Data Collection

Data collection for assessment purposes occurs throughout the academic year. Your assessment plan points to the specific courses and student experiences that will be used to measure student learning. As the collection of data is critical to your assessment planning, interpretation, and reporting, please ensure that your plan is detailed in the information that must be collected; if you find that it is not consider the issues from your most recent data collection efforts and consider modifying your plan with additional details.

Best Practices for Collecting and Preparing Student Works

In order to conduct the assessment process properly, examples of student works must be collected from the pre-determined courses in the appropriate samples. As part of this process, there are a few considerations to make:

- **Inform instructors in advance:** As courses are established and instructors selected, it is beneficial to inform faculty of the course of which materials to prepare for assessment. If the course identified has multiple sections, the assessment committee should determine which course numbers will be selected for the sample. As these courses may only be offered once within the academic year and faculty may go on sabbatical or become involved in other endeavors, this will help ensure that student works are captured for the assessment review process.
- **Confidentiality and Informing Students:** An additional reason for informing instructors as early as possible will be so that communications can be made to students. Instructors will be able to provide language within the syllabus detailing how the assessment process works and how their samples will be used within the assessment process. Students should be included in the assessment process as much as possible, and should be informed of their role in the program's assessment activities. In addition, students may have questions of anonymity. To protect student confidentiality, all identifying information should be removed in the review process and replaced with unique identifiers designed specifically for the review process. The purpose of assessment is not to look at individual strengths or weaknesses, but aggregated summaries of performance across a cohort of students.
- **Clean, ungraded data:** Student works provided to the assessment committee for review should have comments, feedback, grades or any such marks removed to avoid bias for the reviewers.
- **Requesting University Data:** Three year reports (Survey responses at the program level for participants in the last three years) at the program level are generated annually and loaded to the website here. If you do not have permission to access these reports, please contact your assessment coordinator to request permissions or to receive your department's report. Instructors and administrators should also have access to course evaluation data through the Course Evaluation interface.
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Best Practices for Assessing Student Work

- **Multiple Raters:** Consensus within the department is important when considering student performance. This can best be achieved through a review involving more than a single member of the faculty staff. A process of multiple reviewers will allow for any inconsistencies in expectations to be discussed and will hold for a higher validity of assessment findings. For any new rubrics, or even new reviewers brought into the process, it is worth considering a test of inter-rater reliability. This will help clarify any ambiguities in the assessment tools.

- **File Electronic or Hard Copies:** Once student work has been reviewed, it is preferable to save the results of the assessment data collection electronically for future reference. If this is not possible, hard copies should be stored for at least three years.

Assessment Measures and Resources

The most commonly used assessment tools are exams, portfolios, rubrics, and university data (e.g. surveys, course evaluations)

- **Rubrics:** For any subjective assessment (papers, capstones, dissertations, etc.), rubrics are the most common method for determining student attainment of outcomes. However, when designing a rubric there are a few considerations to be made. First, is the work being addressed holistic or analytic. The difference between these types is that a holistic rubric will result in a single score, thus the criteria being assessed consists of related properties that will be assessed holistically. An analytic rubric consists of criteria that are assessed and scored separately resulting in a composite score. The other element to consider is whether the rubric consists of checklists, ratings, or descriptions. A checklist rubric consists of checkboxes that indicate whether a criteria exists or not. A rating scale rubric determines the level to which a criteria exists in a work or not. A descriptive rubric keeps the ratings but replaces the checkboxes with spaces where brief descriptions can be written to explain the rating. For programs that want to include outcomes that may seem ambiguous or difficult to measure, consider using AAC&U's Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics. The rubrics were developed as part of a large FIPSE-funded project. More about the project can be found at http://www.aacu.org/value/ . The rubrics can be downloaded, free of charge, at http://www.aacu.org/value/rubrics/index.cfm . Although the rubrics were developed for undergraduate education, they can also be used to measure graduate work.
- **Exams:** Either as an objective or subjective assessment, exams can be used for outcome indicators for the completion of a course. When designing an exam both for a course as well as a program assessment, it can be helpful to design a blueprint for the exam. This will help ensure all learning goals are represented and balance among conceptual understanding and thinking skills is struck. This will make the writing of the questions for the exam easier as it is clear what knowledge and which skills a student must demonstrate to meet the learning outcome. Additionally, the test blueprint will make it easier in the review process to pair questions back to their appropriate outcomes, as well as allowing for an in-depth review of the demonstrated skills of each section of the test.
- **Portfolios:** A portfolio can be an effective assessment tool as it allows a student to display a wide variety of learning and skills. Portfolios can show the value added of a student's education as it can demonstrate development across the program. Additionally, portfolios require student reflection upon their work for inclusion in the portfolio, allowing the student to choose how to document their achievement of learning outcomes. This process further involves the student within the assessment process and allows for a very holistic review of learning for students and faculty. Though meant for programs with a smaller number of graduates, any program should be willing to engage in this assessment tool.
- **University Data:** Though indirect, it is important to consider the attitudes, dispositions, and values students assign to their education and learning outcomes. The best method for collecting this information is through the graduating and alumni surveys or course evaluations. This data indicates student's reflections on their education as a whole in addition to student's behaviors after obtaining the program's learning objectives. This data can provide new insight into growing fields, and expanding learning opportunities to be explored for current students.

Interpret Results

Summarizing/Analyzing

Determine the best analysis for your data. The most helpful quantitative information will be tallies, percentages, overall/sub scores, or averages. Your assessment plan should detail the type of analysis you will present to determine the performance criteria of the year's cohorts, however additional analysis may help explain the results of your findings or allow a deeper look at issues of concern or remark. Qualitative summaries, though more difficult to use for performance criteria, may also produce interesting findings when looking at the grouping of issues, themes, accomplishments, and other issues under investigation. A qualitative assessment may provide the most useful data however, when an issue is detected or a performance criteria has not been met and you are interested in determining causes for student performance at unexpected levels.

If student performance met your expectations, consider components of the program (or of your assessment processes) that you believe contributed to this result. What does this tell you about student learning in this program? You may discuss a recent program change that you believe helped to improve student learning related to the measure. You might decide to focus on ongoing aspects of the program that are particularly strong and should be highlighted. You might also believe that the assessment measure(s) used were particularly well-suited to the outcome and provided high-quality information. Conversely, you might be less than satisfied with student performance, and conclude that one or more of your measures or performance criteria prevented you from identifying that.

If your data indicated that student performance did not meet your expectations on a measure, consider components of the program (or of your assessment processes) that you believe contributed to this result. Are there foundational concepts or theories that students did not adequately apply near the end of their program? If so, at what point in the curriculum could that content have been more strongly emphasized? Was a standardized test used as one of your measures not sufficiently related to your curriculum to adequately measure your students' knowledge? Are the admissions standards for your program too lenient? You might be pleased with your students' performance on the measures used, and now realize that your performance criterion was set at an unrealistically high level. Program faculty, as the experts on the curriculum, are the best suited to judge why student learning on a measure - or for the outcome - did not meet expectations.

What about mixed results? If one performance criterion was met and the other was not, you will need to interpret the information available in order to determine whether graduates possess the knowledge or skill of the outcome. Consider the following scenario:

- **Measure 1** is supervisor evaluations from an internship experience that requires students to apply their skills in a real-world environment. The performance criterion states that 80% of students will earn an overall rating of 'Meets Expectations' or 'Exceeds Expectations' from their supervisors. Your data indicate that 85% of the students received overall ratings of 'Meets Expectations' or 'Exceeds Expectations.'
- **Measure 2** is an exit survey that asks how well prepared students believe they are for employment in the profession. The performance criterion states that 85% of respondents will report that they believe they are "Well

Prepared" or "Very Well Prepared" for employment in the field. Eighty percent of respondents reported that they felt "Well Prepared" or "Very Well Prepared" for employment in the field.

You might believe that the internship is strongly related to the professional skills needed for entry-level positions in the field, and good supervisor evaluations indicate that the students are well-prepared for employment. If so, you might decide to assign greater weight to the evaluations than to the survey responses and conclude that the outcome was met.

Or, you might know from previous experience that the internship supervisors give high ratings to everyone, even students that you know performed poorly. In this case, you might assign greater weight to the survey responses than to the internship evaluations and conclude that the outcome was not met.

These situations require your professional judgment as faculty. There is no 'right' answer. The important thing is for program faculty to interpret the data about student learning and determine whether students have satisfactorily demonstrated the knowledge or skill of the outcome.

If there are ever doubts, consider additional indirect measures. If a performance criteria is not met for a writing example, consider looking at performance in a prerequisite course. Is there a trend of lower performance or is this an isolated incident in student performance? Looking for appropriate patterns in student performance may help identify additional issues for improvement or may help you determine that the measure used in the given year is not the most precise indicator towards measuring outcome achievement. Wherever possible, especially if results are in question, corroborate your findings with related data points.

For your interpretations, it might also benefit to review additional benchmarks and standards in addition to the performance criteria. These may help shed light for new understanding of issues, or might provide a more accurate criteria to which the outcome can be assessed. Some additional types of standards are listed below:

1. **Value-added benchmarks:** comparing scores to scores on a similar or the same assessment measure over time can show how learning gains or detriments have developed over time.
2. **Strengths and weakness standards:** analyzing the subscores of an assessment against one another can help illuminate the areas of struggle and success for many students.
3. **Best practice standards:** think about the best performance possible and determine what elements may be lacking between the recorded student abilities and the ideal student performance. This practice of benchmarking will also be helpful even when all performance criteria have been obtained and further learning achievements are sought.

Who will use your findings?

When interpreting your results, successes and strategies for improvement, consider how to best present and disseminate the information to your audience. How is the best way to present data to members of the faculty, staff, and administrators who will be focused on improving the program but may also have their own likes and dislikes within the program? Decisions about directions for improvement are always best when made in consensus with other members of the program where multiple perspectives can be considered.

How about stakeholders of the program who may look to you for accountability? Students are the most direct stakeholder who will look to a program for its success. Consider the methods for answering students concerns and criticisms when even their own needs and priorities may be shifting as they move through the program.

Many members of the university faculty find assessment reporting to be unsettling. Please be assured that the purpose of assessment is not to tally the number of programs that met (or did not meet) one or more of their outcomes. We do not compile such data, nor do we report them out to ASU administration, to ABOR, to accrediting bodies, or to any other party. The purpose of assessment is not to penalize programs that may not have met all their outcomes or to reward those who did. The purpose is to provide an honest and accurate look at where we believe our students fully meet our learning expectations, where we've identified room for improvement, and the strategies we've identified to improve student learning.

Make Changes

If the assessment data indicate that program graduates possess the knowledge or skill of an outcome, program faculty may determine that they have nonetheless identified opportunities for improvement in course content, instructional methods, assessment processes, or other program components that will be implemented during the next assessment cycle. Or, they may determine that they are satisfied that they have adequately measured student learning on the outcome, that program graduates possess the knowledge or skill of the outcome at a satisfactory level, and that no further action is needed. At that point, they will decide whether to include this outcome for consideration in the next assessment cycle or to replace it with another one.

If the data indicate that program graduates do not possess the knowledge or skill of the outcome, program faculty should examine the factors they believe contributed to this result, and identify any corrective measures to be taken. Some examples are:

- Addition of course content, tutorials, assignments, or other things designed to reinforce learning on the knowledge or skill of the outcome;
- Change in course sequence or prerequisite;
- More stringent admissions standards; and
- Others identified by program faculty.

If the data indicate that program graduates do not possess the knowledge or skill of the outcome, program faculty may determine that student performance on the outcome is satisfactory, but that either the assessment measures selected or the performance criteria established provided an inaccurate view of student learning on the outcome. In this case, program faculty may decide to modify how the outcome is measured, or to reconsider the threshold identified in the performance criterion.

No matter what the proposed revision may be, there are a number of simple steps that will help ensure the interventions effectiveness:

1. **Create a timetable of implementation.** An intervention may be a simple modification or may be a multi-tiered rollout of services and instruction. A timetable of revisions will allow a clear objective and will help the program determine when improvements may begin to be detected. Formative assessment can additionally occur to ensure that the intervention is working as intended.

2. **Inform all relevant parties with clear and precise directions of their role in the intervention.** All members should be aware of the direction sought as well as the role that they will play towards achieving an outcome.
3. **Include the outcome in the subsequent assessment cycle.** This will allow faculty to reexamine the issues related to student learning on that outcome.

Report Process

In your annual assessment report, which is due on September 30, you will provide a brief summary of your data collection, results, and plans to impact student learning in the coming year.

For each outcome you will be asked to provide the sampling distribution; this includes how many data points were assessed for each measure and what this represents of the target population (e.g. the number of program majors who completed the course paper being assessed, the total number of graduates defending their honor's/thesis/dissertation). Space will additionally be provided if you felt there were any issues in the data collection process that you would like to note; this is an optional field.

When all measures have been assessed and marked as met or not, you will be asked to detail whether the outcome was met or not. Consider the information discussed in interpreting results and additional methods that may elucidate any portions of the assessment process, curriculum, instruction, etc. that should be changed or investigated in the coming year.

On the last page of your report there are details of where you will update your assessment plan to indicate the outcomes, measures, and performance criteria for the coming year. The creation of a new assessment plan represents the completion of an assessment cycle as well as the beginning of a new cycle. The new assessment plan may include the same outcomes used during the previous cycle, or it may include new outcomes.

If outcomes from the previous cycle are included in the new assessment plan, the choice of measures and performance criteria will be determined by program faculty. The information in the "Interpret Results"section may be helpful.

When planning assessment for the new cycle – and possibly for cycles one or more years into the future – it may be important to consider changes that may not produce results in the next cycle. Consider the case of a capstone project used to measure student learning on one or more outcomes. Program faculty may identify some weakness of student's knowledge or skill on one of the outcomes, and implement instructional strategies in a foundation course where the concept is first introduced. If program majors typically take that foundation course in their freshman or sophomore years, it may be two or more years until students who experienced the reinforcement complete their capstone projects and demonstrate the anticipated improvement.

Staggered results such as these may seem to complicate the assessment process, but adequate planning by program faculty can avoid any confusion about the outcomes and measures to be considered across subsequent cycles. We believe that such staggered results serve to reinforce the iterative nature of assessment, as well as the need to study student learning across the full span of the curriculum.

Act on Results

Benefits of Assessment

Assessment is a systematic effort that should involve all members of a program at all levels. At its best assessment can be the catalyst for many positive and lasting changes to the way that students learn in a program

- Encourages faculty and staff to engage together towards the shared goal of program improvement.
- Shifts attitudes towards a learning centered paradigm that focuses on feedback and reflection amongst all members of the assessment community.
- Prevents issues from being neglected. By encouraging investigation, evaluation, and action, it is the hope that resolutions to issues will be enacted to quickly address student, stakeholder, faculty or staff concerns.

Ensuring a Culture of Assessment

Empower and value; try to keep these ideas in mind when carrying forward assessment activities.

Empower

Faculty and staff will be able to perform best when provided with the appropriate resources and information to carry forward initiatives. These resources can be small, such as providing an open door policy for discussions about ideas for improving issues in student learning or to extend upon already successful endeavors. Flexible yet clear and measurable goals will additionally allow members of the program to take initiative and ownership of ideas related to assessment.

Additionally, as difficult as it can become when working towards the success of students in the learning environment, provide space for all members of the assessment process to reflect on their actions and the larger goals of the program. A space for dialogue, workshops, brown bags, or individual professional development can be very helpful towards allowing members of the program to realize potentials for further exploration.

Value

Look to past or current successes. These efforts should be recognized by assessment leaders and where appropriate provided as a framework for further growth and success. Use the data collected from assessment endeavors to further strengthen the program's backing of successful learning initiatives. Successful initiatives should be backed with empirical evidence and important decisions regarding the direction of a program should be based on said evidence. If the values of the program remain on improving the learning outcomes of students, assessment is an auxiliary practice meant to simply support the goals of learning.

Working in a culture of assessment, it is possible that differences of opinion may arise in how to pursue learning goals. Assessment leaders should value all perspectives on the issues, and pursue the path of the highest consensus. A culture of assessment is not a culture free of debate, but it should be a culture that values and considers all options and solutions. Additionally, following "empowerment," if individual approaches are possible in conjunction with additional initiatives, these should be considered and studied through the assessment process. Innovation and experimentation should be valued and given the support necessary towards success.

Faculty Actions

The guiding principle for faculty in the assessment process is to ensure the alignment between learning goals and instruction. There are a large number of steps that faculty can carry forward; this section will cover just a few suggestions for the process of improving assessment activities and learning achievements.

1.   **Analyze curriculum.** This within itself also has a multitude of possible actions with a few addressed here:

> a.   Curriculum mapping: This will allow a program to analyze the key courses in a student's academic progress to see where learning opportunities arise. By detailing the goals and the degree to which goals are addressed in a course, programs can assess where new learning opportunities may best arise or where gaps might exist within the curriculum. You may also find that while a learning goal is addressed, perhaps no required course examines it to the depth you would expect.

> b.   Syllabus analysis: This will be the best method for determining, in more depth, the criteria and expectations within a single course. Perhaps a process of reviewing syllabi on a regular rotation may be beneficial to ensure courses delve into the expected material and that student expectations can be fully realized with the correct products of the course (test, paper, presentation, etc.)

2.   **Develop internal principles of best assessment practices.** You know what will work best for your program and its needs. Leaders should provide a guideline of expectations and responsibilities. Assessment can seem like a daunting process, however all members should see the larger goal and know their role towards that goal. Simply clarifying language such as goals vs. outcomes or providing templates or rubrics, can make large steps towards ensuring internal consistency and steady direction in the assessment process.

3.   **Professional Development.** Take advantage of professional development opportunities to be aware of contemporary teaching methods. Allow time for reflection and contemplation on your own personal performance to see if organic changes can begin within your own courses. These changes can be assessed and may provide a new model down the road for others to follow.