Stony Brook University

Data Collection, Reporting & Analysis
November 16 & 17, 2022

Catherine Scott, Director of Educational Effectiveness
Krista Emma, Educational Effectiveness Specialist
OEE Workshop Series: Assessment Process

Step 1: Articulating Goals And Objectives (Aug./Sept)
Step 2: Mapping And Metrics (Sept.)
Step 3: Benchmarks And Timelines (Oct.)
Step 4: Data Collection, Analysis, and Reporting (Nov.)
Step 5: Closing The Loop (Jan./Feb.)

Fall 2022 Assessment Reports due 2/20/23
OEE Workshop Learning Objectives

Upon completion of this workshop, participants will be able to:

• Create a data collection and analysis plan.
• Generate a report based on collected data and analyses.
• Finalize almost all components of OEE Assessment Plan Template.
1. Quick Review: Identify your Program Goals & Learning Objectives (PLO)
GOALS
• what your dept/program provides to students
• Do not need to be measurable or mapped to curriculum

OBJECTIVES
• what students should be able to do
• Must be measurable and mapped to curriculum

3 - 6 of each
Using Bloom’s Taxonomy

Learning objectives should align with the level or setting of the institution, program (undergraduate, graduate, doctoral), course (introductory course, culminating course), and discipline or subject matter. Bloom’s taxonomy can serve as a helpful tool to select a verb to fill in the blank in the learning objective “formula” above that is appropriate for its context.

Step 1. Determine audience and timeline.
Learning objectives are concise extensions of the phrase, “By completing the [degree/certificate/program], students will be able to___________."

Step 2. Select a measurable verb to describe what you want students to engage in.

Step 3. Include additional supporting details to provide

Examples: Students will be able to...

...create a measurable learning outcome using Bloom’s Taxonomy as a framework.
...evaluate organizational decisions based on business ethical principles.
...compare works of art from the Impressionism and Post-Impressionism eras.
...apply the quadratic equation to an algebra word problem.
...describe the basic theories in developmental psychology.
...identify elements in the periodic table.
2. Quick Review: Mapping & Metrics
# Sample Curriculum Map

<table>
<thead>
<tr>
<th>Program X Curriculum Map</th>
<th>Course 1</th>
<th>Course 2</th>
<th>Course 3</th>
<th>Course 4...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Objective 1</td>
<td>X Quiz 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Objective 2</td>
<td></td>
<td>X Term Paper</td>
<td></td>
<td>X Oral Presentation</td>
</tr>
<tr>
<td>Learning Objective 3...</td>
<td></td>
<td></td>
<td>X Case Study</td>
<td></td>
</tr>
</tbody>
</table>
**Direct Assessment:** occurs when faculty evaluate student performance directly.

- Case Study
- Quiz
- Exam
- Group Project
- Oral Presentation
- Senior or Capstone Project
- Problem Sets
- Written work (essay, term paper, discussion board, etc.)

**Indirect Assessment:** occurs when asking others about their perspective or perceptions.

- Course Evaluation
- Student Survey
- Faculty Survey
- Alumni Survey
- Employer Survey
- Focus Group
3. Quick Review: Benchmarks & Timelines
Why do we need to set benchmarks?

• A score or grade in isolation doesn’t necessarily explain whether the outcome is good or not.

• “Good” is relative and may vary by context/discipline - we need a reference point!

Adapted from "Understanding and Using Assessment Results" by Linda Suski (2008).
Assessment Cycle Timeline

• You do not need to assess all PLOs every year.

• You will be assessing at least one PLO per year.

• Timling should align with your curriculum map selections.

• OEE recommends a 3-year assessment cycle.

• Assessment is a cyclical, ongoing process of continuous improvement. Start over again once all have PLOs have been assessed!
Before we move on…

https://tinyurl.com/yh58ucbm
4. Data Collection, Reporting & Analysis
Data Collection: Creating a plan
Why do you we need to plan for data collection?

The Law Program has developed a curriculum map and determined where they will assess each PLO. They have determined four existing assignments that they can use to assess the PLOs. However, each course has at least two sections that are taught by different instructors with no standard rubric for the assignments. The data is collected, scored, and analyzed by the course instructor. For example, LAW 400 is taught by four instructors with different years of experience and approaches to the material.
What could go wrong?
Why do you need to plan for data collection?

- Lack of standardization and planning brings up some data collection challenges.
  - Not having a standard rubric will make it difficult to assess learning across sections of the course.
  - With no consensus on achievement benchmarks, there is no real way to assess the program outcomes.
  - Developing a plan for data collection is an important step to ensuring that your assessment work is sustainable and shared by the entire department.
Data Collection Plan

- Who collects the data (and where do they put it)?
- Where is the data collected?
- When is the data collected?
- How much data is collected?
Who collects the data (and where do they put it)?

- **Who?**
  - You, as the Assessment Coordinator
- **Where do you put it?**
  - Suggestion: Create google assessment folder (or any designated google folder)
When is the data collected?

- You can collect data without analyzing it so you should collect it each semester, every time the course or venue for assessment is offered.
- You want collection to be a regular occurrence
- Collect the data each year even if you don’t analyze the data each year
How much data is collected?

“Collect enough evidence to feel reasonably confident that you have a representative sample of what your students have learned and can do. The sample should be large enough and representative enough that you can use the results with confidence to make decisions about a course or program. And take careful steps to ensure the accuracy and truthfulness of your assessment findings.” [Suskie, L. (2009). Assessing student learning: A common sense guide (2nd ed.). San Francisco, CA: Jossey-Bass. p. 47]
### How much data is collected?

**Strive for 100%**

<table>
<thead>
<tr>
<th>Population size</th>
<th>Sample size for a 90% confidence interval</th>
<th>Sample size for a 95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>±15% Sampling Error</td>
<td>±10% Sampling Error</td>
</tr>
<tr>
<td>25</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>50</td>
<td>19</td>
<td>29</td>
</tr>
<tr>
<td>100</td>
<td>23</td>
<td>40</td>
</tr>
<tr>
<td>200</td>
<td>26</td>
<td>51</td>
</tr>
<tr>
<td>400</td>
<td>28</td>
<td>58</td>
</tr>
</tbody>
</table>
Data

• Begin by taking stock of the assessment artifacts and evidence at your disposal
• Review what data sources may already exist within the University or within your school, department or program.
• Determine what additional data may need to be collected at a local level, the process or policy or collection, and a responsible point person.
• Like assessment methods, data can be direct or indirect in nature. Using both types of evidence can provide multiple perspectives in the assessment process.
  o Direct evidence: tests, rubrics, certification or licensure exams, or field experience evaluations.
  o Indirect Evidence: job placement rates, salaries, retention rates, graduation rates, course grades, surveys of students or alumni.
Data Analysis Plan
Data Analysis Plan Answers Three Questions:

1. What analysis methods are used?
2. When does analysis occur?
3. Who does the analysis?
What analysis methods are used?

- Depends on the type of data and criteria you have
- Numerical data uses descriptive statistics
- Non-numerical data such as observations, essays, performances will most likely be qualitative in nature and use rubrics or qualitative analysis
Examples:

• If your criterion is that 85% of students will pass a state licensure exam on the first attempt, you’ll use descriptive statistics with a mean, frequency, and percentages.
• If your criterion is that at least 80% of students will score a “meets expectations” on the internship rubric for ethical behavior, this will be a rubric-based analysis.
When does analysis occur?

- You do not need to analyze each PLO each semester or even each academic year.
- You can collect the data without analyzing it and analyze the data on a schedule.
Who does the analysis?

- Consider these questions when thinking about who does the data analysis:
  - Will the course instructor conduct analysis and provide it to the program?
  - Will an individual faculty member or team conduct the analysis?
  - Who has expertise to conduct the analysis?
Data Reporting
Reporting:

- Keep data summaries short, sweet and easy to interpret.
- Use concise, simple charts, graphs, lists, or PowerPoint slides. Avoid narrative reports.
- Aggregate data first, then drill down into details.
- Link results to your learning objectives and benchmarks to provide clear outcomes related to your established standards.
- Consider the audience receiving the report, and what data they might need to inform decision-making.
- Engage in meaningful discussion with stakeholders to determine what the data means for your program.
- As you collect evidence over time, provide historical trend data, such as a year over year analysis.
Review OEE template & reporting reqs

Fall 2022 - Spring 2023 Program Assessment Report

<table>
<thead>
<tr>
<th>School or College</th>
<th>School of Law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>Department of Law, Ethics &amp; Public Policy</td>
</tr>
<tr>
<td>Degree Program</td>
<td>Juris Doctor</td>
</tr>
</tbody>
</table>

**Program Goals**
- The program provides students with the tools for active and effective participation as professionals in legal counseling, advocacy and decision-making.
- The program prepares students for the study of law as an integral component of larger social, political, economic and ecological systems.
- The program employs the Socratic Method, problem-based learning, and simulated or experiential learning to help students develop their legal skills and abilities.

**2022-2023 Accomplishments**
- 95% retention rate for the most recently admitted cohort.
- 75% of graduates passed the Bar Exam (higher than New York State pass rate of 66%).
- Increased admissions process selectivity by 5% compared to last year.

**2022-2023 Improvements**
- Inclusion of hybrid learning options in select courses.
- Successfully hired 2 new tenure-track FTEs with experience in distance learning.
- 5 Additional Teaching Assistantships offered.
- Expanded faculty office hours and leveraged scheduling support application to reduce administrative burden and increase student attendance at office hours.

**2022-2023 Evidence that Prompted Improvement**
- Feedback from student surveys indicating a desire for increased flexible and/or distance learning formats as we emerge from the pandemic.
- Feedback from student focus groups indicating a need for more one-on-one support in the classroom.
- Data from student course evaluations suggesting better outcomes in classes supported by TAs.

---

**Program Learning Objective 2.** Upon completion of the degree, students should be able to synthesize legal texts and apply the legal principles extracted from the texts to new factual circumstances.

<table>
<thead>
<tr>
<th>Location in Curriculum Map (Course Name)</th>
<th>LAW 870</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Method</td>
<td>Literature Review with Policy Recommendation</td>
</tr>
<tr>
<td>Timeline/Frequency</td>
<td>Spring 2022 (Assessed in Year 2 of 3-year cycle)</td>
</tr>
<tr>
<td>Benchmark</td>
<td>Average overall score of 20 on a 25-point rubric measuring analysis of at least 3 legal texts and synthesis of selected texts to form a sound policy recommendation.</td>
</tr>
<tr>
<td>Results/Findings</td>
<td>Results show an average overall score of 10 on a 25-point rubric. Students commonly lost points on citation requirements.</td>
</tr>
<tr>
<td>Actions/Improvements</td>
<td>Require student participation in citation training as a component of orientation. Regroup with instructors to determine whether citation requirements merits points within the rubric, as students otherwise scored well on content-related requirements.</td>
</tr>
<tr>
<td>School or College</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>---</td>
</tr>
<tr>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>Degree Program</td>
<td></td>
</tr>
<tr>
<td>Program Goals</td>
<td></td>
</tr>
<tr>
<td>Accomplishments</td>
<td></td>
</tr>
<tr>
<td>Improvements</td>
<td></td>
</tr>
<tr>
<td>Evidence that Prompted Improvement</td>
<td></td>
</tr>
</tbody>
</table>

Program Learning Objective 1: Upon completion of the degree, students should be able to…

<table>
<thead>
<tr>
<th>Location in Curriculum Map (Course Name)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Method</td>
<td></td>
</tr>
<tr>
<td>Timeline/Frequency</td>
<td></td>
</tr>
<tr>
<td>Benchmark</td>
<td></td>
</tr>
<tr>
<td>Results/Findings</td>
<td></td>
</tr>
<tr>
<td>Actions/Improvements</td>
<td></td>
</tr>
</tbody>
</table>

SBU Program Assessment Template
Let’s finish…

https://tinyurl.com/yh58ucbm
Click here or scan the QR code
to be redirected to OEE’s Annual Assessment Report template & Quick Reference Guide.
Questions?
Contact us!
Catherine.Scott@stonybrook.edu
Krista.Emma@stonybrook.edu
EducationalEffectiveness@stonybrook.edu