

EWU Programmatic SLO Assessment

Degree/Certificate: Middle-level Science Endorsement

Major/Option: Natural Science

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Part I – Program SLO Assessment Report for 2015-2016

1. **Student Learning Outcomes I and V: Understands the process of science; understands the process of learning science through inquiry**
2. **Overall evaluation of progress on outcome:** Indicate whether or not the SLO has been met, and if met, to what level.

_____ SLO is met after changes resulting from ongoing assessments, referencing assessment results from the previous year to highlight revisions;

_____ SLO is met, but with changes forthcoming;

___X___ SLO met without change required

3. **Strategies and methods:**

External assessment involved using student's scores on West E Domain IV: Science Process and Inquiry. Internal assessment was conducted during NTSC 390, which is a required senior level class taken towards the end of their program. Various assignments require use and understanding of science processes and inquiry. The data used was a culminating project which requires the students to develop and implement a science inquiry lesson for multiple Next Generation Science Standards (NGSS).

4. **Observations gathered from data:**

- a. Findings:

External West-E

5 students took the exam and all 5 passed. Students did best on this domain averaging 3.6/4 or 90% on those questions.

Internal Data

Of the 6 students in NTSC 390, all students passed with an average grade of 88%.

- b. Analysis:

All students in the program are required to take at least one inquiry course and most take all three. (Some students are allowed to substitute a course with high amounts of lab for up to 2/3 of the inquiry classes). All our students are passing the science processes and inquiry assessments and meeting this SLO.

5. **What program changes will be made based on the assessment results?**

- a) Describe plans to improve student learning based on assessment findings (e.g., course content, course sequencing, curriculum revision, learning environment or student advising). **We are satisfied with student performance in this area.**
 - b) Provide a broad timeline of how and when identified changes will be addressed in the upcoming year. **No changes warranted and confirms that our inquiry classes are working.**
6. Description of revisions to the assessment process the results suggest are needed and an evaluation of the assessment plan/process itself. **None.**

1. **SLO II, III, IV – We have grouped these three standards together as they are integrated in our courses.**

Student Learning Outcome II: Understands how energy and matter flow through physical, life and earth systems.

Student Learning Outcome III: Understands the evolution of a natural system and factors that result in evolution or equilibrium.

Student Learning Outcome IV: Understand how systems are organized.

2. **Overall evaluation of progress on outcome:** Indicate whether or not the SLO has been met, and if met, to what level.

- SLO is met after changes resulting from ongoing assessments, referencing assessment results from the previous year to highlight revisions;
- SLO is met, but with changes forthcoming;
- SLO met without change required

3. **Strategies and methods: WEST-E Data on Middle Level Science:**

4. **Observations gathered from data:**

Findings: **Five students took the exam during 2015/2016. All 5 students passed the exam. The following table identifies the averages on the content domains:**

Domain	Average (n=5)
D1 – Physical Sci	2.4
D2- Earth/Space Sci	2.8
D3- Life Science	3.0
Average on Content section	2.7

* 2.0 up to 2.99 = represents the knowledge and skills of a candidate that is possibly ready to teach

3.0 and higher = represents the knowledge and skills of a candidate who is ready to teach

Analysis of findings: **There was a significant improvement on the content section of the exam for 2015/2016. We think this is because the Dpt. of Educ. did not allow students to proceed with student teaching if they did not pass the exam. We think students therefore took the exam more seriously. Furthermore, we have better aligned our upper level courses with the west E exam. Despite this success, we think that student performance is too low (average of 67% on these questions). This further supports our conclusions from last year's assessment report, that our students require more courses and should be in with majors in each of the specific domains for some of their classes. Our new program launches this fall and it will be interesting to see how students do next year.**

5. What program changes will be made based on the assessment results?

Describe plans to improve student learning based on assessment findings (e.g., course content, course sequencing, curriculum revision, learning environment or student advising). **Students in our program will now take 10 hours with each of the majors in biology, earth science, and physics.**

Provide a broad timeline of how and when identified changes will be addressed in the upcoming year. **Program changes will be implemented this fall, 2016.**

7. Description of revisions to the assessment process the results suggest are needed and an evaluation of the assessment plan/process itself. **As of September 1, 2016, all students will be taking the NES Middle Level Exam instead of the West E exam. All students have to get a 2.0 or better in all of our classes with a mean of 2.5.**

NEW: PART II – CLOSING THE LOOP

FOLLOW-UP FROM THE 2014-2015 PROGRAM ASSESSMENT REPORT

In response to the university's accrediting body, the [Northwest Commission on Colleges and Universities](#), this section has been added. This should be viewed as a follow up to the previous year's findings. In other words, begin with findings from 2011-12, and then describe actions taken during 2012-13 to improve student learning along, provide a brief summary of findings, and describe possible next steps.

Working definition for closing the loop: *Using assessment results to improve student learning as well as pedagogical practices. This is an essential step in the continuous cycle of assessing student learning. It is the collaborative process through which programs use evidence of student learning to gauge the efficacy of collective educational practices, and to identify and implement strategies for improving student learning.* Adapted 8.21.13 from <http://www.hamline.edu/learning-outcomes/closing-loop.html>.

1. **Student Learning Outcome(s)** assessed for 2013-14 **All the same SLOs as above.**
2. Strategies implemented – **Our program changes passed CPAC and are being implemented this fall.**
3. **Summary of results** (may include comparative data or narrative; description of changes made to curriculum, pedagogy, mode of delivery, etc.): Describe the effect of the changes towards improving student learning and/or the learning environment. **Students have improved their performance on the WEST-E exam.**
4. What further changes to curriculum, pedagogy, mode of delivery, etc. are projected based on closing-the-loop data, findings and analysis? **None at this time but we will be watching student performance closely both in classes and on their certification exam (NES for 2016/2017). As part of our re-approval process with the state Professional Education Standards Board (PESB), we did make changes during this last school year to the program (see above) including changing the SLOs (effective fall 2016). These new SLOs will be assessed starting in the 2016/17 annual program assessment.**

Definitions:

1. **Student Learning Outcome:** The student performance or learning objective as published either in the catalog or elsewhere in your department literature.
2. **Overall evaluation of progress on outcome:** This checklist informs the reader whether or not the SLO has been met, and if met, to what level.
3. **Strategies and methods used to gather student performance data,** including assessment instruments used, and a description of how and when the assessments were conducted. Examples of strategies/methods: embedded test questions in a course or courses, portfolios, in-class activities, standardized test scores, case studies, analysis of written projects, etc. Additional information could describe the use of rubrics, etc. as part of the assessment process.
4. **Observations gathered from data:** This section includes findings and analyses based on the above strategies and methods, and provides data to substantiate the distinction made in #2. For that reason this section has been divided into parts (a) and (b) to provide space for both the findings and the analysis of findings.
5. **Program changes based on the assessment results:** This section is where the program lists plans to improve student learning, based on assessment findings, and provides a broad timeline of how and when identified changes will be addressed in the upcoming year. Programs often find assessment is part of an ongoing process of continual improvement.
6. **Description of revisions to the assessment process the results suggest are needed.** Evaluation of the assessment plan and process itself: what worked in the assessment planning and process, what did not, and why.

Some elements of this document have been drawn or adapted from the University of Massachusetts' assessment handbook, "Program-Based Review and Assessment: Tools and Techniques for Program Improvement" (2001). Retrieved from http://www.umass.edu/oapa/oapa/publications/online_handbooks/program_based.pdf

