EWU Programmatic SLO Assessment

Degree/Certificate: Middle-level Science Endorsement BAE

Major/Option: Natural Science
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Part I – Program SLO Assessment Report for 2012-13

1. Student Learning Outcome I: Understands the process of science

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;
   
   _____X____ SLO is met, but with changes forthcoming;
   
   _____ SLO met without change required

3. Strategies and methods: Students learn this process in the 115 series by engaging in inquiry learning nearly every day. Students are externally assessed on the WEST-E Middle Level Science examination, which disaggregates the data for inquiry. Not all students in our program actually try to take the WEST-E as they can be hired to teach K-8 with the elementary endorsement. Our conclusions are based on two years worth of WEST-E data where we compared the courses taken by students with their performance in those courses and how they performed on the WEST-E exam.

4. Observations gathered from data:
   
   a. Findings: All students who passed the WEST-E, also passed the inquiry portion of the WEST-E. Only one of the students who did not pass the WEST-E passed the inquiry portion.

   b. Analysis of findings: The majority of students who do well on this section of the WEST-E have taken 2 or more of the inquiry courses (BIOL115, GEOL115, PHYS115)

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). To try to increase the number of individuals passing the WEST-E, we are submitting program changes to CPAC that require all students to take all three of the inquiry sequence (BIOL115, GEOL115, and PHYS115).
b) Provide a broad timeline of how and when identified changes will be addressed in the upcoming year. If our program revisions pass CPAC in November, we will implement in Fall of 2014 though we are recommending the changes now to our advisees.

6. Description of revisions to the assessment process the results suggest are needed and an evaluation of the assessment plan/process itself. We have no control over the WEST-E exam but we do feel that the high standard demanded by the WEST-E ensures that only the best students in our program are receiving the Middle Level Endorsement. Students who fail may still be hired to teach middle school but are more likely limited to teach K-5. Our efforts are to try to increase the number of students who qualify for the middle level endorsement.

SLOs II, III, IV – These are grouped together because they are generally assessed by the same WEST-E test which only gives scores for subject domain, not these cross-cutting concepts.

1. 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;
   _____X_____ SLO is met, but with changes forthcoming;
   _____ SLO met without change required

3. Strategies and methods: Students learn these concepts through their coursework. They are externally assessed on the WEST-E Middle Level Science examination by domain (physics, earth science and life science).

4. Observations gathered from data:

   Findings: Approximately 50% of the students taking the WEST-E over the past two years have failed. This is the same rate as the state.

   Analysis of findings: We have determined that students that fail in one domain of science on the WEST-E, tend to fail in the other domains as well. Also we found a strong correlation with their GPA in the NTSC 301, NTSC302 and the chemistry class with their performance on the exam.
Finally our top students were more likely to have taken a higher chemistry either in high school or at the university. In reviewing the standards tested on the WEST-E, we have determined that our curriculum should be strengthened by requiring a higher level chemistry course (CHEM161 instead of CHEM100), adding a course in weather and climate (GEOG314 Climate and Weather), a course regarding science and society (BIOL320 Human Prospect) and requiring the chemistry course as a pre-requisite for both the NTSC 301, 302 and 390 courses.

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). We have submitted said changes in #4 above to CPAC. By the way, these changes along with those stated above will increase our requirements over those at comparable programs at WSU and CWU.

   Provide a broad timeline of how and when identified changes will be addressed in the upcoming year. Implement in Fall of 2014.

6. Description of revisions to the assessment process the results suggest are needed and an evaluation of the assessment plan/process itself. We think the WEST-E is a valid assessment tool for external evaluation of our program. We need to keep in mind as well that just as only a small percent of people taking premed programs actually get into med school, the WEST-E is ensuring that only the best of our students become middle school teachers.
NEW: PART II – CLOSING THE LOOP
FOLLOW-UP FROM THE 2011-12 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 2011-12** All the same SLOs as above.

2. **Strategies implemented** during 2012-13 to improve student learning, based on findings of the 2011-12 assessment activities. Last year we focused on assessments made internally in our courses but though we had evidence that students had achieved these SLOs we still had a high flunk rate on the WEST-E. Our report this year is addressing the failure of some students to pass the West-E.

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 have been proactive this year in trying to get students to take the courses we are requesting for program change this year.**

4. What **further changes to curriculum, pedagogy, mode of delivery**, etc. are projected based on closing-the-loop data, findings and analysis? **We will continue to collect data on our students to see if upcoming changes to our program result in increased percent passage of the WEST-E.**

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