

# Direct and Indirect Measures of Student Learning

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Assessment of student learning examines whether students have achieved the knowledge, skills, competencies, or behaviors identified in a **Student Learning Outcome (SLO)**.

The key distinction is:

**Direct measures require students to demonstrate the learning. Indirect measures provide perceptions or other indicators related to the learning.**

Student learning may occur through **curricular or co-curricular experiences**. Regardless of where the learning occurs, assessment of an SLO should include **at least one direct measure of student learning**.

## Direct vs. Indirect Measures

|                            | Direct Measures                                                                  | Indirect Measures                                                                                              |
|----------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>What they assess</b>    | What students actually know, can do, create, or demonstrate                      | Perceptions, experiences, attitudes, or other indicators related to learning                                   |
| <b>Evidence comes from</b> | Student work or observed performance                                             | Students, alumni, employers, or other indicators                                                               |
| <b>Primary question</b>    | Can students demonstrate the learning described in the SLO?                      | What do students or others perceive or report about the learning or educational experience?                    |
| <b>Role in assessment</b>  | Primary evidence of SLO achievement                                              | Supplemental or contextual evidence                                                                            |
| <b>Examples</b>            | Papers, projects, exams, presentations, portfolios, performances, demonstrations | Surveys, self-assessments, interviews, focus groups, alumni/employer perceptions, overall licensure pass rates |

## FIU Assessment Expectations

### Academic Programs and Certificates

SLOs should be assessed using **direct measures of student learning**. Indirect measures, such as student satisfaction, perceived preparation, employer feedback, employment, or overall licensure pass rates, are generally better addressed through **Program Outcomes (POs)**.

### University Core Curriculum (UCC) Courses

UCC Student Learning Outcomes must be assessed using **direct evidence of student learning**. An indirect measure may be included as a **secondary or supporting measure**, but it should not replace the direct measure used to determine achievement of the SLO.

## Co-Curricular Learning

Student learning assessment also applies to **co-curricular teaching and structured learning experiences**. When a student-serving unit assesses an SLO resulting from a co-curricular experience, the measure should directly evaluate what students know, can do, or demonstrate as a result of that experience.

### Example

**SLO:** Students participating in a leadership development program will **apply effective conflict-resolution strategies in a team setting**.

**Direct Measure:** Students participate in a structured role-play or simulation and are evaluated using a rubric with indicators for **identifying the source of conflict, selecting an appropriate resolution strategy, communicating effectively, and responding constructively to differing perspectives**.

**Indirect Measure:** Participants complete a survey asking them to rate their **confidence in resolving conflict within a team**.

The direct measure provides evidence that students can **demonstrate the skill**, while the indirect measure provides information about their **perception of their ability**.

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## Direct Measures

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A **direct measure** requires students to demonstrate the specific knowledge, skill, competency, or behavior identified in the SLO.

The assessment should evaluate the **specific learning described in the outcome** through clearly defined criteria, such as SLO-aligned rubric indicators, scoring criteria, exam items, or performance standards.

### Common Direct Measures

- Papers and written assignments
- Projects and capstone experiences
- Portfolios
- Oral presentations
- Performances and demonstrations
- Clinical or laboratory demonstrations
- Case studies and simulations
- Locally developed examinations
- Embedded examination questions mapped to an SLO

- Pre-/post-tests that directly test knowledge or skills
- Thesis or dissertation work
- Observations of student performance using defined criteria
- Standardized, certification, or licensure examination **competency/domain results when they can be directly aligned with the SLO**

## Alignment Matters

The assignment alone does not make a measure direct. Faculty should identify the **specific criteria used to evaluate the learning described in the SLO**.

For example:

**SLO:** Students will analyze ethical issues using principles appropriate to the discipline.

**Direct Measure:** Students complete a case analysis scored using rubric indicators for:

- identification of the ethical issue;
- application of relevant ethical principles;
- analysis of competing considerations; and
- justification of the conclusion.

Criteria such as grammar, formatting, or assignment completion may be appropriate for grading the assignment, but they do not provide direct evidence of this particular SLO unless they are part of the learning described in the outcome.

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## Indirect Measures

An **indirect measure** provides information associated with student learning without requiring students to demonstrate the learning itself.

Indirect measures may capture perceptions, confidence, satisfaction, experiences, preparedness, or broader indicators of student or program success.

## Common Indirect Measures

- Student surveys
- Student self-assessments
- Alumni surveys
- Employer surveys
- Course evaluations
- Interviews

- Focus groups
- Student satisfaction measures
- Perceptions of preparation
- Self-reported confidence or competency
- Overall course grades when they do not isolate the SLO
- Retention or graduation data
- Employment or placement data
- **Overall licensure or certification examination pass rates**

Indirect measures can provide valuable context, but they **do not substitute for direct evidence of achievement of an SLO**.

## Example

**SLO:** Students will analyze ethical issues using principles appropriate to the discipline.

**Indirect Measure:** Graduating students rate their agreement with the statement:

*“My program prepared me to analyze ethical issues in my discipline.”*

This provides information about students’ **perceptions of their preparation**, not evidence that they can actually perform the analysis.

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## Examples: SLOs with Direct and Indirect Measures

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| Student Learning Outcome                                                                    | Direct Measure                                                                                                                                                              | Indirect Measure                                                                   |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Students will <b>analyze ethical issues</b> using principles appropriate to the discipline. | Case analysis scored on <b>identification of ethical issues, application of ethical principles, analysis of competing considerations, and justification of conclusions.</b> | Student survey of perceived confidence or preparation in analyzing ethical issues. |
| Students will <b>communicate effectively in writing</b> for a professional audience.        | Written assignment scored on <b>clarity, organization, use of evidence, audience appropriateness, and disciplinary writing conventions.</b>                                 | Graduating student survey of perceived preparation in written communication.       |

| Student Learning Outcome                                                                                  | Direct Measure                                                                                                                                                                                       | Indirect Measure                                                                       |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Students will <b>deliver an effective oral presentation</b> for a professional audience.                  | Presentation scored on <b>organization, clarity, supporting evidence, delivery, audience awareness, and response to questions.</b>                                                                   | Student self-assessment of presentation skills.                                        |
| Students will <b>apply quantitative methods</b> to solve discipline-specific problems.                    | Examination or applied project scored on <b>selection of method, accuracy, application, interpretation of results, and justification of conclusions.</b>                                             | Student survey of confidence in applying quantitative methods.                         |
| Students will <b>collect, analyze, and interpret data</b> using appropriate methods.                      | Data-analysis assignment scored on <b>data collection, selection of analytical methods, accuracy of analysis, interpretation, and communication of findings.</b>                                     | Exit survey asking students to rate their preparation in data analysis.                |
| Students will <b>demonstrate effective interpersonal communication</b> in a professional setting.         | Simulation or observed interaction scored on <b>active listening, clarity, responsiveness, professionalism, and adaptability to the audience or situation.</b>                                       | Internship or practicum survey of perceived preparation for professional interactions. |
| Students will <b>perform a discipline-specific professional skill</b> according to established standards. | Clinical demonstration, practicum task, or simulation scored on the <b>specific procedures, accuracy, decision-making, professional standards, and quality of performance identified in the SLO.</b> | Alumni or employer survey regarding graduates' professional preparedness.              |

# Licensure and Certification Examinations

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Licensure and certification examinations require special consideration because the **examination itself may test student knowledge directly, while the data available to the program may not provide direct evidence of a specific SLO.**

## Overall Pass Rates Are Indirect Measures

An **overall licensure or certification examination pass rate is an indirect measure for SLO assessment.**

For example: **92% of graduates passed the licensure examination on their first attempt.**

This is an important indicator of overall graduate preparation and program effectiveness. However, the pass rate does not identify:

- which specific competencies students demonstrated;
- how students performed on the learning described in a particular SLO; or
- which areas of learning contributed to passing or failing the examination.

For academic programs and certificates, overall licensure or certification pass rates are therefore generally more appropriate as **Program Outcome measures** rather than direct measures of an SLO.

## When Licensure Examination Results Can Be Direct

Licensure or certification examination results may serve as a **direct measure** when the program receives performance data at a level that can be clearly aligned with the SLO.

| Evidence Available                                         | Classification for SLO Assessment            |
|------------------------------------------------------------|----------------------------------------------|
| Overall licensure examination pass rate                    | <b>Indirect</b>                              |
| First-time pass rate                                       | <b>Indirect</b>                              |
| Pass rate compared with state or national benchmarks       | <b>Indirect</b>                              |
| Overall examination score covering multiple competencies   | <b>Generally indirect for a specific SLO</b> |
| Domain or content-area score directly aligned with the SLO | <b>Direct</b>                                |
| Competency-level performance directly aligned with the SLO | <b>Direct</b>                                |
| Individual examination items mapped to the SLO             | <b>Direct</b>                                |

## Example

**SLO:** Students will apply principles of pharmacology to make appropriate clinical decisions.

**Indirect Measure:** Percentage of graduates who pass the overall licensure examination.

**Direct Measure:** Student performance on the licensure examination's pharmacology competency or content domain, when that domain can be directly aligned with the SLO.

**The key question is not whether the examination is a direct test. The key question is whether the results available to the program provide direct evidence of the specific learning described in the SLO.**

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## The Evidence Determines the Classification

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The name of an assessment instrument does not, by itself, determine whether a measure is direct or indirect.

| Assessment Approach                                  | Classification                     | Why                                                              |
|------------------------------------------------------|------------------------------------|------------------------------------------------------------------|
| Pre/post knowledge test                              | <b>Direct</b>                      | Students demonstrate what they know.                             |
| Pre/post self-rating of knowledge                    | <b>Indirect</b>                    | Students report their perception of learning.                    |
| Presentation scored on SLO-aligned criteria          | <b>Direct</b>                      | The targeted competency is demonstrated and evaluated.           |
| Survey asking whether presentation skills improved   | <b>Indirect</b>                    | Students report perceived improvement.                           |
| Exam questions mapped to an SLO                      | <b>Direct</b>                      | Performance on the specific learning is evaluated.               |
| Overall course grade                                 | <b>Usually indirect for an SLO</b> | The grade often combines multiple competencies and requirements. |
| Overall licensure exam pass rate                     | <b>Indirect</b>                    | The result does not isolate achievement of the specific SLO.     |
| Licensure exam competency score aligned with the SLO | <b>Direct</b>                      | Performance on the targeted competency is evaluated.             |

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# Remember

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**Direct = Students demonstrate the learning.**

**Indirect = Students or others report perceptions or provide other indicators related to the learning.**

For **SLO assessment**, direct evidence should be the foundation for determining whether students achieved the outcome.

For **academic programs and certificates**, indirect measures are generally best incorporated into **Program Outcomes**.

For **UCC courses**, indirect measures may be used only as **secondary or supporting evidence** alongside direct assessment. These principles apply to student learning that occurs in both **curricular and co-curricular experiences**.