Identify Learning Evidence for Program-level Assessment Uses

*a workshop on program learning outcomes assessment*

by Monica Stitt-Bergh

When conducting program-level assessment of student learning, programs investigate whether students learned what faculty expected them to learn. But what evidence of learning should the program collect? Options range from students’ research reports to oral presentations/defenses to licensing or other exams administered by an external organization.

In this workshop, participants will learn how to

• select appropriate pieces of evidence that demonstrate student learning using the program’s learning outcomes and curriculum map; and,
• decide whether to collect from a sample of students or all students.
• Participants will leave with a feasible plan that they can discuss with colleagues and implement.

**Level:** Beginner  
**Format:** Demonstration, activity, Q&A  
**Date/time/location:** Thursday, March 12, 2015, 2:00 pm - 3:15 pm, KUY 106

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Slide 2

Session Outcomes

You will be able to
• select appropriate pieces of learning evidence and
• decide whether to collect from a sample of students or all students.

You will leave with
• a feasible plan to discuss with colleagues and implement.

Slide 3

Agenda

• Assessment cycle
• Learning evidence defined
• The verb game
• Types of evidence
• Your friend, the curriculum map
• To sample or not to sample
• Pick a piece & create a plan
Purpose of assessment

Program improvement, evolution, celebration

not individual evaluation or individual personnel decisions
This is the typical assessment cycle. First faculty state what they want student to learn. Then, they examine the curriculum and ensure students are given sufficient opportunities to increase their knowledge and skill on the learning outcomes in courses and other degree requirements such as the dissertation and internships. Third, faculty collect evidence to determine how students overall—as a whole—are meeting faculty expectations for learning on each learning outcome. Fourth, faculty in the program evaluate and interpret the evidence in order to guide program-level decisions. The results from the assessment of student learning are used for program improvement or program evolution.

Today’s session is on collection of evidence: what should be collected, from whom, and from how many?
Evidence of Learning: Yes or No?

Multiple choice exam questions

[SLO = student learning outcome]

What can faculty use as evidence that students learned? What can faculty use to determine whether students have met their learning expectations?

Can a multiple choice exam provide evidence of student learning? Yes.
Evidence of Learning: Yes or No?

End-of-course evaluations (eCAFÉ)

Can eCAFÉ? (end-of-course evaluations) No.

Evidence of Learning: Yes or No?

Lab report

Can a lab report? Yes.
Evidence of Learning: Yes or No?

Exit survey

Can an exit survey. No.

Slide 10

Learning Evidence

Students' actual behaviors or products

Demonstrates the actual learning that has occurred relating to a specific content or skill (i.e., the SLO)

Learning evidence consists of students' actual behaviors or products. The behavior or product demonstrates the actual learning that has occurred relating to specific content or skill—the student learning outcome.
Learning Evidence

Students' actual behaviors or products

Demonstrates the actual learning that has occurred relating to a specific content or skill (the SLO) (not student perceptions)

“direct assessment”

You may also hear this type of evidence called “direct assessment” or “direct evidence.”

“Indirect assessment” or “indirect evidence” refers to students’ perceptions of whether they learned, typically gathered through surveys, interviews, focus groups.
**Learning Evidence**

**Students' actual behaviors** or products

Demonstrates what actually happened relating to a specific content or skill (the SLO) (not student perceptions or self-evaluations)

Tip: Behaviors can be observed and evaluated by faculty or other expert (e.g., internship supervisor)

Faculty are well acquainted with evaluating products such as exams, written papers, etc.

It’s also possible to evaluate student behaviors—team work, workplace etiquette, laboratory procedures, demonstrations of caring.

The key is that students produce something or do something that an expert can evaluate. We do not rely on students’ perceptions; we ask them to perform or produce and have an expert evaluate the quality.
Values, dispositions, attitudes

respect, caring, curiosity, ethical, perseverance

There is a special case of SLOs, however. You may have a SLO that pertains to values, disposition, attitudes.

Learning evidence may be gathered through these means:
- Observation of behavior
- Tracking of attendance at events
- Collection of homework revisions or drafting process completed as part of a writing assignment
- Collection of written reflections, academic journals

This is also the one time that a survey may be advisable because of the difficulties of collecting affective SLO data via other means. Observation of behavior is better, but if that’s not feasible, a survey can help provide evidence.

For knowledge and skill SLOs, please do not use a survey because faculty need to determine the quality of learning and expert judgement of student performance is needed. Reserve surveys for the hard to measure, affective SLOs.
Types of evidence

(handout)

Take a look at the handout: types of evidence. There are many different ways students can demonstrate achievement on your student learning outcomes.

Use the SLO’s verb as a guide
(or change the SLO verb)

SLO = student learning outcome

To decide what type of evidence is appropriate, start with the verb in the SLO.

Or, the program can change the SLO verb if, upon reflection, it does not ask students to do what you really want them to be able to do.

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Turn the SLO into a question. Use the SLO’s verb to identify appropriate evidence.

How well can students ________________________?
   describe major theories

The process is simple. First, turn the SLO into a question: “How well can students ________________________?”

Then, think about how students can demonstrate that action.

The verb becomes very important. If the faculty want students to identify, they look for evidence in which students identify. Multiple-choice exams or matching-type questions on an exam are two types of learning evidence that are extremely appropriate if the desired learning outcome is identification.

If faculty want students to critically evaluate, they look for evidence in which students show their skill in critically evaluating. It’s much harder to measure critical evaluation via closed-ended questions on an exam. The faculty needs to think about how students can demonstrate this skill.

That leads us to the verb game. What type of evidence lends itself to each verb? Use your best judgment. [handout]
After you have an idea of what kinds of evidence are appropriate for the SLOs, the program looks at the curriculum map. The curriculum map helps identify locations where students have opportunities to demonstrate mastery of the SLOs.

Each program has a curriculum map. They are uploaded with the annual assessment reports to the AO website.

A curriculum map or an activity matrix (co-curricular programs) is a matrix with program requirements in the first column and the SLOs in the subsequent columns. A check mark or other mark in a cell indicates that in the course/experience, the professor gives significant, explicit attention to that outcome so that students have opportunities to improve and better achieve the outcome.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>SLO 1</th>
<th>SLO 2</th>
<th>SLO 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRS 301</td>
<td>Introduce</td>
<td></td>
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<tr>
<td>CRS 302</td>
<td>Reinforce</td>
<td></td>
<td>R</td>
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<tr>
<td>CRS 430</td>
<td>R</td>
<td></td>
<td>R</td>
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<tr>
<td>CRS 480</td>
<td>Master &amp; Assess</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>CRS 490</td>
<td>M &amp; A</td>
<td>M &amp; A</td>
<td></td>
</tr>
<tr>
<td>Internship</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>
In this case, there are two required courses and one experience that the program has already identified as locations where assessment for program-level decision-making can take place.

Note: students in these courses and the internship are being evaluated by the professor and internship supervisor for course-level evaluation and course grades. Program-level assessment turns that evidence into multi-purpose evidence: the student evidence is for both course-level and program-level purposes. The individual student results are aggregated so the program gets an overall picture of student learning and thus can make program-level decisions about the curriculum.
Tips
1. Use existing student products
2. Tweak assignment/exam to align with SLO
3. Use a common evaluation tool (e.g., rubric)

Efficient
Meaningful
Motivated students

Following these tips makes program assessment of student achievement on the SLOs efficient because it draws upon what is already happening in the curriculum. The process is meaningful because the assignment or exam is designed to give valuable information to the program about learning they care about and uses a common evaluation tool that was collaboratively developed by the faculty. Students are motivated because the assignment/exam/activity is part of their course grade so they have motivation to do well, versus an external exam that does not help the student in any way.
Sampling – taking a bite or a little of something in order to draw conclusions about the whole. In the case of this apple, how many bites do you need to be able to make a reasonable conclusion about quality?

With students in your program, what do you need to collect and from whom in order to make a trustworthy, reliable conclusion about the quality of student learning?

Remember that the goal of an assessment project is usable information. The program needs information that is trustworthy, reliable, and can be used for program-level decisions. How many students are needed before the program is confident that it has an understanding of overall student quality of learning?
Here’s a general guideline: if your program graduates 30 or fewer students each year, the program should consider evaluating 100% of the graduating seniors. If the program has more than 30 graduates each year, consider sampling.

Other factors to consider:
-- type of evidence collected. Written projects take more time to evaluate than multiple-choice exams. You can collect and evaluate more students’ multiple choice exams than written projects, oral presentations, etc.
-- number of faculty in the program. More faculty means you can collect more student work.
-- the culture of faculty in your program.
-- where the graduating students are – in one course? Completing a dissertation?

If the item to be evaluated is a student project like a research paper and if faculty get together to evaluate student products, as the Hawaiian Studies faculty did, plan on collecting a smaller number of student products. In my experience, it takes a faculty member on average 15 minutes to apply a rubric to an undergraduate student’s research paper. So, if the program can recruit 6 faculty members to spend 90 minutes evaluating student products, that’s 36 students if each student product is evaluated by only one faculty member.
Random sample

Excel formula
=RAND()

Random selection is preferred if the program plans to collect information from a sample of students. You can use Excel to generate a random number for each student and then select the 20-30 students with the lowest randomly-generated numbers.
Recap

- Use the SLO’s verb to identify appropriate learning evidence
- Use the curriculum map to identify courses/experiences from which to gather evidence
- Consider sampling if over 30 degrees earned annually
- Random sample preferred

Efficient & meaningful – do what matters; do what works for your program

Recap

Two resources on the AO webpage

Take the Next Step in Program Learning Assessment: Collect & Review Evidence of Learning (02/2014 workshop)

How to: Choose a Method
Your Turn: Handout
Answer the questions and discuss with colleague

Mahalo!

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Identify Learning Evidence for Program-level Assessment Uses

Examples of Evidence
(these are not mutually exclusive; e.g., a portfolio can contain a culminating project)

A. Assignment completed as part of regular coursework (“signature assignment” or “key assignment”)
B. Blog (online)
C. Comprehensive exam
D. Culminating project: capstone projects, senior theses, senior exhibits, senior dance performance
E. Dissertation
F. Employer’s or internship supervisor’s direct evaluations of students' performances
G. Exam completed as part of program requirements (i.e., not part of a course grade)
H. Exam or quizzes completed as part of regular coursework
I. Grade calibrated to clear student learning outcome(s)
J. Grant proposal
K. IRB approval of research
L. Licensure or certification (developed and administered by an external organization)
M. National exam or standardized test
N. Observation of student performing a task
O. Oral defense
P. Oral presentation; conference presentation
Q. Performance / exhibition
R. Portfolio / collection of student work
S. Pre- post-test
T. Publication
U. Qualifying exam
V. Reflection
W. Research report
X. Resume and cover letter
Y. Seminar paper
Z. Thesis

Tips
1. Use existing assignments/exams
2. Tweak to match SLO
3. Evaluate with a shared tool (e.g., rubric)

To sample or not to sample?
General guideline: do not sample if fewer than 30 graduates each year; instead, evaluate 100% of the (graduating) students.

Random sampling is preferred. Option: use Excel’s formula, “=RAND()” to generate a random number for each student; select the students with the lowest numbers.

Other factors to consider:
• Type of evidence. The program can collect more if the evidence is easy to evaluate such as multiple-choice exams or if an external organization evaluates the evidence.
• Number of faculty willing to help. In 90 minutes, six faculty can score 30-36 papers using a simple scoring rubric. More faculty = more pieces of evidence can be evaluated.

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**The Verb Game**

Use the verb in the student learning outcome (SLO) to help you choose appropriate types of evidence.

What types of evidence can shed light on the question, “Have students achieved this SLO?”

<table>
<thead>
<tr>
<th>Department &amp; SLO. Students will be able to . . .</th>
<th>Possible type(s) of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Biological Engineering. Communicate effectively to a technical audience from diverse areas of expertise.</td>
<td></td>
</tr>
<tr>
<td>2 Biology. Strive for excellence . . .</td>
<td></td>
</tr>
<tr>
<td>3 Biomedical Sciences. Describe the concepts and implications of reliability and validity of study measurements.</td>
<td></td>
</tr>
<tr>
<td>4 Communicology. Demonstrate understanding of basic communication research concepts and processes, including the ethics involved in conducting human subjects research.</td>
<td></td>
</tr>
<tr>
<td>5 Dance. Effectively engage in the rehearsal process and demonstrate intended stylistic nuances, technically accuracy, musicality and creative intent in dance performance.</td>
<td></td>
</tr>
<tr>
<td>6 Geology and Geophysics. Apply technical knowledge of relevant knowledge base, theory, laboratory methods, field methods, computer applications . . . to solve real-world problems in geology and geophysics.</td>
<td></td>
</tr>
<tr>
<td>7 German. Read and comprehend texts written in German from a variety of genres and contexts (e.g., magazine or internet articles, newspapers, literature).</td>
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<tr>
<td>8 Mechanical Engineering. Function on multi-disciplinary teams.</td>
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<tr>
<td>9 Public Health. Distinguish the fundamental characteristics and organizational structures of the U.S. health system, as well as to the differences in systems abroad.</td>
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</tr>
</tbody>
</table>
Your Turn
The program wants to answer this question: What percent of (graduating) students have achieved the SLO(s)?

1. Select at least one of your program’s student learning outcomes (SLOs) and write it below. [option: use the sample program on the back of this sheet to complete this activity]

2. Given the verb in the SLO, write down at least one type of evidence that seems appropriate.

3. Use the curriculum map to locate courses/experiences from which evidence could be collected. Write the courses/experiences below.

4. Give an estimate of how many students will provide evidence. Is this a sample or 100% of (graduating) students?

5. Which of your colleagues might be willing to help?

6. When will you start? What will you do this semester?
Sample Program: History BA

Program Information
Number of BA majors: 109
Number of BA degrees earned each year: 46
Number of faculty: 32

Student Learning Outcomes
1. Students can explain historical change and continuity.
2. Students can write clear expository prose and present their ideas orally according to disciplinary conventions.
3. Students can interpret and use primary sources.
4. Students can identify the main historiographical issues in a specific area of concentration.

Curriculum Map History BA

<table>
<thead>
<tr>
<th>Courses</th>
<th>SLO 1</th>
<th>SLO 2</th>
<th>SLO 3</th>
<th>SLO 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-199</td>
<td>Introduced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200-299</td>
<td>Introduced</td>
<td>Introduced</td>
<td>Introduced</td>
<td></td>
</tr>
<tr>
<td>300-395</td>
<td>Practiced</td>
<td>Practiced &amp; Assessed</td>
<td>Practiced &amp; Assessed</td>
<td>Introduced</td>
</tr>
<tr>
<td>396 Introduction to the Study of History.</td>
<td>Practiced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to the discipline; current</td>
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<tr>
<td>trends in Asian, European, American, and</td>
<td></td>
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<tr>
<td>Pacific historiography; preparation for</td>
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<tr>
<td>senior thesis</td>
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<tr>
<td>400-495</td>
<td>Practiced</td>
<td>Practiced</td>
<td>Practiced</td>
<td>Practiced</td>
</tr>
<tr>
<td>496 Senior Tutorial in History. Analysis of</td>
<td>Mastered &amp; Assessed</td>
<td>Mastered &amp; Assessed</td>
<td>Mastered &amp; Assessed</td>
<td>Mastered &amp; Assessed</td>
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<tr>
<td>sources and evaluation of methods of</td>
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<tr>
<td>historical writing. Students undertake a</td>
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<tr>
<td>major research and writing project in field</td>
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<td></td>
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<tr>
<td>of special interest. Capstone course</td>
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<tr>
<td>requires a 20-25 page minimum final</td>
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<tr>
<td>research paper.</td>
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