

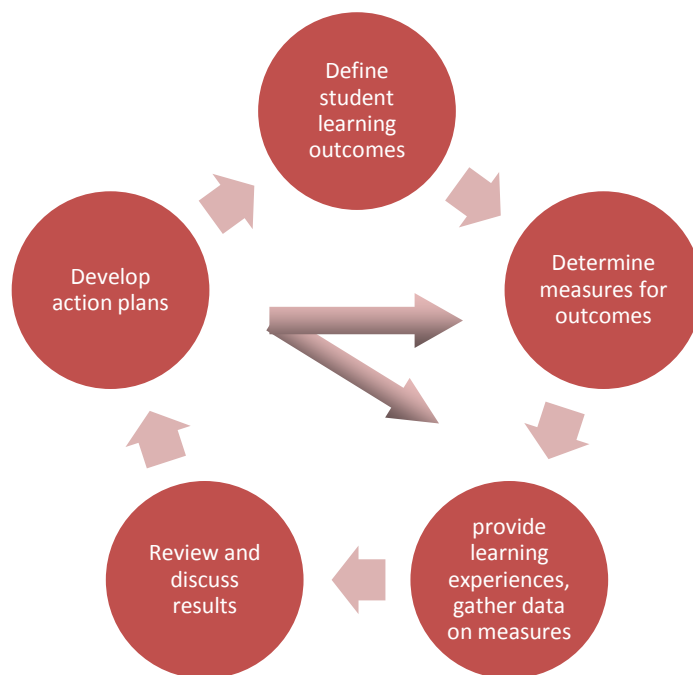
## Program-Level Student Learning Assessment: Measures

This resource guide contains information on assessment measures relevant to program-level student learning assessment, including:

- [Overview](#)
- [Examples of Measures](#)
- [Characteristics of Effective Measures](#)
- [Strategies for Developing or Selecting Measures](#)

### **Overview**

Student learning outcomes assessment is an ongoing process involving the systematic collection, examination, interpretation and use of evidence to document and improve student learning. The assessment cycle is displayed below. A fundamental component of assessment involves selecting or developing assessment measures for each of the defined student learning outcomes.



### **Examples of student learning outcome measures**

Assessment measures are classified on several dimensions, including direct/indirect. Direct measures are those that involve samples of actual student work and thus provide direct evidence of student learning. Indirect measures involve factors that are associated with learning but do not characterize actual learning.

The distinction can be used as a guide in developing a set of measures for a comprehensive assessment plan. It is vital that each outcome has at least one direct measure associated with it. Best practices also call for including indirect measures to allow for richer interpretation of results.

Examples of direct and indirect measures include information obtained from:

Direct Measures	Indirect Measures
<ul style="list-style-type: none"> <li>• Key or signature assignments in courses (term papers, research projects, case studies, performances)</li> <li>• Key items in in-class exams</li> <li>• Portfolios</li> <li>• Capstone projects, senior exhibits or performances</li> <li>• Licensure or certification exams</li> <li>• Internship performance (rated by supervisors)</li> <li>• Employer ratings of alumni performance</li> </ul>	<ul style="list-style-type: none"> <li>• Students' self-assessments of learning</li> <li>• Students' perceptions of curriculum</li> <li>• Focus groups</li> <li>• Exit interviews, alumni surveys</li> <li>• Job placement</li> <li>• Graduate school acceptance</li> <li>• Participation in profession-related activities</li> </ul>

### ***Characteristics of effective program-level outcome measures***

An effective assessment measure has the following properties:

1. Reliable. Yields the same result regardless of who uses it or when it is used.
2. Valid. Is aligned with and actually measures the outcome it is intended to measure.
3. Actionable. Provides information at a level of detail that allows developing informed action plans to improve student learning.
4. Feasible/manageable. Is cost-effective and efficient. Information can be easily collected using the measure. Analysis of results is straightforward.
5. Meaningful/interesting. Results are interesting enough to engender willingness to act on the part of faculty.
6. Converging. The individual measure works well as part of a set of measures comprehensively assessing the outcome.

### **Course Grades**

Many faculty wonder whether course grades are effective assessment measures. Grades are not the best measures for program assessment because they do not possess most of the characteristics of effective measures:

1. **Reliable** ✕ ✓  
Consistency in grading is possible, but difficult, to attain. Challenges include:
  - Different sections of the course taught by different instructors.
  - Changes in the course grading scheme over semesters (same or different instructors).
2. **Valid** ✕  
Course grade would be a valid measure if and only if the entire course grade was aligned with the specific outcome and nothing else. This is unlikely because:
  - An individual course typically has more than one outcome associated with it, so the grade reflects the set of outcomes.
  - Course grades are often determined in part by factors other than learning of a specific outcome, such as: attendance, effort, growth, place in distribution of the class (for instructors that norm or grade on a curve), extra credit, class participation, etc.

3. Actionable ✗

Because course grades encompass multiple factors, it is difficult to develop action plans based on results. Typically, drilling down to examine patterns of scores on individual components of the grade is necessary to develop hypotheses for results and to make action plans.

4. Feasible ✓

Grades are perhaps the easiest measure to use for program-level assessment because they are reported and readily accessible. Their ease makes them enticing as measures, despite being inappropriate based on the remaining characteristics of effective measures.

5. Meaningful ✗

Grades can be interesting, but not always. Typically, it is only poor grades that engender interest among instructors. And, the lack of an actionable path (see characteristic #3) makes it difficult to maintain interest over time.

6. Converging ✗

Because grades encompass a multitude of factors, they tend to overlap – rather than converge – with other measures.

### ***Strategies for developing or selecting measures***

When developing a program-level student learning assessment plan, it is good practice to attempt to use existing measures if possible. Using measures that are a normal course of the program curriculum helps ensure sustainability of implementation. A strategy for determining measures involves:

1. Develop a curriculum map

A curriculum map is a roadmap for a program (see below). Curriculum maps are matrices that list program-level learning outcomes and enumerate all program courses and experiences (e.g., internship, licensure exams) in which each outcome is addressed. Consult the [Assessment Website](#) for more information on curriculum maps.

Students will be able to....	Core Courses and Experiences											
	100	105	107	115	202	216	312	327	401	423	430	Prac
Identify...	I	I	R		R			R	M			
Design....	I	I		I	R		R			M		M
Analyze...			I			R		R		R	M	
Evaluate...			I			R		R			R	M

Program-level SLOs

I = introduction  
R = reinforcement  
M = mastery

2. Determine whether any potential measures exist

Review the curriculum map to determine courses/experiences in which measures may exist. Types of existing measures include:

- Key assignments embedded in a course (also called “signature assignments”)
- Key questions embedded in an exam for a course
- Licensure exams or related requirements

3. Review whether potential measures meet characteristics of effective measures

For instance, when evaluating existing **key assignments**, consider the following questions:

- How many sections of the course are there? Is the assignment used in all of them (or can it be)? <Reliable, Valid, Feasible>\*
- How is the assignment scored? <Reliable, Valid>\*
- Is the measure consistent with the (Bloom’s) level for the associated learning outcome? <Valid>
- Does the measure comprehensively address all aspects of the learning outcome? <Valid>
- Does the assignment address only the knowledge/competencies described by the learning outcome? <Valid>
- What type of information does scoring the assignment yield? Is it the sort of information that facilitates developing hypotheses for results? <Actionable>\*
- Is it easy to collect data using the measure? <Feasible>\*
- Is it easy to analyze the information collected to determine results? <Feasible>\*
- Can the assignment be used for student grading as well as program assessment? <Feasible>
- Is the assignment a substantive assignment for the course? <Meaningful>
- Does the assignment provide information that meshes well with the other measures? Does it add something new? <Converging>

*\*Employing rubrics can address potential shortcomings in these areas. Consult the [Assessment Website](#) for more information on rubrics.*

Similarly, when evaluating existing **key exam questions**, consider the following questions:

- Is it an objective test? Or, is there a scoring guide? <Reliable>
- Does the measure use just the key questions that are mapped to the outcome (rather than the entire test)? <Valid>
- Are questions embedded in the appropriate test in all sections of the course? And is the material/competency taught in all sections? <Valid, Feasible>
- Are distractors (incorrect response options in an objective test) well-developed? <Actionable>
- Is item analysis possible? Easy to do? <Actionable, Feasible>
- Is it easy to collect results? <Feasible>
- Is the exam a substantive one for the course? <Meaningful>
- Do the exam results provide information that meshes well with the other measures? Do they add something new? <Converging>

4. Develop new measures as necessary, adhering to characteristics of effective measures

For all outcomes without existing measures, review the curriculum map to determine potential courses or experiences in which measures can be developed. Be sure to develop these new measures adhering to characteristics of effective measures.

***Additional information***

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