

EWU Programmatic SLO Assessment
AY 2013-14 and “Closing the Loop” for AY 2012-13

Degree/Certificate: BAE

Major/Option: Earth & Space Science Major

Submitted by: Sharen Keattch

Date: November 6, 2014

Part I – Program SLO Assessment Report for 2013-14

Part I – for the 2013-14 academic year: Because Deans have been asked to create College-Level Summary Reports annually, the template has been slightly modified for a) clarity for Chairs and Directors, and b) a closer fit with what the Deans and Associate Deans are being asked to report.

1. **Student Learning Outcome:** The student performance or learning objective as published either in the catalog or elsewhere in your department literature.

Students will be able to plan and implement Earth and Space science lessons aligned with the national and state standards; construct and use effective assessment strategies.

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:** Description of assessment method and choices, why they were used and how they were implemented.

Both internal and external program assessments were used to evaluate this SLO.

Internal assessment:

Two assignments within GEOL 390 are used to assess the selected SLO, since this class only enrolls students who will be teaching Earth and Space Science and the course is taken during the senior year.

- i) Students are required to plan an earth and space science 5-E lesson that will meet a randomly selected Washington State Science EALR (Essential Academic Learning Requirements). These are already aligned with the national standards. As part of this assignment they are required to create both formative and summative assessment strategies. This lesson is then implemented with their peers thereby providing assessment of the entire SLO. Different aspects of the SLO were graded separately in two rubrics to allow better analysis of the various parts of the SLO.
- ii) In a separate assignment, students create a formative assessment for an earth or space science Washington State Standard. The assessment is in the form of a probe made to uncover common misconceptions in their content area. The assignment assesses both parts of the SLO by requiring them to construct an effective strategy for a state content standard.

External assessment:

The edTPA was used as the external assessment tool, even though only two students completed it since data has started to be reported. Rubric 5 in this assessment measures planning assessments to monitor and support student learning.

4. **Observations gathered from data:** Include findings and analyses based on the strategies and methods identified in item #3.

a. Findings:

Internal Assessment

Assignment i) The average score for the 5-E lesson plan portion of the exercise was 86% (n= 15). This combines both the planning and assessment pieces of their lesson aligned with the Washington State Standard. The grade can be further broken down into their formative and summative assessments created for their lessons, which averaged 82%. The presentation component assessed implementation of their lesson and had an average grade of 91%.

Assignment ii) Average grades for the entire probe (formative assessment) were 83% (n=15). All students met the individual part of the rubric assessing alignment with the state standard.

External Assessment

The individual scores from the edTPA were 3 and 4, where a 3 or higher represents the knowledge and skills of a candidate that is ready to teach.

b. Analysis of findings:

The combination of the above findings, suggest that we are meeting both parts of this particular SLO. All students passed both the internal and external assessments of 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).

Since adoption, the Next Generation Science Standards have started to be incorporated in school districts within Washington State. Eventually these will replace the Washington State Science Standards. As a result we have been modifying assignments to assess alignment of lessons to these new standards. No other changes are warranted at this time.

- b) Provide a broad timeline of how and when identified changes will be addressed in the upcoming year.

In fall 2014 we already started implementing the above described changes and expect to continue with the NGSS alignment.

6. Description of revisions to the assessment process the results suggest are needed and an evaluation of the assessment plan/process itself.

All pre-service teachers are now required to take the West-E before student teaching and all edTPA results will be reported in the future. It is hoped that as a result of this, we will have a larger pool of data to assess the program externally.

NEW: PART II – CLOSING THE LOOP
FOLLOW-UP FROM THE 2012-13 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 2012-13, and then describe actions taken during 2013-14 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 2012-13

Students will demonstrate an understanding of various methods of science inquiry.

2. Strategies implemented during 2013-14 to improve student learning, based on findings of the 2012-13 assessment activities.

The only strategies implemented were in the revision of the assessment process itself. In our internal assessment (Geol 390), the inquiry piece was separated out in the assessment of their 5-E lesson and presentation.

This year we were able to add external assessments having access to both West-E and edTPA data. The earth science West-E exam assesses students' knowledge of science inquiry and science practices in domain 5. Rubric 1 in the edTPA assesses how candidate's plans build students' abilities to use science concepts and scientific practices during inquiry to explain real-world phenomenon.

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.

We continue to struggle using the West-E to assess inquiry due to low numbers of students taking the exam. During the 2013-14 year, only 4 students took the Earth Science West-E exam. The domain scores that assess science inquiry averaged a 2.5. Where a score of 2

means the student answered some of the questions correctly or the response was limited and a 3 represents students answering many of the questions correctly and their responses were adequate.

Ed TPA data was not reported before Winter 2014 since this is when complete implementation started. Only two students have taken the edTPA since that time, both students exceeded the level of knowledge and skill required to teach science inquiry.

4. What **further changes to curriculum, pedagogy, mode of delivery**, etc. are projected based on closing-the-loop data, findings and analysis?

All pre-service teachers are now required to take the West-E before student teaching and all edTPA results will be reported in the future. It is hoped that as a result of this, we will have a larger pool of data to assess the program externally.

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