERFORMANCE CRITERIA\*** - *How was data analyzed? (attach rubrics/scoring tools if used).*  
Artifacts were analyzed according to the attached rubric. Artifacts were sent to the faculty beforehand for review, and the departmental faculty met together and scored the artifacts through discussion and consensus

#### **Summary of RESULTS\*:**

1). *Restate the assessment question(s) (from the Assessment plan):*

Can students use effective communication techniques to accurately explain scientific ideas?

2). *Summarize the assessment results. A narrative summary is required. Charts, tables or graphs are encouraged but optional.*

We assessed 42 artifacts from four general education courses across the discipline. Of those, 2 scored a 1 (4%), 3 scored a 2 (11%), 8 (30%) scored a 3 - the minimum acceptable score, 7 (26%) scored a 4, and 8 (30%) scored a 5. Overall, 85% scored a 3 or above, meaning we met our standard of success.

3). **INTERPRETATION\*** - *Discuss how the results answer the assessment question(s).*

While we met our standard for success, 30% of the artifacts met the minimum standard, meaning we have room for improvement. Overall we felt students did an acceptable job of writing about scientific ideas, but they were weaker in using appropriate techniques (such as in-text references). This is the area we need to focus on.

4). *Observations made that were not directly related to the question(s). (i.e. interrater reliability of the scoring tool was low)* The Sci 202 artifact is a wonderful assignment, but not especially well suited to this assessment, as students were not required to explain scientific ideas in any depth. We should choose another artifact for future assessments. Our requirements for communicating scientific ideas appropriately varied from instructor to instructor - especially in terms of citing references in the text. Our Sci 365 instructor will include a requirement for this in the assignment in the future.

#### **Sharing of Results:**

*When were results shared? Date:* 5/12/17

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

*Who were results shared with? (List names):* Kent Einspahr, Kregg Einspahr, Kyle Johnson, Jen Freund, Connie Callahan, Kristy Jurchen, John Jurchen, Rob Hermann

#### **Discussion of Results –Summarize your conclusions including:**

1. **ACTION\***- *How will what the department learned from the assessment impact the teaching process/course/program etc. in your department starting the next academic year?*

Because the assessment showed that students can already explain scientific ideas correctly, we are not going to make significant changes. We are going to emphasize correct citation style for in-text citations, as this was the most widely-noticed problem in the artifacts.

2. **IMPACT\***- *What is the anticipated impact of the ACTION\* on student achievement of the learning outcome in the next academic year?*

Students will continue to be able to explain scientific ideas correctly, and they will improve in their ability to cite references.

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).* None

***If action is taken – it is recommended that the same learning outcome and assessment plan be used for a second assessment cycle.***

***What assessment questions related to the learning outcome would the program like to investigate in the future? We will assess the same question for another year, in order to have more than one assessment cycle for the question. We were concerned that the selection of the artifacts could have biased the results. (If by chance too many high quality examples were chosen, for instance.)***

**Submitted by: Robert Hermann  
(date): 5/16/17**

**Reviewed by the Assessment Committee**

**Department Chair notified/additional action needed: na**

**BUDGET IMPLICATIONS – Assessment Committee Chair notified appropriate Dean: na**

**Approved & Posted to Assessment site: 5/16/17**