# MEASURES

Measures are opportunities for programs to collect information about how well students are demonstrating or performing the Student Learning Outcomes (SLOs).

Well-chosen measures will yield information that is relevant, useful, and actionable. Measures should be consistently administered to help ensure that data are reliable and that issues of faculty bias are addressed. Measures should directly assess the intended outcome to help ensure data are valid and represent the phenomenon.

There should be at least two measures for every SLO because multiple assessment measures provide a convergence of evidence. This convergence promotes the use of results for decision making. Each measure should incorporate the majority of students in the program or a representative sample. At least one of the measures should be a direct measure of student learning which requires the evaluation of student work samples.

**Common Assessment Measures**

| If you want to... | Use these sources of information | And asses them using |
| --- | --- | --- |
| Assess knowledge and conceptual understanding | Multiple-choice tests | Item scores that are mapped back to test blueprints |
| Assess thinking and performance skills | Papers, projects, performances, essays, exhibitions, field experiences, and other learning activities | Program level rubrics, rubrics |
| Assess attitudes and values | Reflective writing<br><br>Self-assessments and surveys | Qualitative analysis<br><br>Item scores that are mapped back to outcomes |
| Draw an overall picture of student learning, including thinking and performance skills as well as attitudes, values, and habits of mind | Portfolios | Rubrics and reflective writing |
| Compare your students against peers | Published instruments, national or certification exams | Item scores and instrument sub-scores that are mapped back to key learning outcomes |

Adapted from "Assessing Student Learning" by Suskie, L. 2018, p. 96.

**Types of Measures**

Direct Measures assess actual samples of student work. Direct measures are regularly employed to assess learning in the classroom. They provide evidence of student learning that is tangible, visible, and measureable. Direct measures are assessed by faculty, professionals in the field, or experts regarding what a student learned and how well they learned it.

Examples: Essays, performances, presentations, course projects, capstone projects, exams, final papers, research paper, regional or national tests, ratings or evaluation from field or clinical supervisors, comprehensive exams, etc.

Indirect Measures provide signs, high-level indicators, or perceptions of learning. Indirect measures often assess opinions or thoughts about students' knowledge, skills, attitudes, learning experiences, and perceptions. These measures provide information that students are *probably* learning and help to substantiate instances of student learning.

Examples: Surveys (student, department, student evaluation of instruction, alumni, employer, faculty), self-assessments, focus groups, interviews, advisory board feedback, employment or placement rates of graduating students into appropriate career positions, graduation or completion rates, number or rate of students involved in faculty research, collaborative publications and/or presentations, service learning, or extension of learning in the larger community, etc.

Direct vs Indirect Measures: Both types of measures have strengths and weaknesses. Each have their own limitations and contain some bias. A meaningful assessment plan should use both direct and indirect measures from a variety of sources (students, alumni, faculty, employers, etc.).

What about course grades? The use of course grades as the sole measure of student learning are insufficient in achieving assessment's main purposes of educational quality and improvement. They can be a useful indirect measure of student learning to help substantiate evidence from direct measures.

## How to Create Meaningful Measures

Measures should address the following questions:
1. Where and how are students demonstrating the learning outcome?
2. What is the purpose of the measure and how does it relate to the outcome?
3. How is the measure of student learning evaluated (rubric, faculty panel, answer key, survey, etc.)?
4. What scale, criteria, or standard is used to evaluate the student learning outcome?
5. How is this consistently measured across administrations?
6. What makes this measure trustworthy and useful?

Meets Standard Criteria on Academic Assessment Rubric:

☑ Most measures directly assess intended outcome (validity); measures are consistent across administrations (reliable); results will yield useful and meaningful information for improvement; includes multiple types of measures; includes 1 direct measure for each outcome; sufficient details are provided about where and how students demonstrate learning; sufficient details are provided about the measures to determine relevancy and rigor.

Here's a template to follow:

In [1. course or program requirement], students should complete a [test, portfolio, presentation, performance, assignment, survey, etc.]. The purpose of the assignment is to have students [2. describe assignment]. Students are asked to demonstrate [outcome] in this assignment.

[Outcome] is evaluated by [3. evaluation process], on a scale of [4. criteria or standard].

The program addresses the consistent application of the [rubric, faculty panel, answer key, etc.] across administrations with the use of [5. reliability strategy]. This measure is considered to be trustworthy and useful because [6. validity strategy].

**Examples**

Example 1:  Measure - Research project rubric, Outcome – Research methodology
In [1] ODUU 400, students should complete a research project on a topic of their choosing. The purpose of the assignment is to have students [2] ask a research questions, provide a rationale for an appropriate methodology, conduct or outline that methodology, and then provide a list of possible recommendations. Students are asked to demonstrate advanced research methodology skills in this assignment.

Research projects are evaluated by [3] a rubric, with three rubric areas directly evaluating research methodology (research questions, methodology selection, methodology skills).  Rubric sections are scored on a scale of [4] 1 - 4, with 4 for Exceeds Standard, 3 for Meets Standard, 2 for Approaches Standard, and 1 for Needs Attention.

The program addresses the consistent application of the rubric across administrations with [5] the use of a shared program rubric for the final project. All faculty members teaching this course use the program rubric. This measure and the data are considered to be trustworthy and useful because [6] the rubric was collaboratively developed by program faculty and informed by educational best practices in our field.  Additionally, all senior students are required to take ODUU 400 and the research project represents a large portion of the final grade. For these reasons, the program believes that this measure will provide useful data for improving student learning.
Example 2:  Measure - Panel review of ePortfolio with rubric, Outcome – written communication

In [1] ODUU 470, seniors should complete an ePortfolio. The purpose of the ePortfolio is to have students [2] make connections between their course assignments, the overall goals of the programs, and the disciplinary field. All sections of the ePortoflio are used to assess to written communication.

EPortfolios are evaluated by three faculty using [3] a program-level rubric, with three rubric areas directly evaluating written communication (Readability, Logical Consistency, Reflection) and the rubrics are given to students along with the ePortoflio assignment. Rubric sections are scored on a scale of [4] 1 - 4, with 4 for Exemplary, 3 for Good, 2 for Acceptable, and 1 for Unacceptable.

The program addresses the consistent application of the rubric across administrations by [5] holding a short norming session at the start of the fall semester. All faculty who teach ODUU 470 attend. Samples of student work are shared and rated on the rubric. Faculty share their ratings, discuss applications of the rubric, and pose questions to each other based on previous experience. The ePortfolio evaluations are considered to be trustworthy and useful because [6] the rubric was collaboratively developed by faculty in the program and informed by educational best practices in our field. Additionally, all students are required to take ODUU 470 within their senior year. By this time students have taken our writing intensive courses, the general education writing requirements, and ODUU 300 (another required course in our program that is focused on writing). The ePortfolio is worth 30% of the final grade in this course. For these reasons, the program believes that this measure will provide useful data for improving student learning.

Example 3: Measure - Capstone test developed by the program, Outcome – Applied Theoretical Knowledge and Data Analysis
In [1] ODUU 480, seniors take the capstone test. The purpose of the capstone test is to have students [2] demonstrate mastery in two areas – applied theoretical knowledge and data analysis.

[4] The test is 50 multiple choice questions. [5] specific questions on the test were developed to measure each outcome – see the item analysis and test blueprint in the project attachments.

The program addresses the consistent application of the test across administrations by [6] adopting a common capstone test. This measure is considered to be trustworthy and useful because [7] the test counts for 10% of the final grade and ODUU 480 is taken by all seniors in their final year of the program. Additionally, the test was created by two faculty members within the department in 2015. The test was piloted and reviewed to ensure that each question corresponded with the subsequent outcomes.

Example 4: Measure - Test developed nationally, Outcome – Advanced knowledge
In [1] ODUU 490, seniors will take the capstone test. The purpose of the test is to [2] measure students' advanced knowledge in multiple areas within the discipline.

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The test is [3] 100 multiple choice questions. Specific questions on the test are used to measure this student learning outcome. [4] Sub scores should be at or above the national average on questions related to this outcome.

The program addresses the consistent application of the test across administrations by [5] using the Major Field Test administered by ETS. This measure is considered to be trustworthy because [6] it was created and validated by ETS. Students are motivated to do well on the test as it counts for 10% of the final grade. Additionally, this measure is considered useful because courses are mapped to the outcomes tested in the major field test. Our program is interested in collecting data that can be nationally benchmarked.

Example 5:  Measure – Candidacy Exam Rubric, Outcome – advanced knowledge, research methods, written communication
During the [1] Candidacy Exam, graduate students will write a response to 3 prompts. The purpose of the candidacy exam is to have students [2] demonstrate advanced knowledge in the field, advanced knowledge of research methods, and written communication skills appropriate for an academic audience.

The candidacy exam is evaluated by three faculty using [3] a program-level rubric, with three rubric areas directly evaluating advanced knowledge in the field, advanced knowledge of research methods, and written communication skills. The rubrics are given to students along with the candidacy exam. Rubric sections are scored on a scale of [4] 1 - 4, with 4 for Exemplary, 3 for Good, 2 for Acceptable, and 1 for Unacceptable.

The program addresses the consistent application of the rubric across administrations by [5] using a common program-level rubric. The program also holds a norming session every two years. All graduate faculty attend. Samples of student work are shared and rated on the rubric. Faculty share their ratings, discuss applications of the rubric, and pose questions to each other based on previous experience. The candidacy exam evaluations are considered to be trustworthy and useful because [6] the rubric was collaboratively developed by faculty in the program and informed by educational best practices in our field. Additionally, all students are required to take the candidacy exam after 2 years of coursework. By this time, students should have the foundational knowledge to advance in the graduate program.

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