Environmental Education: SLOs 5 and 6
Within the context of Spring Block 2014-2015
prepared by Prof. Nick Stanger

Student Learning Objectives being assessed:

• EE 5 facilitate learning about the environment and about issues and problems of human-environment interactions using a variety of instructional and communicative methods.

• EE 6 assess and evaluate the outcomes of environmental education instruction programs.

The Assessment plan for this program states that this information will be used in this way:
Summary results of the analysis of student products and instructional performance according to a set rubric was done by course instructors and presented to program faculty. This information will be discussed and acted upon by course and program faculty over the 2015/2016 academic year.

This assessment pertains to the experience of students within the Environmental Education Major’s Spring Block. In particular, Spring Block Original Lesson delivery & whole curriculum delivery (the latter includes instructed elements in addition to original lesson) will be assessed for use of effective experiential instructional methods & written, oral and visual communication techniques.

SLO EE5

To assess SLO EE 5, 18 original lesson plans created by Spring Block EE major students and the associated feedback by teachers and TA were evaluated and rated on several criteria. These criteria were used as the rubric:
• creative use of place (including the ecological, environmental, geological, and/or sociological aspects)
• realistic and Measurable Outcomes (with focus on original intent and evaluative aspects of the original lessons)
• use of multiple entry points to learning (or the acknowledgement of the limitation of entry points or learning styles)
• appropriate balance of natural and sociological orientations to content

For each of these criteria, each student’s paper was rated using this scale:
0= absent
1= present implicitly or unelaborated
2= explication, understanding, application
3= generalization, transfer, synthesis, evaluation
Table 1. The analysis for SLO EE 5 revealed the following mean scores

<table>
<thead>
<tr>
<th>SLO EE5 Criteria</th>
<th>Mean</th>
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<tbody>
<tr>
<td>Creative use of place (including the ecological, environmental, geological, and/or sociological aspects)</td>
<td>2.33</td>
</tr>
<tr>
<td>Realistic and Measurable Outcomes (with focus on original intent and evaluative aspects of the original lessons)</td>
<td>2.11</td>
</tr>
<tr>
<td>Use of multiple entry points to learning (or the acknowledgement of the limitation of entry points or learning styles)</td>
<td>2.17</td>
</tr>
<tr>
<td>Appropriate balance of natural and sociological orientations to content</td>
<td>1.33</td>
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</tbody>
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It should be noted that these results are based on the analysis of original lesson plans before being taught, with a careful consideration of notes and remembered experience of the taught lessons. With this inclusion of qualitative data the means values shown above resemble an accurate evaluation of the quality of lessons as they relate to EE5. Notice that the criteria that achieved the highest mean represents the place-orientation of the lesson, suggesting that the EE Majors were relatively good at engaging place-based techniques within their original lesson plans. Almost all of the outcomes and evaluation written into the lesson plans were present, and written in a way that were measurable. Further work to engage students in providing realistic lesson goals that are explicit will be needed in the future. Many students articulated multiple ways of knowing or entry points into teaching for diverse learners. What was missing from this criteria was the rhetoric of why the approaches taken were appropriate to meet the goals and outcomes of the lessons. Finally, the acknowledgement of human-nature interactions was rarely considered, and very few students explicitly (or implicitly) articulated the sociological environmental interactions occurring within their topic area.

**SLO EE6**

The assessment of this outcome was done by considering the feedback on the curriculum delivery given by the students and the feedback that they received on their work. Of the 18 students who are identified as environmental majors in the program, each of them delivered original lesson plans with success.

Three more criteria were introduced to explore SLO EE6:
- engaging teaching techniques employed
- responded to needs of the student body and determined student achievement
- adapted to include constructive feedback of TAs and instructor

The same three point rating system was used to measure these criteria as above.
Table 2. Analysis for SLO EE 6 revealed the following mean scores:

<table>
<thead>
<tr>
<th>SLO EE6 Criteria</th>
<th>Mean</th>
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<tbody>
<tr>
<td>Engaging teaching techniques employed</td>
<td>2.39</td>
</tr>
<tr>
<td>Responded to needs of the student body</td>
<td>2.22</td>
</tr>
<tr>
<td>Adapted to include constructive feedback of TAs and instructor</td>
<td>1.83</td>
</tr>
</tbody>
</table>

Spring Block 2015 students tended to focus on active and diverse teaching techniques, with engaging, entertaining, and fun pedagogical approaches. Within this, they were seen to adapt to the needs of the students for the majority of the time. However, sometimes this adaptation was inadequate to adapt the lesson in situ. This skill requires repetitive practice. Students seldom effectively assessed student achievement in the context of the lesson. Finally, many students chose not to incorporate the feedback from TAs or instructors for their lessons or did not provide a reason why they decided to not incorporate the feedback. Effective feedback processes can be particularly challenging for students who feel that they are already good at what they do, or conversely, nervous about trying new and different approaches.

**Closing the Loop on EE5 and EE6**

The analysis of student learning outcomes lead to the following recommendations:

1. Provide richer and more detailed instruction and feedback about the quality of goals- and outcome-writing;
2. Increase the learning opportunities for EE students around diverse teaching techniques that engage different learning styles, intelligences, and entry points into learning. This will also require better analysis of these techniques to understand the reasons behind their approach;
3. Explicitly focus on the socio-ecological and nature-human interactions as part of the instructions around the lessons such that, where appropriate, students teach and write about the bridges between human and sociological interactions with the natural history processes or species being discussed;
4. Provide group discussion and evaluative structures to engage students in paying attention to their relationships with students and in situ adaptation of lesson and determination of student learning; and
5. Develop a systematic feedback process that is transparent and respectful, where students may engage in meaningful feedback support for the adaptation of their lessons.

Upon consultation with other program faculty for Spring Block 2016 these will be addressed in part by, respectively:

1. Redeveloping the Syllabus to reflect the recommendations above;
2. Focus some more attention on learning styles, lesson plan creation, and student engagement within the Winter Curriculum class ENVS 382; and
3. Evaluate all the EE major courses and syllabi to ensure clear focus on the socio and natural history interactions as important to consider within this degree.