

# Assessing Student Learning: Overview

September 12, 2011 R. W. Larsen

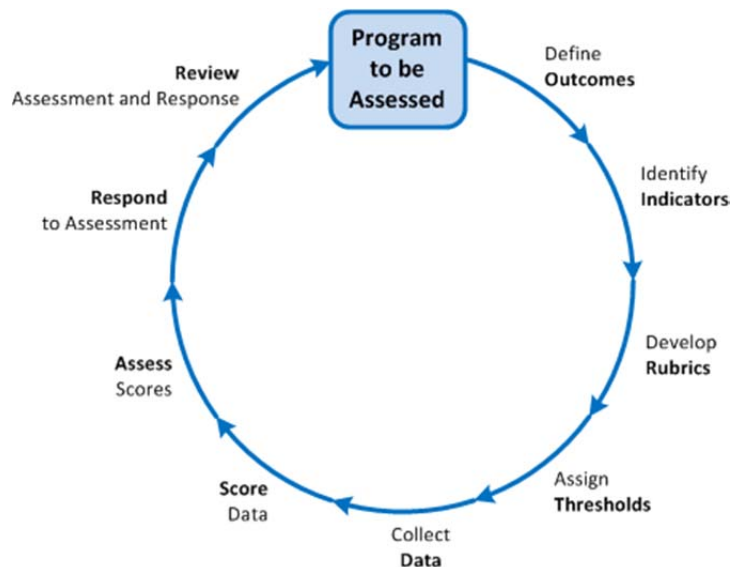
There are a variety of assessments that can and are done at a university. The primary assessment of degree programs for accreditation purposes is focused on verifying that students actually achieve the stated *learning outcomes* for the program. Montana State University's accreditation agency (NWCCU) makes the following statement in their Standards for Accreditation document:

*The institution documents, through an effective, regular, and comprehensive system of assessment of student achievement, that students who complete its educational courses, programs, and degrees, wherever offered and however delivered, achieve identified course, program, and degree learning outcomes. Faculty with teaching responsibilities are responsible for evaluating student achievement of clearly identified learning outcomes.*

Assessment is not just a good educational practice, it is a required component of our accreditation process. The assessment process requires the participation of all instructional faculty members, but if the assessment process is well designed, the time required for assessment can be controlled.

The purpose of this document is to provide an overview of the assessment process. There is a companion document, **Developing an Assessment Plan**, that goes through each step in greater detail.

The basic assessment process for a degree program is diagrammed below:



The process is designed around continuous improvement, and is based on an annual cycle (although not all elements need to be assessed every year – more on that later.)

## Steps in the Assessment Process

### 1. Define Desired Learning Outcomes

What do you want your students to learn by completing the program? At the program level, this is typically a list of 5 to 12 fairly general statements. (Additional detail is provided in the learning outcomes for each course in the program.)

Example: *Students will be able to communicate effectively and professionally in writing.*

**Learning outcomes are the characteristics or skills that each student is expected to acquire by completing the educational program.**

### 2. Identify Indicators of Student Achievement

What items in your program can be used to determine whether or not the learning outcomes have been attained? For example, if “*Students will be able to communicate effectively and professionally in writing*” is one of the program outcomes, then a major report in a capstone course could be a good source of data to be used as an indicator for this outcome.

**Hint: By choosing indicators primarily from upper-division courses, you are focusing more on what the students have learned (somewhere), rather than on what is covered in a particular course.**

### 3. Develop Scoring Rubrics (when needed)

Scoring rubrics are used to identify desired characteristics in student examples, and assign numerical scores to the indicators. (Some indicators are numerically scored, so rubrics may not be needed.) For example, common characteristics associated with written communications include organization, clarity, and grammar and punctuation. The grammar and punctuation category might have the following options:

- Unacceptable (0) – Five or more grammar or punctuation errors per page.
- Marginal (1) – Three or four grammar or punctuation errors per page.
- Acceptable (2) – One or two grammar or punctuation errors per page.
- Exceptional (3) – Very few grammar or punctuation errors in the report.

**Developing useful scoring rubrics can take a lot of time – but a lot of rubrics have already been developed, and the authors are willing to share. Don’t think you have to do it all yourself.**

#### 4. **Assign Response Thresholds**

The response threshold is the performance level that requires the faculty to respond by taking action to improve student performance. That is, when the average student performance falls below a designated response threshold, some faculty response is called for. Typically, the faculty would meet to discuss the issue and try to find a way to improve student performance in the area.

**Common response thresholds might be: “On average, students will perform at an acceptable or higher level on all indicators” or “80% of students will answer the embedded assessment question correctly.”**

#### 5. **Collect Student Performance Data**

The indicators are typically related to:

- Examples of student work from courses
- Standardized questions embedded in examinations
- Results of pre- and post-testing
- Survey data from various sources
- Performance data on professional examinations

This data are collected for scoring as available.

**Remember: Summative results such as scores on exams or course grades are not used as assessment indicators – but results on a specific question or small set of questions may be used.**

#### 6. **Score the Data Using Rubrics**

It is recommended to make use of samples of student work to control the time required to score the data. Scoring can be done immediately or as part of an assessment “event” (e.g., faculty retreat). Small groups of faculty members can score individual assignments. For example, a sample of six student reports might be scored by three faculty members. Each faculty member would score two reports.

**The faculty member that collects the samples of student work (from his or her course) should not also do the scoring. Other faculty members (or other qualified individuals) should score the student samples.**

## 7. Assess the Scores

Once the scores are assembled, the assessment begins by comparing the scores to the threshold.

- If the scores are above the thresholds, no response is needed.
- If some scores fall below the thresholds, then the assessment process includes a discussion of options on how to respond.

**The Assessment Coordinator can collect the scores and check the thresholds. The faculty only needs to be involved when the scores fall below the thresholds.**

## 8. Respond to the Assessment

If a response is required, the faculty decides what action(s) to take to try to improve student performance.

**The Assessment Coordinator should report the following in the Department's annual Assessment Activity Report: (1) Outcomes assessed, (2) Types of data collected, (3) Results of the assessment, (4) Actions taken in response to the assessment results.**

## 9. Review the Assessment and Response

Generally, some external authority is asked to periodically review the faculty's assessments and responses. The Provost's Office staff will review the Assessment Plan and Annual Assessment Activity Report, but Departments that have external advisory committees often ask the members of those committees to participate in the assessment process in this way. When a review (other than by the Provost's Office) takes place, this should be documented in the Department's annual Assessment Activity Report.

## **Variations on the Annual Assessment Theme**

While something is assessed each year, in practice, many items in the assessment cycle change infrequently and do not have to be assessed each year.

The following items are typically reviewed and updated once every few years:

- Learning Outcomes
- Indicators
- Rubrics
- Thresholds

The Assessment Plan should indicate how frequently each item will be reviewed. When any of these items is reviewed, even if not changed, that should be reported in the Annual Assessment Report. If any item is changed, the Assessment Plan should be updated to reflect the change.

It is not necessary to assess each learning outcome every year. To balance workload, student performance on perhaps one-third of the learning outcomes might be assessed each year. The

Assessment Plan should include a schedule showing which learning outcomes will be reviewed in each year of the Plan.

## Collecting Data for Assessment of Student Performance

There are options for how the required data for each assessment might be collected:

- Data might be collected every year, and the combined and used for the assessment, or
- Data might be collected only during the year when the assessment based on that data is performed.

The decision on how often to collect data depends largely on what is required to obtain a reasonable sample size. For example, when the number of returned surveys each year is small, you may want to collect survey results for three years and use the combined data for the assessment. However, if there are 80 students in a class and their reports are used for assessment, it is easy to get a reasonable sample size from a single class, so that data might be collected and assessed once every three years.

## A Typical Year in Assessment

- **Early in the academic year** – one or more of the following items are reviewed, and updated if needed:
  - Learning Outcomes
  - Indicators
  - Rubrics
  - Thresholds
- **During the academic year** – the data required to assess approximately one-third of the program's learning outcomes are collected and scored in preparation for the year's assessment activities.
- **Near the end of the academic year** – the combined scores are assessed to see how the students are performing on each of the learning outcomes being reviewed that year. If the assessment results indicate that program changes are required, the faculty decides what changes to make. Any changes are implemented for the following academic year. The Department's annual Assessment Activities Report should list:
  - Each item that was reviewed and/or updated.
  - The types of assessment data that were collected.
  - The results of the assessment of student performance.
  - Any changes made to the program in response to the assessment process.

## Embedded Assessment

When program assessment indicators are built into courses, the practice is termed *embedded assessment*. There are two ways to accomplish embedded assessment:

- Use an existing course item score as an assessment indicator – When a program learning outcome can be very closely tied to a skill that is tested in a course, the score on that course item might be useful as an indicator for program assessment as well.

- Develop an assessment indicator that can be built into a course.

Some care must be exercised when selecting existing course item scores as assessment indicators. For example, a capstone course with a significant written report is a good candidate for assessing the program learning outcome *“Students will be able to communicate effectively and professionally in writing.”* But if the report score is based on things other than written communication skills (such as experimental design, statistical analysis, etc.) then you may need to separate out the various components and use only the “writing score” as the embedded indicator. (The other components might be good indicators for other program learning outcomes.)

### **Data: Good, Bad, and Loosely Correlated**

When choosing data to use as indicators for assessment, you want the data to be directly tied to the learning outcome to be assessed.

- Course grades are always popular with faculty members, but they are typically based on a lot of information beyond a single program learning outcome. Look instead for scores on one or more particular items on course assignments or examinations that are more directly related to student performance on a single learning outcome.
- The faculty members assessing student performance should not also be the faculty member instructing the course from which the student work samples are taken. This is intended to protect the assessment process from potential bias.
- Student surveys are a quick way to generate data, but self-reported survey data are regarded as lower quality (indirect) indicators for assessment. They are sometimes used, but direct assessment methods, such as scored rubrics from a faculty member (not the instructor) on a sample of student work, are preferred when it comes to determining student performance on a learning outcome.

### **Time Management**

It is possible to design an assessment plan that will consume massive amounts of time and effort. However the following ideas will help you keep the task under control:

- **Use a limited number of program learning outcomes** – you are allowed to have 7 or 70; 70 will take a lot more work to assess.
- **Don’t try to assess everything every year** – you should plan to have assessed everything once every few years.
- **Use embedded assessment** when it works (it doesn’t always)
- **Ask for help** – there are people on campus that have done this for years and have learned how to create a manageable plan. My job is to help the departments at MSU get this done.

Ron Larsen  
Associate Provost/Accreditation Liaison Officer  
406-994-4371  
ronl@montana.edu