

FIRE-UP Institute 2011
ASNS Program Learning Outcomes Assessment
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Faculty participants: Wendy Kuntz (Biology), Amy Patz-Yamashiro (Physiology), Naresh Pandya (Chemistry), Matt Fleming (Mathematics & Pre-engineering), Maile Lam (Biology), Charles Matsuda (Biology), Dan Brayton (Chemistry), Mackenzie Manning (Biology), Tim Brilliance (Biology), Teena Michael (Biology), John Berestecky (Microbiology), Mohamed Aghili (Pre-Engineering), Maria Bautista (Physics, Department Chair).

Morning training and assessment of at least ten out of forty-seven choices of artifacts from ASNS students:

1. Training for use of ASNS STEM rubric was conducted for norming and discussion of the rubric definitions in the early part of the day to refresh and orient faculty.
2. Forty-seven learning artifacts were available for STEM faculty to assess via the e-portfolio FIRE-UP Lulima data management system.
3. Thirteen STEM teachers were present and were asked to assess a minimum of ten artifacts out of the forty-seven in the morning. After each assessment, faculty submitted their rankings and comments to an online data collection system. Subjective analysis was collected for individual rationale and considerations for each artifact's ranking.
4. The ASNS STEM rubric, approved by Math Science faculty in December 2009, was used.
5. A data collection excel file of the 124 assessments collected was provided for the afternoon discussion.
6. Four groups of faculty were then asked to discuss their rankings, especially of the artifacts' rankings where there was a disparity of ranking. Healthy discussion and agreement ensued when the groups revisited artifacts. These discussions were captured via facilitators Amy Patz-Yamashiro and Susan Inouye.
7. Results:

Ranking Options

- 0= Not Meeting--No evidence of routine expertise or acquiring scientific literacy
- 1= Approaching--Shows evidence of routine expertise and acquiring scientific literacy (first-year students)
- 2= Meeting--Shows evidence of adaptive expertise, uses scientific literacy in communicating hypothesis driven inquiry and research (second-year students)
- 3= Exceeding--Transfer ready, uses adaptive expertise in communicating to community and public audiences (interns, ready for third-year work)
- na=Not applicable

Average of Ranking of 47 artifacts for each STEM Outcome

Communication	Critical Thinking	Disciplinary	Self and Community
2.0	1.9	Integration	1.6
		1.9	

The STEM Program Learning Outcomes are clearly being met from these rankings. The lowest score, Self and Community, should be subject to further analysis. Faculty felt the outcome could be better defined with examples, or integrated into other outcomes as curriculum decisions evolve learning resources are developed in the STEM program.

Afternoon two-hour follow-up discussion of ASNS STEM LOA Process and Outcomes

Capture of feedback on the process used in Assessment of ASNS STEM Learning Outcomes

Questions:

1. Should we consider evaluating more artifacts in order to capture ASNS as a whole because this sample [47 artifacts] is not representative of the 400+ ASNS students?
2. Should we look at exams?
3. Should we align course level outcomes with ASNS Outcomes?
4. Is the purpose of assessment just to satisfy ACCJC, or should we be looking at other reasons?

Comments

5. Assessment should not supersede pedagogy and not be a huge burden on students & faculty
6. Artifacts only pulled from ASNS majors (declared); some students don't declare ASNS b/c planning to transfer
7. See other schools: example would be exit exams
8. The current system showcases the work of the best students. This may be a bad thing. Show the integrative experience.
9. Support Undergraduate Research Experience (URE) as an important opportunity for students + assessment = synergy
10. If there is a complaint about lack of diversity of projects, we need to expand opportunities.
11. Tracking success of transfer students is important – this is the ultimate assessment, so needs to be a priority.
12. This process allows faculty members to see projects of students that would not be otherwise seen. This is good. (Faculty members were impressed by projects.)
13. Survey graduates, another option for assessment. Problem: survey response rate is low.
14. Self & Community: “express knowledge...” - maybe this one belongs under communication; include reflective papers for SL as artifact? Distill self & comm. into a single outcome?

Feedback on Outcomes

Should research project be required for ASNS degree?

The Instrument:

- Can't prevent some bias since assessors are faculty members who may know the student.
- Self & Community Outcome: probably needs to be re-written. Difficult to interpret.
- Self & community: if topic lends itself to self & community but it is not mentioned, do they get dinged?
- Context of artifacts could be included on Laulima
- Communication: depended upon which outcome was focused on. Do we look at discrete items or integrate?
- We don't know the instructions/context of artifacts
- Poster guidelines should be provided to the URE instructors
- But some of the learning happens by making mistakes
- More training with examples of how to use rubric
- It has been good to discuss with cross-disciplinary faculty members
- Outcome Revision:
 - o Assess each item?
 - o Take an average with a category
 - o Or flesh out rubric for each level

High Points:

- “I'm impressed with the quality of work from our students”
- As a dept., we need poster guidelines
- We should work reflection into the poster for metacognition
- Should there be a written paper to accompany the poster? Does this ask too much of a student? Would students have to do a literature review?
- Making a course WI would help you implement writing
- Posters are a type of paper at scientific meetings
- Lots of experimentation goes on before the poster
- Students have complex lives – this is a huge amount of work
- Posters are graduate school work – PhD level – then it becomes a paper
- Have a poster session on campus
 - o Faculty attends poster session w/ rubric – assess minimum number of posters
 - o Faculty see poster and student in context
 - o Getting students to speak and defend themselves is an important skill
- Once they leave us, engineering students need to write 20 page lab reports, but not our students.