

How to use assessments to improve student learning

Approaching SLO/SAO work as a research process

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Defining Acronyms

Used to assess courses in all disciplines:

- SLO: Student Learning Outcome
- CSLO: Course SLO (each course has these)
- PSLO: Program SLO (each degree and certificate has these)

Used to assess Student Service Areas (such as Counseling, Library, Veteran's Center, etc.)

- SAO: Student Area Outcome

Why do we assess learning outcomes?

LPC Mission

Las Positas College provides an inclusive, learning-centered, equity-focused environment that offers educational opportunities and support for completion of students' transfer, degree, and career-technical goals while promoting lifelong learning.

We report out to ACCJC in our accreditation cycle how we are accomplishing our Mission. The accreditation team then evaluates how well we are doing this.

The central mission of Las Positas College is its commitment to **student learning**. To further that mission, the college recognizes the importance of evaluating progress towards that goal.

- We do this at the course, program, and institutional level.
- We do this with the student services, which are vital in supporting our students.

Why do we assess learning outcomes?

- Student learning is different from student achievement
- Class assignments and exams often assess multiple learning outcomes at once, so assessing SLOs is a way to distinguish between student performance on individual learning outcomes
- Measuring **quantitative** SLO/SAO data allows faculty to objectively analyze student progress towards meeting course goals, and moves us away from “**gut feelings**” based on anecdotal information and subjective perceptions.

Results from SLO/SAO assessment can be used for:

- **Self-reflection on pedagogy**
- **Overall program improvement**
- **Disaggregation of PSLO data can help find equity gaps**

The Big Picture

The process of collecting useful SLO/SAO data is like running a research experiment.

As SLO/SAO coordinators, we help frame the question, design the experiment, facilitate data collection and analysis, and lead the discussion of the results.

Each step of the process has its own unique challenges. Today we will cover all steps of the process and try to address common challenges.

SLOs and SAOs as a Research Process

1 | Question

Determine a question your department or service area is interested in answering.

Example Questions:

- *Are there gender gaps in exam performance?*
- *Do science communication skills improve as students take the Physics 1A → 1D series?*
- *Is there a difference in student performance between online and face-to-face courses?*

2 | Methods and Design

- What SLO/SAO data do I need to answer my question?
- Do my current SLOs/SAOs and 3-year-plan give me these data?
- *If not, you may consider updating your SLOs/SAOs or revising your 3-year assessment plan.*

3 | Data Collection

- Communicate the 3-year assessment plan to department faculty.
- *Department faculty:* Assess planned SLOs/SAOs and record data in eLumen.
- *Department faculty:* Answer reflection questions.

4 | Data Analysis

- Run reports in eLumen and organize relevant data into tables and/or graphs.
- Send data to department faculty before group discussion.

5 | Discussion

- *Department faculty:* Meet annually to discuss SLO/SAO results
- Summarize SLO/SAO data and interpretation in Program Review
- Determine the *Question* for next year, and return to Step 1

The Big Picture

All of the details of this process (including how to do things in eLumen!) will be available soon in the forthcoming **SLO Coordinator Handbook**, and on the [LPC SLO Website](#).

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1 | Developing a Question

The first step in collecting useful data is to determine a question your department is interested in answering.

Here are some example questions:

- Are there gender gaps in exam performance?
- Do science communication skills improve as students take the Physics 1A 1D series?
- Is there a difference in student performance between online and face-to-face courses?
- Is there a different in student experiences with counselors between online and face-to-face?

1 | Developing a Question

It is important that the questions you ask are answerable using the SLO data.

PSLOs measure the combined score for a single program outcome from many courses at once. PSLOs can be disaggregated in terms of the following Banner information:

- Demographics
 - Gender
 - Age
 - Ethnicity
 - EOPS
 - Veteran
 - FosterYouth
- Section Attributes:
 - Face-to-face
 - Online
 - Hybrid

We will discuss how to use eLumen to disaggregate PSLO data later in this session!

1 | Developing a Question

Activity: Consider the programs ([degrees or certificates](#)), courses, and/or student services offered by your department. Brainstorm a list of possible questions you might be interested in getting data for.

Ideas to consider when developing questions:

- Are there any areas in your program where there may be equity issues? (PSLO data is most powerful for equity issues in gender, age, ethnicity, and online vs. hybrid vs. face-to-face)
- Are there specific student learning outcomes that might be tied to equity issues?
- Are there learning outcomes that students have traditionally had trouble mastering?

1 | Developing a Question

Ideally, coordinators would discuss possible questions with the department faculty and come to a consensus.

At the very least, the question should be communicated to the faculty prior to assessing SLOs.

2 | Methods and Design

Once you have decided on your question, the next step is to determine what SLO/SAO data is necessary to answer the question.

- Which CSLO(s) (course SLOs) do I need to assess so that I have all the data that feeds up to a particular PSLO (program SLO)?
- How often should I assess the CSLOs/SAOs to get a large enough sample of students?
- Does my current 3-year-plan give me the data I need?
 - If not, you may consider updating your SLOs/SAOs or revising your 3-year assessment plan.

2 | Methods and Design

“Plan” your CSLOs in eLumen.

The SLO coordinator **must do this** in order to make it straightforward for discipline faculty to input SLO scores.

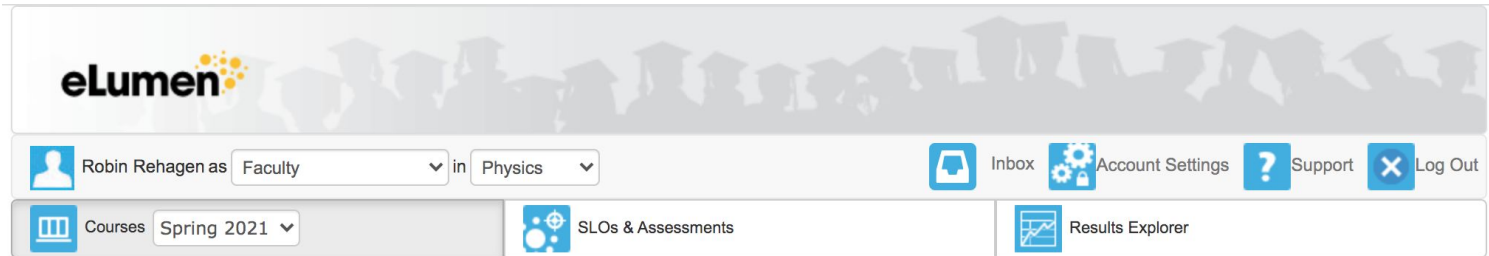
Assessment Library

« 1 **2** 3 4 5 »

| <input type="checkbox"/> | Assessment Name | Assessment Description | Type | Planned Terms | Actions |
|--------------------------|--|---|-----------------------------|---|---------|
| <input type="checkbox"/> | Physics 2B – Content Assessment <small>Active between 01/2016 and 12/2017</small> | Use this assessment to enter SLO data for the PHYS 2B Content Assessment. | Major mid-course assessment | <ul style="list-style-type: none">Spring 2018Spring 2019 | |
| <input type="checkbox"/> | Physics 2B – Scientific Method Assessment <small>Active since 01/2018</small> | Use this assessment to enter SLO data for the PHYS 2B Scientific Method Assessment. | Major mid-course assessment | <ul style="list-style-type: none">Spring 2018Spring 2019 | |
| <input type="checkbox"/> | Physics 2B – Communication Assessment <small>Active since 01/2018</small> | Use this assessment to enter SLO data for the PHYS 2B Communication Assessment. | Major mid-course assessment | <ul style="list-style-type: none">Spring 2018Spring 2019 | |

2 | Methods and Design

What does a discipline faculty member see in eLumen before the SLO Coordinator plans the assessments?



The screenshot shows the eLumen interface. At the top left is the eLumen logo. Below it, the user profile is displayed: "Robin Rehagen as Faculty" in "Physics". To the right are navigation icons for "Inbox", "Account Settings", "Support", and "Log Out". Below the profile, there are three main navigation buttons: "Courses" (with a dropdown for "Spring 2021"), "SLOs & Assessments", and "Results Explorer".

PHYS1C - General Physics III - S01



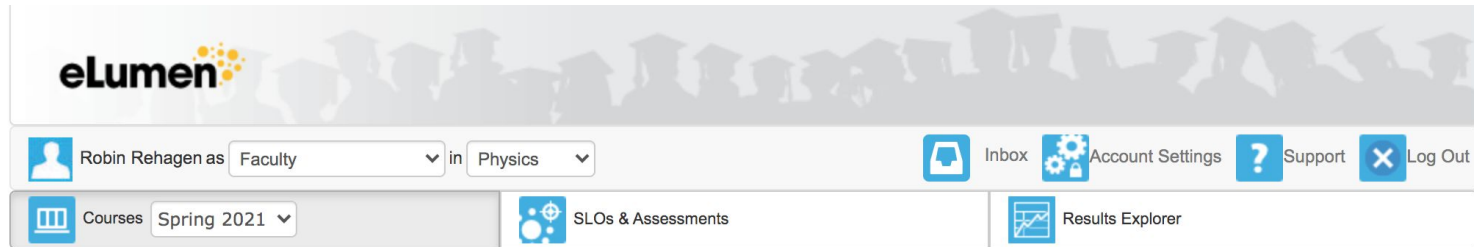
Course Coordinator(s): <unassigned>
Evaluator(s): ROBIN REHAGEN

| Find Assessment | | | |
|--|----------------------|------------|---------------|
| Activity Name | Activity Description | Scorecards | Import Scores |
| No Assessments found. Find an Assessment | | | |



2 | Methods and Design

What does a discipline faculty member see in eLumen after the SLO Coordinator plans the assessments?



The header of the eLumen interface shows the user's profile: Robin Rehagen as Faculty in Physics. Navigation options include Inbox, Account Settings, Support, and Log Out. Below this, there are tabs for Courses (Spring 2021), SLOs & Assessments, and Results Explorer.

PHYS1C - General Physics III - S01



Course Coordinator(s): <unassigned>
Evaluator(s): ROBIN REHAGEN



A table with a search bar and a list of assessment activities. A red arrow points to the 'Scorecards' column, and another red arrow points to the first row.

| Find Assessment | | | | |
|--|----------------------|------------|---------------|--|
| Activity Name | Activity Description | Scorecards | Import Scores | |
| <input type="checkbox"/> PHYS 1C – Content | PHYS 1C – Content | 0/23 | | |

2 | Methods and Design

SLO Scorecard

| | | Mastery | Above Average | Average | Below Average | No Demonstrated Achievement | |
|---------------------------|---|---------|---------------|---------|---------------|-----------------------------|--------------------------|
| SLO | | 4 | 3 | 2 | 1 | 0 | N/A |
| Bennett, Elizabeth | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Franklin, Rosalind | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Newton, Isaac | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Noether, Emmy | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Obama, Barack | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Pullman, Phillip | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Slytherin, Salazar | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Solo, Han | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Tesla, Nikola | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Tolstoy, Leo | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |
| Wiggin, Ender | Upon completion of PHYS 1B, students should be able to design and conduct laboratory experiments, and analyze and interpret their data. | 4 | 3 | 2 | 1 | 0 | <input type="checkbox"/> |

3 | Data Collection

Prior to each Semester, the SLO Coordinator should:

- Clearly communicate the 3-year assessment plan to department faculty so that all faculty know which CSLOs to assess that semester.
- Provide guidance on the typical types of assessments used for each SLO
- Provide information about how to input SLO scores into eLumen.

After Census, the SLO Coordinator should:

- Plan all SLOs in eLumen (sometimes this can be done for Fall and Spring simultaneously; sometimes it must wait until after Census)

3 | Data Collection

Near the end of each Semester, the SLO Coordinator should:

- Remind all discipline faculty to enter SLO scores into eLumen.
 - Deadline for SLO/SAO submission into eLumen: the same day final grades are due
- Give additional guidance on how to use eLumen

All department faculty (full-time and part-time) who teach a course in the SLO plan are required to submit SLO scores. These faculty must:

- Assess the planned SLO(s) in their courses
- Record data in eLumen, using the student data cards set-up by the coordinators
- Answer the reflection questions

3 | Data Collection

After final grades are due, the SLO Coordinator should:

- Run the “faculty participation report” to verify that all assessment data has been entered.
- Contact individual faculty who have not entered data

Since we are moving to a thoughtful, planned, research-style approach - away from “just entering SLO data all the time” - it is imperative that when a CSLO is up for review, all data is entered.

3 | Data Collection

Planning for the assessments and running reports requires more training and is limited to only SLO coordinators.

Entering assessment data and answering reflection questions are the easy steps. To facilitate this process requires SLO coordinators to plan, to communicate, to remind, and to follow-up.

3 | Data Collection

SLOs are required for accreditation!

The faculty participation report informs the coordinator and deans if all the assessments have been completed.

Note:

- Full-time faculty are required by contract to participate in assessing SLOs.
- Part-time faculty are required by contract to perform professional service hours, of which SLOs are a vital (possibly the *most* vital) component, given the SLO assessment mandate for accreditation.

4 | Data Analysis

Before the department can meet together to discuss SLO results, the SLO coordinator should:

- Run reports in eLumen
- Organize the relevant data into relevant tables and/or graphs
 - eLumen will create many useful graphs and tables for you in giant PDF files, but sometimes it is helpful to compact the information into a more succinct format (like a few powerpoint slides)
 - The more easily readable your visuals, the more likely your colleagues will look at them ahead of time, and the more powerful the results will be
- Send the data to department faculty before the group discussion

4 | Data Analysis

Here are the useful reports and what they do:

- “Faculty Participation” Report
 - This report tells the SLO coordinator who has inputted their SLO data and who has not.
 - It will help you figure out who you need to email at the end of the semester!
- “SLO Performance by Division, Course, CSLO” Report
 - Good tables
- “SLO Performance” Report
 - Here you can disaggregate PSLO data

Note: The answers to reflection questions are attached to the assessments, not in a report.

5 | Discussion

Annually (or once per semester) each department should meet to discuss the SLO results. During the meeting:

- The SLO coordinator presents the data and moderates the discussion.
 - End goal of discussion: How can faculty use the results to improve student learning?
- All discipline faculty should attend (full-time, and part-time if possible)
- The department should determine how they wish to proceed in the future
 - Will we change to a new research question?
 - Will we stick with our current 3-year plan or change it?

5 | Discussion

The purpose of SLOs is to provide *data* to answer each department's research question.

When you meet as a department to discuss SLO results, it is important to frame your discussion around the data itself. (i.e., don't ignore the graphs and jump to a department discussion based on anecdotes or personal experience.)

5 | Discussion

If you find that the graphs of numerical SLO data are not useful for answering your research question, then you should figure out how to improve the design or implementation of your research process, or change your research question.

Some possibilities to consider:

- Can the SLO wording be improved or clarified?
- Are all faculty using comparable assessments for the SLO?
- Is there a common standard that faculty are using? Does everyone agree what type of student grade represents A, B, C, D, etc.?
- Are there outside factors influencing the data in such a way that we can't tease out the information we want?

5 | Discussion

After the department discussion, the SLO Coordinator should **summarize SLO data, findings, and resultant changes annually in Program Review**. This serves as documentation for the college's accreditation process.

Questions?

FLEX Day Feedback Survey

Please fill out this survey after the session ends:

<https://forms.gle/FJZwMdA6GCPqLxPbA>