Assessment of Learning Outcomes

Handbook

Assessment of Learning Outcomes is an important part of improving student learning, building community, and promoting equity across UMSL. This handbook provides departments and faculty with tools for thoughtful assessment of learning outcomes for degree programs. This handbook also discusses what assessment means for faculty, students, and the institution overall. Through this handbook, you will understand why assessment matters, and how to conduct beneficial, sustainable, and actionable assessment for your degree programs.

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Purpose of Degree Program Outcome Assessment

"Assessment" is a term that can often feel heavy or intimidating. Similarly, "assessment" can mean a variety of different things, depending on the context and purpose of invoking the term. To begin this handbook, we feel it is helpful to explain what we mean when we discuss "assessment plans" and "degree program assessment" at UMSL. We will offer local, contextual nuance to assessment, discussing what thoughtful assessment can mean for our faculty, students, and the institution overall. We will illustrate why assessment matters and how it can be beneficial, sustainable, and actionable.

What is Degree Program Assessment at UMSL?

Degree Program Assessment focuses on entire degree programs and improving student learning

When we discuss assessment in this handbook, we are referring to degree program assessment. Degree program assessment focuses on coming to a deeper understanding of the curriculum of an *entire program*. A driving question at the core of degree program assessment is: how are students meeting the program's designated learning outcomes? Assessment of degree programs is broad and ongoing; it is a process committed to improving student learning. While other important findings might arise that are helpful to departments, the central goal is to continually enhance students' experiences in the degree program and to support their learning. Faculty design their own assessment plans, study evidence from their own programs, analyze that evidence, and make decisions about how to take action based on what they learn. In this way, degree program assessment empowers departments which, in turn, empowers students.

Degree Program Assessment is inquiry-driven and and guided by faculty

We understand degree program assessment to be in the hands of faculty and designed to empower departments to continue to do their best work. Assessment is inquiry-driven as well. In particular, questions that arise from departments will be at the center of a meaningful degree assessment plan. As degree program assessment begins, departments will have an opportunity to (re)consider and (re)imagine their work via evidence-based inquiry:

- What do faculty want to know about learning?
- What is the faculty vision for the program and the students?
- How can faculty learn more about students and strive for that vision?

Inquiry in degree program assessment looks different for different programs. However, degree program assessment should use a variety of direct and indirect methods *(see section VI)* of measurement and draw from a variety of evidence. Methods and measurements are best decided upon by stakeholders in the programs, ideally through thoughtful conversation among all faculty and potentially student representatives, as well.

Degree Program Assessment is Phase 4 of the Curriculum Alignment Process

Degree program assessment is part of the Curriculum Alignment Process (CAP); this work is already underway in your department. Over the last two years, all departments have engaged in the CAP phases 1, 2, and 3. Departments developed learning outcomes for their programs and mapped their curriculum onto those learning outcomes. Degree program assessment is the next phase of CAP.

Why Assessment Matters: The Benefits of Assessment

Meaningful assessment offers many benefits to programs that ultimately make curriculum building and teaching more attentive to students, more in tune with faculty expertise and interests, more aligned with disciplinary norms and expectations, and more streamlined and sustainable in terms of workload.

Faculty Expertise Matters

Students at UMSL value the depth of study and range of expertise of faculty; faculty knowledge, creativity, scholarship, and commitment to teaching are important to them. These attributes matter to assessment, as well.

Assessment is a process that focuses on faculty expertise and input. Faculty expertise is what will maintain the strength of degree programs through the assessment process, as well as letting programs evolve and improve based on the evidence they collect. Assessment cannot work without this input.

Degree program assessment is a valuable form of research that can be applied to affect student experience, faculty experience, and the reputation of the university in positive ways. Assessment can support faculty as they narrate the stories of their programs to external audiences, such as accrediting organizations, potential students, or university administrators.

Students Matter

Degree program assessment is focused on student learning. This is worth emphasizing again, as it is a central benefit that assessment brings with it. Assessment matters because it helps faculty, and the institution more broadly, to better understand the students.

We know from our own teaching that student dynamics change: their needs, their goals, and what works well for them as learners shift over time. As students change, our teaching must change with them. Faculty have adapted to changes by designing new activities, moving courses and assignments online, and experimenting with new course materials, to name a few. Degree program assessment provides a way to take changes and experimentation beyond just a single

class. Assessment provides a way to collect evidence about these ever-changing needs of students in a way that reflects on entire departments and programs.

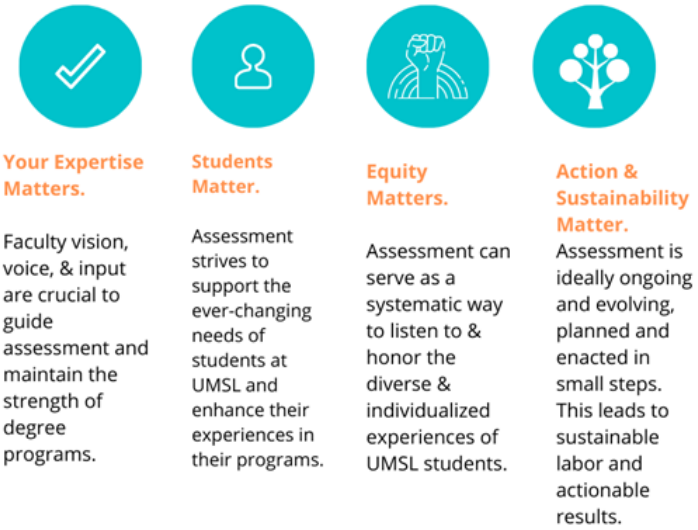
Equity Matters

With an awareness of the ever-changing needs of students, UMSL is committed to the diverse and individualized needs of UMSL students. Assessment allows for programs to incorporate the experiences of different demographics of students. Assessment provides an opportunity to listen deeply and attentively to students in an equitable manner, building a system which continuously listens to students whose experiences might have been historically marginalized, seen as outliers, or flattened in statistical representations. In other words, equity work is always ongoing, and assessment allows for a methodological approach to keep it moving, starting from the very heart of what degree programs want to accomplish, their learning outcomes.

Action and Sustainability Matter

Finally, assessment matters because it builds in ways to take action based on what programs learn. Degree program assessment aims to incorporate inquiry of faculty, the needs of students, and pursue equity and improved learning experiences. A key and exciting aspect of degree program assessment is that the process creates space for *action* after the data and evidence are collected and analyzed, making programmatic decisions and revisions based on what departments and faculty learn about programs.

Another key benefit to degree program assessment is that it is collaborative and ongoing, which means it will happen through small, well-organized steps. Assessment does not need to be one enormous and heavy undertaking every five years; instead, degree program assessment is a process composed of small moves, maintaining momentum. Once the process is established, an ongoing, paced assessment process will feel manageable, sustainable, and actionable. In fact, assessment research and models from other institutions indicate that a sustainable assessment process can be less laborious and make subsequent actions and revisions in programs more do-able. Degree program assessment can productively overlap with other aspects of departmental tasks or evaluations, such as five-year reviews or discipline-specific accreditations.



Why Assessment Matters: Other Benefits of Assessment

Assessment matters in concrete and powerful ways, improving educational experiences for all stakeholders. But there are other benefits of assessment that particularly enhance faculty satisfaction and departmental interactions. While the benefits listed below are not directly tied to the goals of degree program assessment, they are frequently cited and celebrated in assessment scholarship, and are undoubtedly part of why assessment is a worthwhile, meaningful undertaking.

Departmental Community

Assessment work builds connections within programs as faculty come to understand shared commitments and values for learning. The assessment process provides an opportunity for deeper connection among faculty, students, and department staff. Building community, although not an intended outcome of assessment, provides a space for collaboration towards a common goal of improved learning and the learning environment in departments.

Outreach

As departments design an assessment plan, they can learn that this process allows for a better sense of what they do and why what they do is so effective. Departments can discover ways to be more transparent and communicative about their work, reaching out to current students, to prospective students, to administrators, to community organizations, grant foundations, and other interested stakeholders. Assessment can help departments narrate their successes and tell their unique stories; the audiences for such storytelling and outreach are endless.

A Meaningful, Sustainable Process

As discussed throughout this guide, assessment is a meaningful process that leads to growth.

The process of assessment often involves:

- Departmental reflection, discussion, and revision, which prompts learning more about students, as well as part of degree programs that faculty might not be as familiar with.
- From there, departments develop programmatic structures and plans to stay current in their field(s) and be connected with the campus community.
- Because assessment is designed to happen in small, ongoing steps (rather than one giant lift or fell swoop), the work is do-able and the growth sustainable. In other words, an ongoing assessment process, while not simple and certainly daunting at the start, can ultimately be less laborious once enacted because processes maintain their momentum and also can inform other departmental work, such as reviews or accreditation.

Principles of Good Practice for Assessing Student Learning

The next piece to designing an assessment plan is developing a process that will lead to a sound assessment. What are some guiding principles of assessment practice? What are the values and commitments that undergird assessment? In this section, we outline some broad and flexible guideposts for degree program assessment that center on learning outcomes and improve student experiences.

The AAHE 1992 Principles of Good Practice

Link to full list of principles.

In 1992, the American Association of Higher Education established the Nine Principles of Good Practice When Assessing Student Learning. These practices are firmly established and continue to inform assessment scholarship and practice. They are wide-ranging and adaptable for any program, and in many ways, offer a philosophy of assessment that nearly any degree program can adapt. The nine principles with some illuminating excerpts are below, and the link above offers more detail on each principle.

1. The assessment of student learning begins with educational values.
"Assessment is not an end in itself but a vehicle for improvement."
2. Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time.
"[Learning] entails not only what students know but what they can do with what they know; it involves not only knowledge and abilities but values, attitudes, and habits of mind that affect both academic success and performance beyond the classroom. Assessment should reflect these understandings by employing a diverse array of methods, including those that call for actual performance, using them over time so as to reveal change, growth, and increasing degrees of integration."
3. Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes.
"[Assessment] entails comparing educational performance with educational purposes and expectations -- those derived from the institution's mission, from faculty intentions in program and course design, and from knowledge of students' own goals."

4. Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes.
"Assessment can help us understand which students learn best under what conditions; with such knowledge comes the capacity to improve the whole of their learning."
5. Assessment works best when it is ongoing, not episodic.
"improvement is best fostered when assessment entails a linked series of activities undertaken over time...The point is to monitor progress toward intended goals in a spirit of continuous improvement."
6. Assessment fosters wider improvement when representatives from across the educational community are involved.
"Student learning is a campus-wide responsibility, and assessment is a way of enacting that responsibility...Thus understood, assessment is not a task for small groups of experts but a collaborative activity; its aim is wider, better-informed attention to student learning by all parties with a stake in its improvement."
7. Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.
"The point of assessment is not to gather data and return "results"; it is a process that starts with the questions of decision-makers, that involves them in the gathering and interpreting of data, and that informs and helps guide continuous improvement."
8. Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change.
"Assessment alone changes little. Its greatest contribution comes on campuses where the quality of teaching and learning is visibly valued and worked at."
9. Through assessment, educators meet responsibilities to students and to the public.
"As educators, we have a responsibility to the publics that support or depend on us to provide information about the ways in which our students meet goals and expectations. But that responsibility goes beyond the reporting of such information; our deeper obligation -- to ourselves, our students, and society -- is to improve."

Further, degree program assessment should aim to include students in the learning process. Students should actively engage not just as participants, but as partners in improving student learning; this includes incorporating the characteristics of the partnerships among students and faculty. Students can become more involved as partners through a variety of different methods. However, faculty and departments need to keep issues of equity in mind when building degree program assessment plans.

Equity-Minded Assessment

A key consideration in all phases of assessment is equity. Assessment offers a unique opportunity to focus on equity in a way that is focused, systematic, and actionable. Questions driving assessment from departments can focus on aspects of equity and, even more, methods of assessment can and should thoughtfully consider diverse student identities.

The National Institute for Learning Outcomes Assessment (NILOA) has, over the past five years, researched and shared what it can look like to center equity in assessment processes. The following broad actions are highlighted in their work. Equity-minded assessment entails:

1. Check biases and ask reflective questions throughout the assessment process to address assumptions and positions of privilege.
2. Use multiple sources of evidence appropriate for the students being assessed and assessment effort.
3. Include student perspectives and take action based on perspectives.
4. Increase transparency in assessment results and actions taken.
5. Ensure collected data can be meaningfully disaggregated and interrogated.
6. Make evidence-based changes that address issues of equity that are context-specific.

Degree program assessment should incorporate meaningful practices that keep in mind both the needs and diverse experience of students. In this way, assessment can reflect the unique dynamics of UMSL students, while offering robust programs in every department. NILOA also offers more in-depth analysis on the process of student learning assessment and on building systems that incorporate developing degrees that lead to meaningful outcomes in other publications.

It is good practice in degree programs assessment to include not only students, but all faculty within a department. Faculty provide the expertise for robust courses and programs, and therefore are needed in every step of the planning process. This can be done in a variety of ways, with each department having its own, unique strategy. Below, we provide guidance on building an assessment plan team.

Identification of Team to Design the Assessment Plan

The assessment plan may be designed by an assessment team in the unit. The charge of the team can be to advise and review program assessment plans, data, and results. The team can also be charged with collection and analysis of data, and present the results to the entire faculty leading the discussions on possible improvements in the program.

The Assessment Team may lead the charge for continuous assessment and improvement with input from the entire faculty in the unit. The leader of the team can be responsible to create the annual reports and to ensure that the proper timelines for assessment are followed. It will also be the team leader's responsibility to ensure participation and elicit input from the entire faculty regarding the assessment goals as well as data collection and analysis.

Deciding on a Team

Even though all faculty members in the department should be involved in the process, there may be a small subset of the department that is charged with certain responsibilities for the assessment. We recommend that an Assessment Team or Committee be formed by the unit leader with input from the faculty. The team can be constituted by faculty who know the entire curriculum for the major; it could also be used to help some junior faculty get familiar with the entire curriculum with respect to the program learning outcomes.

The membership in the team may be term-limited to enable the germination of new ideas and to examine the learning outcomes with fresh eyes over time. Each unit can determine the appropriate term limits for their members. At the same time, it is of utmost importance that *the entire faculty* provide support and participate in the process so that there is consensus towards the goal of improving student learning and the process is self-sustaining over time.

Team Responsibilities

The Assessment Team, in consultation with the faculty in the unit, is responsible for analyzing the data and to create an actionable plan for improvement that will be reported to the Provost's office. The Assessment Team will also produce an annual report that will be used for the following years' assessment activities. The team can achieve this in two ways:

1. The team strives to achieve consensus score for each program learning outcome, or
2. Each member of the team can rank the outcome on a rubric, with the results combined or averaged at the end.

In either case, the goal is to create an actionable plan to improve the student learning outcomes. Every year, the team will examine the progress towards the goal and report on the same as well as improvement in curriculum and course delivery to improve student learning.

The specific responsibilities of the team are enumerated below:

- Lead the faculty to create and revise the program learning outcomes.
- Collect data on peer programs and/or from accreditation agencies regarding the expected knowledge and skills of program graduates.
- Consult with faculty to create the methodology to collect data on student learning outcomes.
- Collect and analyze data from different sources, including student evaluations, focus groups, and institutional research.
- Lead the discussion with the entire faculty to enumerate the goals for improvement.
- Create and submit the report to the Provost's office.

The team leader should make sure that the timeline is followed and the deadlines are met.

Asking Questions / Meaningful Inquiry

The program learning outcomes need to be explicitly defined for each degree program. They include the knowledge, skills, and abilities expected of the graduates of the program. The team tasked with assessment can frame questions to assess the knowledge gained by students in the program. The process of question formulation and the use of data collected by answering those questions is the most important part of developing the assessment plan. The questions to be asked at this point should focus on student learning rather than program evaluation.

Importance of Meaningful Inquiry

Meaningful inquiry is meant to exploit evidence-based solutions to facilitate student learning outcomes. It should make the team ask questions that will help with the end goal of a better learning experience for students.

The assessment team may lead the charge with a formal description of the ***core objectives*** of the degree program. The core objectives include the baseline minimum knowledge required of every graduate of the program. It is important to occasionally revisit the core objectives, possibly based on the reports from accreditation agencies in the field or by a review of the peer programs in other universities. The opinion of recently hired faculty members will be helpful as they bring a fresh perspective and may be more attuned to the recent developments in the discipline.

Crafting Meaningful Questions

The next step is to focus on some critical junctures in the overall trajectory of students' learning. These junctures can be divided into different phases of the program such as formative (freshman/sophomore), summative (junior/senior), and post-graduation (employability). This information leads to the sequence of specific courses where the students gain the requisite knowledge. Additionally, depending on the discipline, some extracurricular activities, such as internships, may also enhance the student learning and may be appropriately accounted for.

Using Learning Outcomes as Assessment Questions

The learning outcomes are formulated to align with assessment methods and measures. Each outcome may be supplemented by the assessment measure/tool. The tools are suggested in a separate document.

Using the learning outcomes, the example assessment questions can be:

- Which students did better on PLO 2, and why?
- What effect did the recent change in program requirements have on student achievement for PLO 4?
- Which knowledge and skills are not successfully transferring from the intro survey course to the next course for a majority of students?
- Did students taking the prerequisite course at UMSL do better on PLO 5 than those who transferred the credit in?
- What impact has Supplemental Instruction (SI), tutoring, or the Active Learning Assistant (ALA) program had on underrepresented student success in the introductory sequence of courses?

The questions can be answered by different means like direct observation, student interviews, and data from institutional research.

Reviewing/Reflecting on Program Learning Outcomes

Part of assessment is reflecting and reviewing Program Learning Outcomes (PLOs) for the various degree programs across the university. This part of the process gives departments the opportunity to ensure that degree programs are keeping up with industry standards and trends. Below, we review what PLOs are and give guidance on how to review them.

Program Learning Outcomes

In the first phase of the Curriculum Alignment Process (CAP), faculty across departments worked with faculty to construct Program Learning Outcomes (PLOs), which are measurable expectations of student learning, curriculum, and teaching that can be assessed to inform faculty, departments, institutions, and students about what to expect from a program. Over the course of two years, departments - through CAP - developed PLOs for each one of their undergraduate programs.

For departments and faculty, the heavy lift of constructing PLOs is already complete and/or underway. However, PLOs, like other parts of curriculum development, benefit from routine maintenance and consideration as fields of study shift and demands from industry change. Departments, along with faculty and college deans, can create a plan to review program learning outcomes regularly.

How to Review Program Learning Outcomes

Departments should set a goal to periodically review PLOs. This timeline will look different for different disciplines, departments, and degree programs, especially depending on the nature of the field of study. For example, industries with ever-advancing technology as core to the field of study might have to review PLOs more frequently than a field of student where technology is not as pivotal.

It is important that the outcomes are developed to measure student learning over the entire degree program rather than individual courses. Additionally, the outcomes should be student-centric

(students should be able to explain concept xyz) rather than faculty-centric (the objective of the program is to teach concept xyz).

This review can be embedded in other established routines, such as 5-year reviews or other assessments that are part of the degree program assessment. It is up to departments and their faculty to determine what system they believe will work best for their programs.

While formulating learning outcomes, the team should ensure that the outcomes specify:

1. Learning that is observable
2. Learning that is measurable
3. Learning that is achieved by students

Like many of the assessment tasks in this handbook, review of PLOs benefit from the input of many stakeholders across the department, campus, and industry. Although many programs have very well-written and established PLOs, regular review establishes new opportunities to expand PLOs to incorporate any changes.

This review provides an opportunity to review programs and their learning outcomes as needed. Some of the participants in this review can included, but is not limited to:

- External (industry) advisory board(s)
- Students and/or recent graduates and alumni
- Faculty within and outside of your department (especially when degrees are cross-disciplined)
- Other industry resources, such as Burning Glass

This review can incorporate many tools that can gather feedback from other interested groups. Surveys, focus groups, meetings, and other methods of feedback can prove to be useful for departments. Departments should establish some sort of plan/system to gather this type of information. This feedback process can take many forms depending on the needs of the department and/or programs.

Choosing Evidence of Student Success in Program Learning Outcomes

Assessment methods are the tools or measures used to evaluate student performance related to a program learning outcome (PLO). For each PLO, the assessment team may indicate how the program plans to assess whether or not students are meeting the expectation as well as when each PLO will be assessed. The learning outcomes may be measured by direct or indirect assessment techniques.

The direct assessment techniques provide an indication of student mastery of knowledge and skills. They may utilize different formats such as completion (testing vocabulary and basic knowledge) and essays and reports (testing higher-order thinking skills involving explanation and justification). Other methods such as embedded assignments and course activities also provide direct measure of student learning with little time constraints to completion.

The indirect assessment techniques rely on the perception of how a student performs, possibly after having completed the program. These include surveys of the employers, exit interviews, and focus groups. These techniques assess the learning outcomes indirectly and may take a longer term view of overall student learning.

When developing a degree program's assessment plan, the assessment team can ensure that the plan following these requirements:

- Each academic degree program is expected to engage in at least one assessment activity per year.
- All of the student learning outcomes must be assessed within a 5-year timeframe.
- Measures may be direct or indirect, but at least one direct measure should be employed for each PLO.
- Programs are encouraged to use indirect measures to complement the required direct measures as these data provide the opportunity to tell us more about the student experience, workforce development, and more.

- Data does not need to be collected on every student but should represent a sufficient number of students for the analysis to yield meaningful results (through sampling or triangulation of data).
- Programs should have a process to routinely communicate assessment results to program faculty (full- and part-time) and a means to facilitate programmatic discussions of the results. These discussions will help the program identify specific actions to be taken.

Direct Measures and Indirect Measures

The direct and indirect measures provide mechanisms to assess student learning outcomes. Specifically, direct measures are employed to measure the student learning outcomes by using techniques such as tests, presentations, and homework. Indirect measures provide the learning outcomes through interviews with employers, exit interviews, focus groups, and job placement data. The measures are enumerated in the table below.

Direct Measures	**Indirect Measures**
Examination: ● Assessments (Exams) pulled from courses with "Mastery" designation on curriculum map ● Pass rates or scores on licensure, certification or subject area tests ● Oral Defense ● Content Area Exam ● Comprehensive Exam Student Product: ● Capstone projects ● Senior thesis ● Written work ● Portfolio ● Student publications ● Signature assignments Student Performance: ● Recital, exhibit, performance ● Lab exercise ● Field experience ● Presentation ● Internship ● Conference presentations	● Focus group interviews with students, faculty members or employers ● Registration or course enrollment information ● Job placement data ● Employer or alumni surveys ● Student perception surveys ● Graduate school placement rates ● Surveys of student perceptions or self-report of activities or attitudes (e.g., NSSE or BCSSE) ● Campus climate surveys ● Student involvement ● Exit interviews ● Retention data ● Majors progress report ● Starfish Analytics insights reports ● Student Course Evaluations

Data Sources for Indirect Measures in UMSL

At UMSL, the faculty members have access to a variety of resources to indirectly measure student learning outcomes. They are enumerated in the table below.

Name of Report	Location of Data	Description
Starfish Analytics Student Explorer	https://umsl.starfishsolutions.com/	• Retention risk modeling: Identify retention risks for student cohorts using characteristics or behavioral outcomes that are correlated with retention • Analyze segments of students who are at the greatest risk of not completing their degree on time
Starfish Analytics Course Explorer	https://umsl.starfishsolutions.com/	• Identify stumbling blocks related to particular courses, instructors and sections, and make changes as needed. Find savings by redesigning courses or collapsing sections. • Examine student success in specific courses or groups of courses by identifying those with the lowest average grades and highest withdrawal and retake rates. • Identify the classes that have the biggest positive or negative correlation with retention and student success. • Slice the data on courses to see the impact courses have on different students from across the institutions to identify trends by degree program or specific student cohorts.
Starfish Analytics Course Trends	https://umsl.starfishsolutions.com/	• Which courses have the greatest C or better difference from section to section? • Which courses have the greatest C or better difference from term to term? • Performance of different sections of a course within a single term • Performance of difference sections of a course from term to term
Starfish Analytics Historical Data	https://umsl.starfishsolutions.com/	• Analyze data to understand trends with students, programs, and drivers of retention and completion. Track performance over time to demonstrate progress, spot trends, and identify areas for improvement. • Compare performance over time and with other institutions, and see which actions have the greatest impact on strategic goals.

Majors Progress Report	Cognos https://reports.umsystem.edu	The Majors Progress Report provides enrollment and degree progress summaries for selected academic plans and sub-plans, including summaries based on undergraduate student demographics, student status, and other qualifiers showing such data as # of courses within the major taken in their first year, differences among students who are on track to degree completion and those who are off-track and more. This data is refreshed annually after the fall census is complete. Can disaggregate data by term, academic plan, sub-plan, ethnicity, gender, age group, Pell status, and first-generation status.
Degrees Awarded	Cognos https://reports.umsystem.edu	Provides a list of students who earned the degree listed associated minors, UMSL and UM GPA, Honors designation
Retention	UMSL Institutional Research Sharepoint Site	Documents referred to by this collection of pages contain retention and graduation rate data for first-time, full-time, degree-seeking freshmen and transfers first enrolling in fall semesters starting in Fall 1997. Visiting and post-baccalaureate students were excluded. This starting point was chosen because it was the first term in which the current admissions standards applied to all new freshmen. • All new students • Gender • Ethnic origin • Majority/minority • Freshmen by composite ACT score • Freshmen by high school core GPA • Freshmen by high school rank percentile • Transfers by transfer GPA • Transfers by transfer hours • Transfers by Associate's degree status • Athletes • Trial admits • Probation status during first year • Honors College students • Applied on time or late • First generation student status • Pell recipient status • Ethnic origin and gender

NSSE	UMSL Institutional Research Sharepoint Site	• The National Survey of Student Engagement provides data with estimates of how undergraduates spend their time and what they gain from attending college. • Collects data from first-year and senior-year students' participation in programs and activities that institutions provide for learning and personal development. • Includes reports showing how UMSL compares with comparison institutions • Reports show engagement indicators, high-impact practices, higher-order learning, collaborative learning, reflective and integrative learning, learning strategies, quantitative reasoning, discussions with diverse others, student-faculty interaction, effective teaching practices, quality of learning interactions, supportive learning environments • Data collected regularly from 2000 – 2019 with a recent pattern of every other year
BCSSE	UMSL Institutional Research Sharepoint Site	Beginning College Survey of Student Engagement collects data related to students' academic expectations and perceptions for the coming year. UMSL currently has data collected in 2015, 2016, 2017, 2019
Academic Program Data	Tableau https://tableau.umsystem.edu/#/signin (you must use um-ad\sso as your username) in Explore -> Institutional Research Production ->	Provides academic program data including • Credit Hours • Degrees • Majors • Faculty

Strengths and Weaknesses of Different Methods

The direct and indirect assessment measures have their own strengths and weaknesses. We have included below the strengths and weaknesses of some of the methods, primarily culled from the document Strategies for Direct and Indirect Assessment of Student Learning by Mary Allen.

Direct Methods

Methods	Features	Strengths	Weaknesses
Standard tests ● Measure of Academic Proficiency and Progress (MAPP) ● Collegiate Learning Assessment (CLA) ● Collegiate Assessment of Academic Proficiency (CAAP)	● May have optional essay section ● Critical thinking ● Analytical reasoning ● Writing skills	● Direct evidence of student learning ● Reliable, professionally scored ● Taken and scored online	● Students may not take tests seriously ● Not useful if they do not align with local curricula and learning outcomes ● May not adequate evaluate higher-level skills ● May be expensive
Locally developed tests ● Completion (Fill-in-the-blanks) ● Essay ● Matching items in two columns ● Multiple-choice ● True-false	● Completion for vocabulary and basic knowledge ● Essay useful for higher-order thinking skills ● Matching to test knowledge of factual information	● Good validity with well-constructed tests ● Easily integrated into routine faculty workload ● Matching easy to score ● Multiple-choice good to assess higher-order thinking; easy to score; popular textbooks may have test banks available ● True-false easy to construct and grade	● Less reliable than published exams ● Creating and scoring exams is time consuming ● Completion scoring difficult if more than one correct answer ● Matching difficult to construct ● Multiple-choice and true-false may tempt to emphasize facts rather than understanding

Embedded assignments and course activities ● Culminating projects (papers in capstone courses) ● Exams ● Group projects ● Homework assignments ● In-class presentations ● Recital/exhibitions ● Comprehensive exams, theses	● Created to collect information relevant to specific learning outcomes ● Results may be averaged across courses to indicate PLOs	● Direct and authentic evidence of student mastery of learning outcomes ● Students motivated to show their knowledge ● Useful for grading as well as assessment ● Data collection unobtrusive to students	● Time to develop and coordinate ● Faculty must trust that program will be assessed rather than individual teachers ● Unknown reliability and validity
Portfolios ● Showcase portfolio ● Developmental portfolio ● Collective portfolio		● Students may become more aware of their academic growth ● Help faculty identify curriculum gaps ● E-portfolios easily viewed, duplicated, and stored	● Extra time required for faculty to assist students with portfolio preparation ● More difficult for transfer students to assemble portfolio if relevant material is not saved

Indirect Methods

Methods	Features	Strengths	Weaknesses
Surveys ● Check-list ● Classification ● Frequency ● Importance ● Linear rating scale ● Likert scale ● Open-ended ● Partially close-ended ● Ranking		● Flexible format ● Can be administered to large groups ● Assess the views of multiple stakeholders ● Inexpensive to administer ● Conducted quickly ● Easy to tabulate and report in tables/graphs ● Open-ended questions may show unanticipated results ● Track opinions across time to explore trends	● Validity depends on quality of questions and response options ● Conclusions may be inaccurate with biased samples ● Small sample size may not provide full set of opinions ● Respondents may not answer correctly ● Open-ended responses may be difficult and time-consuming to analyze

Interviews ● One-on-one interviews ● Small group interviews ● Structured interviews ● Unstructured interviews ● Exit interviews	● Structured interviews are with specific questions ● Questions may be open-ended or close-ended (multiple choice) ● May target students, graduating seniors, alumni, or employers ● May focus on student experience, concerns, or attitudes related to the program	● Flexible format ● Questions can have clear relationship to the outcomes being assessed ● May provide insight into the reasons for respondent's beliefs, attitudes, and experiences ● Respondents can be prompted for more detailed response ● Questions can be clarified ● Distant respondents may be contacted via phone or zoom ● Personal attention for respondents	● Validity depends on quality of questions ● Poor interviewer skills may generate limited or useless information ● Difficult to obtain a representative sample of respondents ● Responses may not be accurate ● Time-consuming and expensive ● May intimidate some respondents ● Results difficult and time-consuming to analyze ● Interview transcriptions can be time-consuming and costly
Focus groups ● Traditional focus groups ● Structured group interviews	● Free-flowing discussion among small homogeneous groups ● Guided by a skilled facilitator	● Flexible format ● May include questions about many issues ● In-depth exploration of issues ● May be combined with other techniques, such as surveys ● May be conducted within courses ● Participants can react to each other's ideas; may provide better consensus	● Requires skilled and unbiased facilitator ● Validity depends on quality of questions ● Recruiting and scheduling groups may be difficult ● Time-consuming to collect and analyze data

Click here for a pdf quick guide to methods of assessment from Washington State University

Using Rubrics

Rubrics provide a measure of the quality of an outcome. They can be used to rank how well a student learning outcome is achieved in the program. They are typically described using performance descriptors that demonstrate progressively more sophisticated levels of attainment. A rubric is typically defined by a matrix to identify the levels of performance on expected outcomes. The analytic scoring rubrics allow an outcome to be broken up into sub-outcomes with a scoring criteria on each of them. For example, a written paper may be graded on organization, grammar, spellings, flow of language, use of references, and treatment of the subject of the paper, with each of them being graded on a prespecified scale.

A rubric is described by four components: description of task, task dimensions, a performance scale, and description of each point on the scale. The task dimensions specify the sub-outcomes and form the rows of the matrix. The performance scale specifies the number of columns in the matrix (typically from three to five) with the description of points providing the column header. A check box corresponding to a task dimension and description of point evaluates the performance for that sub-outcome. The rubric for our example written paper can be described by Table 1.

Rubric for a writing assignment

	Scale: Level 1	**Scale: Level 2**	**Scale: Level 3**
Organization	Needs improvement	Adequate	Exceeds expectations
Subject Treatment	Could be better	Adequate	Exceeds expectations
Grammar	Needs improvement	Adequate	Exceeds expectations
Spellings	Too many typos	A few mistakes	Perfect
Language flow	Difficult to read	Readable	Engaging
References	Needs more references	Adequate	Great job

The Association for American Colleges and Universities has presented a set of 16 *value rubrics* that can be adapted to describe program learning outcomes at the level of campus, discipline, or courses. These rubrics are divided into three classes: Intellectual and Practical Skills, Personal and Social Responsibility, and Integrative and Applied Learning. They are enumerated as:

Integrative and Practical skills

- Inquiry and analysis
- Critical thinking
- Creative thinking
- Written communication
- Oral communication
- Reading
- Quantitative literacy
- Information literacy
- Teamwork
- Problem solving

Personal and Social Responsibility

- Civic engagement -- local and global
- Intercultural knowledge and competence
- Ethical reasoning
- Foundations and skill for lifelong learning
- Global learning

Integrative and Applied Learning

- Integrative learning

They have defined the sub-outcomes for each rubric and provided a scoring criterion for each sub-outcome at four levels: capstone, milestone 1, milestone 2, and benchmark.

Establishing Benchmarks and Targets

Benchmarks and targets are predefined standards to objectively measure the quality of learning outcomes. Benchmarks are essential to continuous quality improvement and help to overcome complacency and establish what level of performance for a program outcome is acceptable for a program graduate. Targets set a percent of students that should be achieving these benchmarks for the program to consider itself a success in completing the program learning outcomes. In short, both measure student success: benchmarks allow us to judge student success while the target allows us to judge the program's success.

Setting Useable Benchmarks

Departments and faculty should establish benchmarks for both direct and indirect methods of assessment, as well as targets that reflect what students should know and what skills they should have as they graduate from the degree program. Benchmarks are necessary for assessment data to be meaningful. The benchmark should be whatever column on your department's rubrics is defined as the "minimally acceptable" level of performance from students. For example, if a PLO is measured with a rubric using a scale of 1-10, is the minimal competency expected of a graduating senior going to be a 7 or 8? Or something else?

To set usable benchmarks, Suskie (2018, p. 297) suggests that programs:

1. Ask what would not embarrass you?
2. Ask how will the assessment data be used (and by what audiences)?
3. Ask what are the relative risks of setting the bar too high or too low?
4. When in doubt, set the standard relatively high rather than relatively low
5. If you can, use external sources to help set standards (disciplinary organizations, professional licensing requirements, etc.)
6. Consider the assignment being assessed
7. Consider a sample of student work and past experience

These questions can assist departments and faculty to come up with benchmarks that fit their programs. Like outcomes, benchmarks can also be revisited as industry and fields of study change with advances in technology, research, and other markers of development. Revisiting these questions and considerations can also be tied to other established routines, such as five-year review, PLO review, and other such reviews within departments.

Program Targets

As stated above, programs identify what percent of students should be achieving at a minimum to be considered a successful student in terms of completing the Program Learning Outcomes (PLOs). Suskie (2018) recommends that faculty establish two levels of outcomes: essential and aspirational. Essential outcomes are fundamental: all students should achieve this minimum standard before graduation. Conversely, aspirational outcomes are not a barrier to success, but rather are outcomes that students can still achieve goals to be a successful graduate, but are secondary to fundamental goals. Essentially, aspirational outcomes are ideal.

Fundamental outcomes have a target of 100% of students achieving the desired program outcomes. Aspirational should have a target above 50%. Programs benefit from establishing an exemplary target that establishes a percent of students a program would like to see achieving the highest standard (Suskie, 2018, 300-2).

Example Program Targets		
	Minimum Target	Exemplary Target
Fundamental Outcomes	90%	50%
Aspirational Outcomes	70%	30%

For examples of targets, please refer to other universities' examples listed in the References and Resources section.

Sampling Methods for Degree Program Assessment

Assessment of learning outcomes should be designed to evaluate the efficiency and effectiveness of student learning outcomes. It involves observations of the characteristics of students, curriculum, programs and units to make informed decisions to guide continuous improvement of the learning process. It should be an inquiry-driven process and performed continuously with an eye on refining the degree assessment process. The assessment process should follow the principles of continuous refinement, implying that it should follow the cycle of observation, refinement, and implementation.

The goal of the assessment process is not just to find opportunities for improvement in a program but also to reinforce its strengths. It should be looked at as a process to improve the overall quality of the program, especially the student experience. Other issues to be addressed include the evolution of the programs, the attempts to seek equity, and the change in students. The assessment of learning outcomes for each degree program should be informed by the overall mission of the unit. Further, course goals should align with the program learning outcomes.

The assessment of student learning outcomes for each degree program should be performed periodically by the faculty involved in the degree program. It is to be expected that each program is evaluated at least once every three years. For programs with a small number of students, the assessment can be performed by assessing the entire population of students, by using a census. Such programs should use the entire population of students to assess each learning outcome. For programs with a large number of students, it may not be feasible to perform assessment of each student and hence, a sampling of the students can be used for assessment. For example, it will be difficult to assess a capstone project/paper for each student in a program with over 200 students. A typical sample size can be at least 10 students or 10% of the student population, whichever is greater.

Other issues affecting the sample size can be the length and complexity of the artifacts (tests, projects, composition) used in assessment, and the number of faculty members who are charged with the task of assessment (the assessment team). Typically, programs with long artifacts (ones

that take a substantial time to review) may use a smaller sample size while the programs with short and simple artifacts may use a larger sample size.

Selecting a Sample Size

For each student learning outcome, the assessment team decides whether the entire student population or just a representative sample will be assessed. The team should choose an appropriate sample size taking into account the size and complexity of the artifact being assessed, the student population size, and the faculty panel workload.

Sampling Based on Percentage

For a large program with a limited faculty, the assessment team can decide to use a percentage of overall student population as a representative sample. As an example, for programs with more than 100 students, the team can choose 10% of the student population, with at least 10 students as the sample.

Sampling Based on Artifact Size

Programs that have to assess the learning outcomes from long or complex artifacts may choose a smaller number of students. For example, if the student learning outcome is assessed by a capstone project and paper (senior thesis) with at least 50 pages, it makes sense to select a smaller percentage of students for the assessment. Again, the team should be mindful that there is at least a minimum number of students that have been selected in the sample.

Sampling Based on Faculty Panel Size

Programs with a limited number of faculty members and a large student population need to strike a balance for optimized faculty workload. A small panel of faculty members (say 3) may not be able to read long reports from every student in the program. Similarly, it will be unreasonable to expect the panel to listen to a 10-minute presentation for 200 students. The size of the faculty panel should be used to decide the percentage of student population in the sample.

Sampling Procedure

The representative sample of the student population may be selected by a number of different methods. The common recommendations are described below.

Simple Random Sampling

As the name implies, this method randomly selects a specified number of students from the overall population.

Systematic Sampling

Systematic sampling is slightly different from random sampling. The students can be sorted on some criterion, for example alphabetically based on last name. Then, every nth student in the list is selected in the sample.

Stratified Sampling

In this method, students are divided into homogeneous groups and then, a random number of students are selected from each group. This method can help with equity assessment by selecting underrepresented groups of students. For example, if the program has only a few students from a gender or race, this method can help with the selection of those students for assessment.

Cluster Sampling

Here, the student population is divided into clusters, for example sections of a course. Then, a cluster is randomly selected for assessment.

The above methods for selecting a sample size and representative samples are just recommendations and a program should choose the method that works best for their assessment.

For more information, please refer to this sampling guide as a resource.

Continuous Assessment/Improvement

Mission Statement

Each program should create a mission statement that formalizes the philosophy and vision of the program as a clear and concise declaration. With the institution's stated goals of excellence in research, education, and service in mind, each unit should craft a mission statement emphasizing its uniqueness and strengths towards accomplishing each of the goals. The mission statement should be no longer than two to three sentences, and should be crafted for long-term vision. It should be re-evaluated every year to make sure that the unit adheres to the stated philosophy and vision.

Program Learning Outcomes

The learning outcomes should be three to five sentences to describe the knowledge, skills, and abilities expected of the graduates of the program. The departments may have separate learning outcomes for formative and summative assessment. The formative assessment may be used to assess students just after completing their sophomore year.

Step 1: Establish Assessment Plan Benchmarks

Benchmarks are predefined standards to objectively measure the quality of learning outcomes. The faculty should establish benchmarks for both formative and summative phases of assessment. Benchmarks are essential to continuous quality improvement and help to overcome complacency.

The benchmarks will be dependent on the description of the assessment method and describe the criteria for success.

Step 2: Collect Data

The mode of data collection should be identified based on the assessment plan. Data needs to be reported in the form of group data to preserve privacy of students as well as faculty. The personnel

involved in data collection should be identified, and data should be collected from different sources including the office of institutional research and individual faculty members.

Step 3: Analyze Results

The data collected should be summarized and reported in a meaningful way to the faculty. The faculty members should reflect on this summary and provide input on how to improve the program. The strong points of the program should be used to advertise the program to new students as well as to the employers. This self-reflection should also help in analyzing the areas that need improvement. This will help to improve the overall quality of the program.

From the feedback of the faculty at large, the Committee should develop a recommendation for next steps including a plan and timeline to implement any changes. It should also include the key personnel involved in data collection and reporting.

Step 4: Provide Final Report to Provost

The final report to the Provost will be routed through the appropriate Dean. The report for each program will be provided on a form. As a hypothetical example, the set of program learning outcomes is shown in Figure 1 and an example report on one outcome is shown in Figure 2.

Program learning outcomes	**Direct / Indirect Measure (Check all that apply for each PLO)**	**Timetable for Assessment Activity of PLO (Check one for each PLO)**
PLO 1: *Describe the social, political, economic, and cultural determinants of law.*	X Direct Measure (2) X Indirect Measure (1)	☐ Once/semester X Once/year (each spring) ☐ Once/two years ☐ Once/three years ☐ Other – describe below:
PLO 2: *Apply legal reasoning and analysis in common law, civil law, and other legal systems.*	X Direct Measure (2) X Indirect Measure (1)	☐ Once/semester X Once/year (each fall) ☐ Once/two years ☐ Once/three years ☐ Other – describe below
PLO 3: *Analyze the cross-cultural and international valences of law in distinctive social orders.*	X Direct Measure (3) X Indirect Measure (1)	☐ Once/semester X Once/year ☐ Once/two years ☐ Once/three years ☐ Other – describe below
PLO 4: *Explain the functioning of legal institutions and how those institutions differ from other societal institutions.*	X Direct Measure (1) X Indirect Measure (2)	☐ Once/semester X Once/year ☐ Once/two years ☐ Once/three years ☐ Other – describe below

PLO 1: *Describe the social, political, economic, and cultural determinants of law.*		
1. Title of measure: *Final exam essay question in LS 261*		
2. Describe how the measure aligns to the PLO: *This essay question asks students to analyze the landmark Supreme Court case of Dred Scott v. Sandford (1857) which requires students to consider how political, economic, social and cultural changes of the 19th century affected legal and constitutional arguments.*		
3. Type	x Direct Measure ☐ Indirect Measure	
4. Domain (if Direct measure)	x Examination ☐ Product ☐ Performance	
5. Point in program assessment is measured	When? ☐ In first year of program x In second year of program ☐ In third year of program ☐ In final year of program	Where does the assessment occur? Legal Studies (LS) 261, final exam essay question
6. Population measured	x All students ☐ Sample of students (Describe below)	
7. Frequency of data collection	☐ Once/semester x Once/year (each spring) ☐ Once/two years ☐ Once/three years ☐ Other – describe below	
8. Proficiency threshold	Describe: *To be considered proficient in this PLO, the expectation is that individual students will score at the "Meets Expectations" level or higher for each criterion on the final essay rubric for this question.*	
9. Program proficiency target	Describe: *This is an essential outcome, and the expectation is that 70% of all students will met or exceed the threshold noted above.*	
10. Who is responsible for implementing this assessment?	Describe: *The instructors assigned to teach Legal Studies (LS) 261 each spring semester will ensure the question is asked on the final exam, use the provided rubric for that particular essay question, and send the de-identified set of individual student scores on that question to the undergraduate curriculum committee at the end of the spring semester.*	
11. Who is responsible for analyzing the results?	Describe: *The undergraduate curriculum committee analyzes this data in conjunction with other measures for PLO 1 to determine whether the expectations are Met, Partially Met, Not Met, or Unknown.*	

Analyzing and Sharing Assessment Results

Once the gathering of evidence is complete, the next step is to (1) analyze the results and (2) share those findings with various stakeholders across the university and external interested parties. Although all faculty of the department should be involved with every step of the process, the analyzing of results may be delineated to the assessment team, a curated committee, or an individual faculty member. Depending on the department and/or the nature of the program, this process can take a number of forms.

Analyzing Assessment Evidence and Data

The analysis of assessment data will vary from department to department, program to program, depending on what evidence is gathered and the kinds of results that departments are looking for in degree programs. However, all assessment analysis plans should keep in mind that the evidence and data should relate and speak to something that faculty and departments care about. Does the department want to understand why students are not succeeding in a particular course? Do faculty members want to understand how a prerequisite course leads to higher levels of success in a later course? Are there any particular skills that are important to the field that students need to be excelling at for career success? Some things that this analysis might reveal are:

- Strengths and weaknesses of your program
- Overall strengths and weaknesses of students in the program
- Whether and to what extent students are developing competency or mastery
- Areas of possible improvement, even where performance is acceptable
- Likely causes of issues with student performance
- New questions for future assessment projects to pursue
- Evidence about job placement, graduate school admittance, or student satisfaction with the program
- Shortcomings with the assessment plan itself that need to be addressed

These are just some examples of the types of questions and/or topic areas that departments and faculty might want to understand during the analysis phase of the assessment process. Here are some other important things to consider when analyzing assessment evidence and data:

- Present data in relation to goals and outcomes
- Select appropriate procedures for data analysis

- Use both quantitative and qualitative forms of analysis where possible
- Consider the original assessment questions your data was meant to illuminate
- Consider the needs of your audience(s) and stakeholders
- Consider possible recommendations arising out of your assessment data

Analyzing Qualitative Evidence

Qualitative analysis of assessment, although it can be repetitive, benefits from not being overly complex. This type of analysis tends to rely on student work, as well as feedback from focus groups and surveys. Qualitative analysis starts with looking for patterns, ideas, and themes that get repeated through various pieces of evidence. These themes can be categorized into a variety of different groups to see if there is a high frequency of repeated topics.

Simple qualitative analysis will use notes from focus groups, student writing, or open-ended survey questions which can be read and categorized based on the created or chosen rubric for a degree program and/or department. More advanced analysis can involve faculty taking evidence and coding it through a variety of data analysis software, but this is not necessary.

Analyzing Quantitative Data

With some of the forms of direct evidence, faculty will need to do some quantitative analysis. For most of this analysis, faculty and departments will only need to conduct a very basic analysis, such as descriptive statistics like central tendency (mean, median, and mode) and percentages. The benchmarks and targets that department and faculty have identified will become useful here as a point of comparison. These comparisons can provide one piece of information for how the program is doing (although, this could probably not answer more complex questions without other sources of evidence). Some more complex quantitative analysis and statistics can be used here if departments find that type of analysis useful.

Most importantly, departments and faculty need to understand if the difference in data via these comparisons is meaningful. For example, quantitative analysis can help show whether or not differences in exam scores are substantive. Different quantitative methodological approaches, such as t-tests, one-way ANOVA, and others, can test for these meaningful differences, but are not necessary for all evidence analysis, programs, and/or departments.

UMSL provides access to tools that already do some of this statistical analysis for department and faculty if they find it useful for their degree programs. Starfish Analytics, for example, provides grade data, pass/fail statistics, and course withdrawal comparisons. Burning Glass can also help departments identify in-demand skills based on market data, as well as alumni career outcomes for various degree programs.

Common Issues in Analyzing Evidence and Data

Although this analysis can be exciting, there are benefits to being careful of these issues, as well as getting some outside perspectives incorporated into the analysis from time to time. When conducting assessment analysis, there are a few common issues that faculty should be aware of to have the most robust analysis possible.

Misusing Data - Assessment data should be gathered, structured, and analyzed in a way that makes it clear that student learning is being assessed as a whole, with the goals of improving both teaching and learning. The integrity of the process is better served when data is used to guide improvement and not for evaluating individual instructors. If individual faculty members, TAs, or staff feel that these assessment exercises are analyzing them individually, they may feel threatened in how the data is being used. For example, if a capstone paper is used for assessing **the program as a whole**, departments should be sure that this reflects the strengths and gaps in the program and not an assessment of the individual faculty member.

Choosing Appropriate Statistics - Some statistical approaches are fairly straightforward, while others can be more complex. Some data is as simple as the difference between one percentage or another, while others use a rubric and/or surveys with some kind of scale. It is important to keep in mind that there are situations where certain types of statistical analysis are not appropriate. For example, faculty and departments should understand when it is more appropriate to use the mode or the median, versus using the mean, or vice versa. It is up to individual departments, programs, and faculty to discern what kind of analysis is appropriate for the type of data they are using for the program assessment analysis.

Common Sense Interpretations - When looking at assessment data, it is important not to draw conclusions based on the most "common sense" interpretations quickly. There could be a situation where it seems that the issue is one thing, when in fact it is another. For example, it could seem obvious that students are doing poorly in a course because a majority are failing at "Exam A," which focuses on grammar. So it would be safe to assume that the instructor needs to focus more on grammar. However, upon further analysis, this might show that students who are taking the class in their first year, rather than their third, are the ones who are passing the exam. Therefore, it would be a matter of sequencing and timing and not the content of the course. It is important to do a thorough analysis to find the true nature of any gaps within a degree program.

Insufficient Data - Some programs have a plethora of direct and indirect methods and measures that faculty and departments can pull from for analyzing assessment data. However, others may have less pieces of evidence to draw from, or these departments with sufficient data might not sample students in a robust way and fall short of sufficient numbers of data. Too small of samples fail to represent student learning outcomes or show meaning patterns/differences even when they are present. If there isn't sufficient data, departments can supplement with other forms of evidence. Departments can also look for more contextual data that can more powerfully interpret the significance of the analysis data, such as using disaggregated data.

Analysis Tools

Using the right tools can help make data analysis go a lot more smoothly. For the most basic assessment plans, **Excel** or **Google Sheets** offer a way to calculate percentages and make tables using assessment data. For more complex assessment data analysis, departments and faculty can use a variety of tools to save on time and work. UMSL has a variety of software options available through TritonApps:

- MATLAB
- Minitab
- R/RStudio
- SAS
- SPSS
- STATA

Results Sharing

Assessment data needs to be shared with several different audiences. **The most important audience is your own program or department.** Faculty need to be able to understand the data, consider it, and decide on an appropriate response. It is important that someone takes the lead on presenting assessment data in a way that helps faculty make sense of it and make decisions. Departments should schedule a formal meeting where assessment results will be discussed.

Not all audiences will need a formal report. Assessment data can be presented informally, or using PowerPoint, at faculty or staff meetings. Visualizations, such as bar graphs or charts, help audiences more quickly understand and process assessment data. Results included in a program review may need to be more formally presented in a report.

Accreditation - Departments and programs can and will share their assessment analysis for accreditations for their field of study, where they will report on goals, outcomes, measures, data, and action plans resulting from the assessment analysis. **Academic Affairs, the Center for Teaching and Learning, and other administrative departments will judge and/or analyze the materials for program success and/or failure.** What matters is that the evidence that departments have goals and outcomes, collect data about student learning, and use that data appropriately to improve student learning.

Students and Other Stakeholders - The National Institute for Learning Outcomes Assessment's Transparency Framework encourages departments, programs, and institutions to make their learning outcomes, assessment processes, findings, and how they use evidence of student learning publicly available on their website. It encourages such information to be presented in 55 ways that are adapted to the intended audience(s), clearly worded, receptive to feedback, and adequately contextualized and explained to a lay audience. Such transparency can help make the case to students, donors, or other stakeholders about a program's commitment to student learning, to excellence, and about its successes.

Developing Action Plans (Closing the Loop)

Closing the loop occurs after all the reports have been generated and submitted. Thus, there may be a propensity on the part of the faculty to ignore this step after they have spent a substantial amount of time on earlier steps. However, closing the loop is an important step in the assessment cycle. In closing the loop, the assessment team will lay out the plans for how the results of assessment are to be shared with the faculty. They should also plan on the type of changes that may result based on assessment. These changes may include changes in the curriculum, teaching materials, or mode of instruction. In doing so, this last step is important in setting the goals for the next assessment cycle.

The findings of this process will lead to the plans for the next assessment cycle by a change in the assessment plan or the curriculum. For example, if the report indicates that all the learning outcome benchmarks have been met, it may indicate that the benchmarks are low and need to be improved. The change in the assessment plan could lead to a revision of learning outcomes, measurement approaches, data collection methods, benchmarks, or sampling. The changes in curriculum may point to course delivery methods, prerequisites, course sequences, course content, or addition/deletion of courses. The faculty may also decide to change the academic process by a revision of admission criteria, advising process, use of technology, change in personnel, or frequency or scheduling of courses.

Plan for Dissemination

The assessment committee should document a plan for dissemination and use of assessment results with the faculty members in the form of a formal presentation. This presentation can be conducted in a faculty meeting or through a faculty retreat. It is recommended that the presentation take place prior to submission of the report to the Provost so that all the faculty members are agreeable to the report.

Action Plan

The assessment process will point out the percentage of students who perform at a select benchmark level. The criteria for success is met if the percentage of students performing at (or above) the benchmark is higher than what was specified in the benchmark. Invariably, it will take more than one assessment cycle to establish appropriate benchmarks.

An important point to consider in selecting benchmarks is that they should be reasonable in terms of students' capabilities. Benchmarks with too high or too low performance targets may not be as useful. It is also important to emphasize that the faculty are made aware that the performance data is not to be used in evaluating the faculty members to ensure that the benchmark target is fair and unbiased.

Based on the review of performance, the benchmark may be adjusted for the next assessment cycle. Another point of self-reflection could be to make sure that all the sections of different courses are consistent and to suggest possible improvement in the courses that may not have met the benchmark.

It will be a good goal to close the loop on each program learning outcome at least twice in each five year period.

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University of Wisconsin-Milwaukee (2019). A Program Assessment Guide: Best Practices for Designing Effective Assessment Plans. **University of Wisconsin - Milwaukee Program Assessment Guide**

Online Assessment Resources

Assessment at Marquette

Assessment Commons: Internet Resources for Higher Education Outcomes Assessment

Association for the Assessment of Learning in Higher Education (AALHE)

Association of American Colleges and Universities (AAC&U)

Cleveland State University Assessment in General Education

East Carolina University - Institutional Planning, Assessment and Research

Higher Learning Commission

National Institute for Learning Outcomes Assessment (NILOA)

National Survey of Student Engagement (NSSE)

Sampling for the Assessment of Student Learning Outcomes

UIPUI: Assessment Institute

University of Central Florida Assessment

University of Kansas Degree-Level Assessment Guide

University of Nebraska - Lincoln Assessment Program Management

University of Wisconsin-Madison: Student Learning Assessment

University of Wisconsin-Madison: Program Assessment Plans Folder

Washington State University Graduate Program Assessment

Glossary of Terms

Assessment: A systematic process of research and evidence gathering aimed at understanding and improving student learning in relation to institutional, program, and course goals and outcomes.

Assessment Plan: A faculty driven framework that helps to inquire about student learning, which uses both direct and indirect evidence to support any changes to goals and program learning outcomes.

Benchmarks: Predefined standards to objectively measure the quality of learning outcomes; essential to continuous quality improvement and help to overcome complacency and establish what level of performance for a program outcome is acceptable for a program graduate.

Curriculum Map: A visual representation of the course of study that shows in which courses each learning outcome is introduced or reinforced, and in which courses students will demonstrate mastery.

Degree Program Assessment: The systematic process of research and evidence gathering aimed at understanding student learning and experience in relation to a program's goals,initiatives, and outcomes. Includes both learning outcomes assessment and other program evaluation measures.

Evidence: Materials gathered to analyze learning outcomes; can take the form of direct or indirect.

Direct Evidence: Evidence gathered by evaluating student work (artifacts or performances) in light of learning outcomes. Direct evidence is usually quantitative but can also be qualitative (e.g, collected faculty comments evaluating student artifacts in relation to an outcome).

Indirect Evidence: Evidence of learning gathered by evaluating student perceptions of their learning or experience. Indirect evidence can include interviews, surveys, focus groups, self-reports, or student reflections. Indirect evidence can be quantitative (e.g., likert scale questions from a survey) or qualitative (written responses to open-ended questions, interviews).

Learning Outcomes Assessment: Assessment focused on measuring student learning in relation to program goals and outcomes. Focuses on improving student learning.

Program Assessment: The systematic process of research and evidence gathering aimed at understanding student learning and experience in relation to a program's goals, 68 initiatives, and outcomes. Includes both learning outcomes assessment and other program evaluation measures.

Program Learning Outcomes (PLOs): A measurable expectations of student learning, curriculum, and teaching that can be assessed to inform faculty, departments, institutions, and students about what to expect from a program

Rubric: A form that guides faculty in scoring or evaluating student work or performances in relation to learning outcomes. Rubrics help make expectations clear to students, contribute to consistency and fairness in evaluation, and facilitate gathering program assessment data.

Targets: Set a percent of students that should be achieving these benchmarks for the program to consider itself a success in completing the program learning outcomes.