Carroll's Assessment Website

I. Introduction

Carroll's vision is to embrace student learning as its primary and defining mission, encourage students to be full and active partners in learning and create an environment supporting student and organizational learning, but how do we know that we are accomplishing this? To know, we must develop clear learning outcomes and evaluate our curriculum and pedagogical practices regularly to ensure a quality learning environment.

Assessment of student learning focuses on students' attainment of knowledge and skills at the course and program level. Whether students are engaged in a program designed to prepare them for transfer opportunities, or they are involved with a program that prepares them for the job market, assessment at CCC is an ongoing part of teaching and learning that is at the center of the College's mission. It helps develop the mission, goals, and outcomes in each program to promote and showcase the College's teaching excellence to all CCC stakeholders, both on-campus and off-campus.

Assessment is at the heart of teaching and learning. Classroom teachers assess student performance all the time, often on a daily basis, gauging student mastery of course objectives/learning outcomes. At a shared course, sequence, department, or program level, however, "assessment" necessitates that faculty articulate clearly to students and other stakeholders a shared understanding of what students will learn, how they will do so, and to wat degree they will demonstrate proficiency.

II. Assessment

A. What is Assessment?

Assessment is a purposeful, systematic, and collaborative process driven by the institution's desire to improve student learning. It is a deliberate course of action that defines expected student achievement in terms of learning outcomes and core competencies and measures actual student achievement using pre-determined internal standards and external benchmarks. The goal of assessment is to transform the institution into one which creates the best conditions for learning, encourages best practices, and inspires creativity and innovation (Community College of Baltimore County).

A good assessment process can answer three related questions:

1. What are we trying to do?
2. How well are we doing it?
3. How are we using the results for improvement?

B. Why Assess?

1. <u>Accreditation Requirement</u>
   Middle States Commission on Higher Learning (MSCHE) *Standards for Accreditation and Requirements of Affiliation* Standard V: Educational Effectiveness Assessment

"Assessment of student learning and achievement demonstrates that the institution's students have accomplished educational goals consistent with their program of study, degree level, the institution's mission, and appropriate expectations for institutions of higher education."

2. Educational Improvement
Identify what we wants students to know and be able to do when they leave a class, discipline, or program.
Assess how well they are doing.
Analyze the data to determine how we can improve.

C. **Role of Assessment at the College**

Assessment is a natural and ongoing component of the instructional process. All members of the institution share responsibility for student learning during their tenure at the College. Continuous improvement of learning is a collective enterprise upon which the success of instructional units depends on the organized support and cooperation of others.

The process of assessing learning outcomes and educational support services is a means to an end, that end being improved learning. As part of assuming the professional responsibility that goes with teaching and learning, faculty and staff identify, design, and implement specific outcomes assessments. The results, once analyzed, form the base for organized change that positively influences student learning.

Learning outcomes assessment and educational support services is neither precise nor perfect, and its data are interpreted with that in mind. It is a way of thinking about quality that comes from our willingness to continually examine, question, and, as necessary, alter what we do as an educational institution.

In no instance are the results of assessment used in a punitive manner, neither in reference to students nor to personnel. The climate of cooperation and focused efforts to improve permeates the assessment process. Such an atmosphere relieves staff of fear and allows them to approach both instructional and program assessment with an open and creative mind.

Learning outcomes assessment provides feedback to faculty and staff that allows them to strengthen and improve the educational process, which results in more appropriate, more extensive, and/or higher level learning (Community College of Baltimore County).

D. **Guiding Principles of Assessment**

The effective measurement of learning outcomes educational support services encourages students, faculty, staff and administration to examine and collaborate ways to improve our teaching and services to students.

These 11 principles of assessment articulate effective practices and the philosophy of assessment at the college (California Community Colleges, 2010)

Principle One: Faculty have the primary responsibility for developing assessment tools and determining the uses of data that are collected, and therefore faculty engagement and active involvement in assessment is essential.

Principle Two: Assessment is a process that should involve all appropriate participants at each level of the college, not just select groups or individuals.

Principle Three: Assessment should be connected to the overall culture of the college through the college vision or values statement, program review processes, and college curriculum, planning, and budgeting processes.

Principle Four: Objectives should be clearly mapped and aligned throughout a course sequence and among various levels (course, program, institution) to achieve the most efficient and effective assessment.

Principle Five: Assessment should be as authentic as possible and should be minimally intrusive to the educational experience of students and the instructional planning and performance of faculty.

Principle Six: Rather than relying on one assessment method for all situations, effective assessment may benefit from a variety of methods, even within a single course, that can respond to different objectives, teaching styles, and student learning needs.

Principle Seven: Assessment data do not exist in a vacuum and must be analyzed alongside all other factors that may impact achievement of outcomes.

Principle Eight: Assessment processes and grading are different but mutually compatible activities and should complement rather than conflict with each other.

Principle Nine: Effective assessment requires a college commitment of sufficient staff and resources.

Principle Ten: Assessment of student learning outcomes is a process that is separate from faculty evaluation.

Principle Eleven: Faculty and staff should engage in objectives development and assessment not because it is a requirement for accreditation but rather because it is good professional practice that can benefit programs and students.

III. Curricular Learning Outcomes Assessment

A. Course Level

At the course level, one or more course objectives is assessed through a designated course assignment. Faculty members may complete an assessment project for their own course or for multiple sections of a course they coordinate. Projects are planned using the Course-Level Assessment Project Planning Document. Results are reported through the Course-Level Assessment Project Final Report. Results drive continuous

improvement of student learning within a course

B. **General Education**

General Education goals are assessed through signature assignments in each General Education course. Signature assignments will:

- Assess a minimum of four General Education goals
- Require students to respond to an unscripted problem
- Include a reflective or metacognitive component

Faculty teams will evaluate a representative sample of signature assignments to assess General Education goals. Results will drive continuous improvement of General Education curriculum and faculty development activities.

C. **Program Level**

The purpose of academic program assessment is to improve the quality of academic programs individually and the college as a whole via data-driven decision making for continuous improvement.

1. Five-year program reviews are comprehensive and involve an extensive and in-depth analysis of how well a program functions and aligns with the College mission and goals. The report is recorded on the *Comprehensive Academic Affairs Program Review Form and Instructions* and is validated by the Program Review Committee members. In addition, the report is presented to the Program Review Committee and open to the college community. Results are used for program improvement.

2. Each year, programs not designated to complete a Comprehensive Program Review will submit an annual program assessment. All programs must assess part or all of their program goals, analyze results, report major changes, and document anticipated program needs for the year ahead. Ideally each annual assessment will provide key information that will eventually contribute to the comprehensive review in the fifth year. Program goals are recorded on *Academic PSLO Assessment Plan and Results Part I.* Results are recorded on *Academic PSLO Assessment Plan and Results Part II* and are used for program improvement.

IV. Non-Curricular Assessment

A. **Educational Support Unit Level**

Educational Support Unit assessment is a systemic and ongoing method of gathering, analyzing, and using information from various sources about an educational support unit, in order to improve the services and, hence, student learning. Assessment relates to measuring critical administrative processes in order to gather data that provides information about how the institution is meeting students' needs and expectations.

A benefit of measuring performance among educational support units is that it provides the basis by which the institution's employees can gain a sense of what is going wrong and what is going right within the organization. This process ultimately establishes

direction for improving quality and constituent satisfaction.

B. **Institutional Level**

The College engages in ongoing, integrated, and institution-wide planning and evaluation processes that (1) incorporate a systematic review of institutional mission, goals, and outcomes; (2) result in continuing improvement in institutional quality; and (3) demonstrate that the institution is effectively accomplishing its mission.

The Office of Planning, Marketing, and Assessment engages the College community in a systematic and strategic process of continuous improvement to fulfill the College's mission. This engagement not only supports data-driven decision-making at the College but also facilitates the integration of planning, assessment, and research to improve educational programs; administrative support services; academic and student support services; and community/public service.

V. Assessment Committees

A. **General Education Committee**

The General Education Committee serves as the coordinating and administrating body for the College's General Education Program. Its members work with administrators and faculty to advance the interests of the program within the wider College and to ensure that Carroll offers a comprehensive, accessible, and dynamic General Education curriculum aligned with institutional learning goals and student needs.

To promote and carry out its charge, the committee shall:

- Conduct reviews of proposals and policies concerning General Education requirements and establish and advance standards and best practices in the delivery of General Education courses
- Conduct periodic review of the General Education Program to ensure compliance with MHEC and MSCHE and alignment with the College's General Education mission and goals
- Communicate standards, goals, and activities in support of General Education to the faculty, staff, students, and stakeholders of Carroll Community College
- Coordinate with the Instructional Quality Committee to provide relevant professional development and training in the area of General Education pedagogy
- Provide recommendations to the Academic Council regarding General Education curriculum issues.

B. **Program Review Committee**

Program Review is at the heart of planning at Carroll Community College. As a key component of the integrated planning and resource allocation model, Program Reviews provide systematic, data-driven information that allows the College to examine the overall effectiveness of the institution. The Program Review process is designed to provide academic, student, and administrative areas the opportunity for review and assessment in relation to the College's mission, vision, values and performance indicators. Moreover, the purpose is to ensure appropriate resources are being

allocated to facilitate ongoing improvement in meeting the evolving learning needs of our students and community.

The Program Review Committee (PRC) is responsible for providing guidance to the College regarding the process and documents for the review. In addition, the PRC plays a vital role in evaluating and providing feedback on the quality of the program review documents submitted by the areas undergoing a comprehensive review. The full committee breaks into PRC subgroups to work closely with each program by validating and forwarding documents for the Strategic Planning Process.

To promote and carry out its charge, the committee shall:

- Evaluate and provide feedback on the quality of the 5-year program review documents submitted by the reviewing units.
- Validate completed 5-year program review document and forward the document to the Strategic Planning Process.
- Monitor integration of the 5-year program review process with strategic planning.
- Provide guidance to the College in the use of the 5-year program review materials and the process of program review.
- Annually evaluate the effectiveness of the 5-year program review process and policies and procedures related to program review, and recommend improvements and revisions as needed.
- Report to the College Planning Council and the Academic Senate annually regarding Committee findings and activities.

C. **Student Learning Improvement Committee** (SLIC)

The Student Learning Improvement Committee provides leadership, support and feedback for all assessment activities within Academic and Student Affairs. Committee members provide instruction and guidance to faculty members and administrators concerning all phases of the assessment cycle to encourage excellence in teaching and instruction, with the goal of increased student success and continuous improvement.

To promote and carry out its charge, the committee:

- Establishes and advances assessment standards and best practices in assessment at the level of the institution, program, and course
- Ensures that Carroll's assessment efforts meet the accreditation standards of national, regional, and local accrediting agencies, including the Middle States Commission on Higher Education and the Maryland Higher Education Commission
- Communicates standards, goals, and activities in support of assessment to the faculty, staff, students, and stakeholders of Carroll Community College
- Works with the Instructional Quality committee to provide relevant professional development activities regarding assessment
- Assists the General Education and Program Review Committees with assessment initiatives.

D. **Planning Advisory Council (PAC)**

The Planning Advisory Council is an advisory body to the College President. It is not part of the college's governance structure, and as such it *endorses recommendations* to the

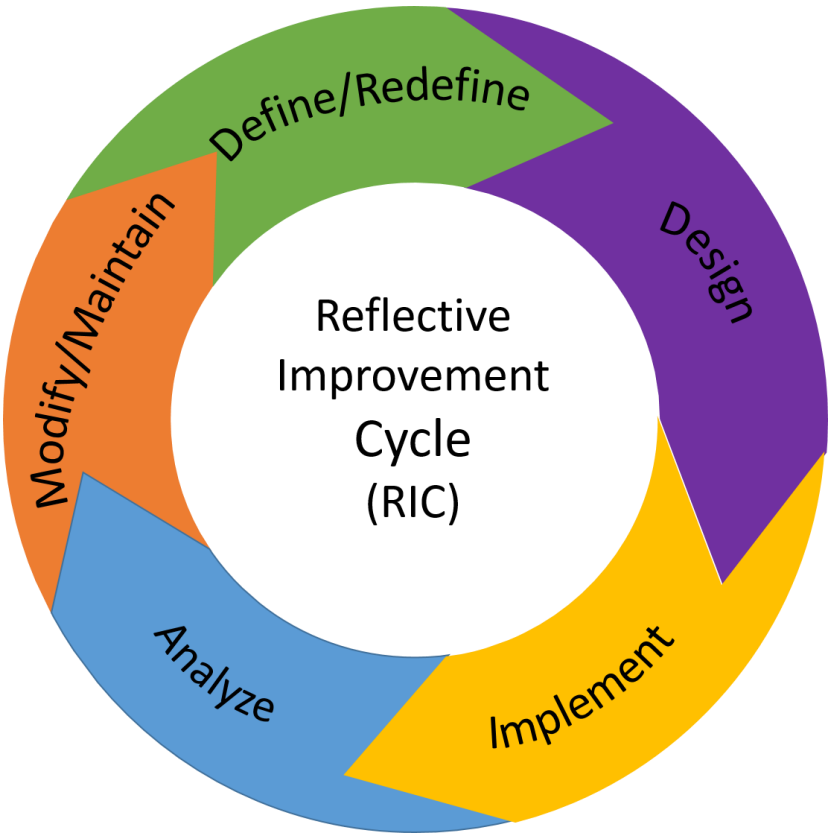
President—it does not approve policy or make decisions. The chair does call for formal votes and the recommendations of the Planning Advisory Council are respected by the President, Executive Team, and Board of Trustees. Most planning at the college occurs at the area, department, and office levels, and the Planning Advisory serves as an information-sharing forum for the college planners who sit on the council.

Functions of the Planning Advisory Council include:

- Develops multi-year Compass strategic plans identifying major institutional priorities for the five-year planning horizon.
- Endorses and monitors implementation of the annual Strategic Plan.
- Monitors accomplishment of the college mission by establishing and maintaining a system of Institutional Effectiveness Assessment Measures.
- Serves as the college budget committee, providing input into the development of annual operating budget requests.
- Reviews college-wide functional plans including master plans for facilities and technology, and solicits and reviews institutional research supporting informed planning and decision-making at all levels of the institution.

VI. Faculty Toolkit

A. Assessment Cycle (Reflective Improvement Cycle)



Using the Reflective Improvement Cycle (RIC)

Step 1. Define/Redefine

A. Identify the purpose or rationale for the assessment project.
B. Identify or establish goals or objectives, specifying, if appropriate to the assessment project, alignment to institutional or program goals. [link to resources]
C. Ensure goals and objectives are measurable.

Step 2. Design

A. Identify or design learning experience and related assessment instrument and scoring mechanism. [link to resources]
B. Meet with Data Review Team to discuss available data and overall data plan.
C. Establish benchmarks. [link to resources]
D. Consider and plan for validity and consistency of learning experience, assessment instrument, and scoring. [link to resources]
E. Identify the projected timeline.
F. Share plan for assessment project with supervisor.
G. Have assessment instrument and scoring mechanism reviewed.
H. For course-level assessment projects: complete the Course-Level Assessment Project Planning Document.

Step 3. Implement

Projects, class activities, examinations, surveys, activities, events, usage

A. Communicate plan for assessment project to participating colleagues.
B. Deliver the learning experience and administer assessment instrument, ensuring consistency.
C. Document assessment activities.

Step 4. Analyze

A. Compile, review, and validate data in consultation with Institutional Research Department and Data Review Team.
B. Analyze data. Consider intention of learning activity and assessment as compared to results. To what degree did students meet the established benchmarks?
C. Document initial data and analysis and communicate to appropriate stakeholders.

Step 5. Modify/Maintain

A. Determine if changes to course materials, delivery, and/or assessment instrument are necessary.
B. Make and document necessary changes or improvements to course materials, delivery, and/or assessment instrument.
C. Communicate plan for course improvements to participating colleagues.
D. Implement the changes and analyze new results.
E. Document updated data and analysis and communicate to appropriate stakeholders.

F. For course-level assessment projects: complete the Course-Level Assessment Project Final Report.

B. **Developing and Refining Learning Objectives**

A learning objective is a formal statement of what students are expected to learn in a course or program. Learning objective statements refer to specific knowledge, practical skills, areas of professional development, attitudes, higher-order thinking skills, etc. that faculty members expect students to develop, learn, or master during a course or program (Suskie, 2004). Learning objectives are also often referred to as "expected learning outcomes", "student learning outcomes", or "learning outcome statements".

Simply stated, learning outcome statements describe:

1. What faculty members want students to **know** at the end of the course or program AND
2. What faculty members want students to **be able to do** at the end of the course or program.

Learning outcomes have three major characteristics

1. They specify an action by the students/learners that is observable
2. They specify an action by the students/learners that is measurable
3. They specify an action that is done by the students/learners (rather than the faculty members)

Effectively developed learning objective statements should possess all three of these characteristics. When this is done, the learning objectives for a course or program are designed so that they can be assessed (Suskie, 2004).

<u>Structure of a Measure</u>

"(Target) (subject) (action verb) (criteria) (object) (method)"

Example: The Office of research will receive an evaluation of satisfaction or above for support provided by 90% or more of the faculty who submitted grant proposals and completed the assessment instrument.

<u>Development of Objectives using Bloom's Taxonomy</u>

To model writing student learning objectives in a straightforward and non-threatening manner, the following chart uses levels of understanding from Bloom's Taxonomy, combines them with action verbs, and provides examples for a variety of disciplines.

	PSLO
to measure **knowledge** outcomes, might write…	The student/graduate will… Describe the basic components of empirical research. Give examples of major themes or styles in music, art, or theatre. Recognize in complex text local, rhetorical, and metaphorical patterns.
to measure **comprehension**	The student/graduate will… Correctly classify a variety of plant specimens.

outcomes, might write…	Explain the scientific method of inquiry. Summarize the important intellectual, historical, and cultural traditions in music, art, or theatre from the renaissance to modern times.
to measure **application** outcomes, might write…	The student/graduate will… Demonstrate in the laboratory a working knowledge of lab safety procedures. Apply oral communication principles in making a speech. Compute the area of a room.
to measure **analysis** outcomes, might write…	The student/graduate will… Distinguish between primary and secondary literature. Diagram a sentence. Listen to others and analyze their presentations. Differentiate between historical facts and trivia.
to measure **synthesis** outcomes, might write…	The student/graduate will… Revise faulty copy for a news story. Formulate hypothesis to guide a research study. Create a poem, painting, and design for a building.
to measure **evaluation** outcomes, I might write…	The student/graduate will… Compare art forms of two diverse cultures. Critically assess an oral presentation. State traditional and personal criteria for evaluating works of art. Draw conclusions from experimental results.

Action Verb List

Below are terms (verbs) that can be used when creating student learning objectives for a course or program.

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Count	Associate	Add	Analyze	Categorize	Appraise
Define	Compute	Apply	Arrange	Combine	Assess
Describe	Convert	Calculate	Breakdown	Compile	Compare
Draw	Defend	Change	Combine	Compose	Conclude
Identify	Discuss	Classify	Design	Create	Contrast
Labels	Distinguish	Complete	Detect	Drive	Criticize
List	Estimate	Compute	Develop	Design	Critique
Match	Explain	Demonstrate	Diagram	Devise	Determine
Name	Extend	Discover	Differentiate	Explain	Grade
Outlines	Extrapolate	Divide	Discriminate	Generate	Interpret
Point	Generalize	Examine	Illustrate	Group	Judge
Quote	Give	Graph	Infer	Integrate	Justify
Read	examples	Interpolate	Outline	Modify	Measure
Recall	Infer	Manipulate	Point out	Order	Rank
Recite	Paraphrase	Modify	Relate	Organize	Rate
Recognize	Predict	Operate	Select	Plan	Support
Record	Rewrite	Prepare	Separate	Prescribe	Test

Repeat Reproduces Selects State Write	Summarize	Produce Show Solve Subtract Translate Use	Subdivide Utilize	Propose Rearrange Reconstruct Related Reorganize Revise Rewrite Summarize Transform Specify	

C. **Creating a Curriculum Map**

Curriculum mapping shows alignment among courses and within academic programs. It indicates how learning outcomes at various levels are connected to each other. The "map" is often completed as a chart or spreadsheet and indicates in which courses learning outcomes are addressed through direct teaching and which specific activities or assignments are used to evaluate/measure student attainment of learning outcomes.

1. Map course outcomes to program-level outcomes:

Faculty identify how course outcomes build knowledge, skills, and attitudes that are described by program-level outcomes. In this way, multiple courses contribute to students' growth in attaining program competencies. Individual courses may contribute to one or more program outcomes.

2. Map course outcomes to general education competencies:

Faculty demonstrate how student learning at the course and program level contributes to student growth in the broader competencies embodied by general education. Individual courses are not expected to address all general education competencies, though some may to varying degrees. The process also serves to help build a deeper understanding of how courses work together to foster a liberal education, and to inform stakeholders - students, faculty, staff, parents and the general public - regarding the value of a liberal education.

	Introductory Course	Research Methods	Advanced Content Course A	Laboratory / Practicum Course	Advanced Content Course B	Advanced Content Course C	Advanced Content Course D	Capstone Course
Content								
SLO 1: Disciplinary knowledge base (models and theories)	Introduced		Reinforced		Reinforced	Reinforced	Reinforced	Mastery / Assessed
SLO 2: Disciplinary methods		Introduced		Reinforced		Reinforced		Mastery / Assessed
SLO 3: Disciplinary applications	Introduced		Reinforced		Reinforced		Reinforced	Mastery / Assessed
Critical Thinking								
SLO 4: Analysis and use of evidence		Introduced		Reinforced	Reinforced		Reinforced	Mastery / Assessed
SLO 5: Evaluation, selection, and use of sources of information	Introduced	Reinforced		Reinforced		Reinforced		Mastery / Assessed
Communication								
SLO 6: Written communication skills	Introduced	Reinforced		Reinforced		Reinforced		Mastery / Assessed
SLO 7: Oral communication skills		Introduced	Reinforced		Reinforced	Mastery / Assessed		
Integrity / Values								
SLO 8: Disciplinary ethical standards		Introduced		Reinforced	Reinforced			Mastery / Assessed
SLO 9: Academic integrity	Introduced	Reinforced	Reinforced	Reinforced		Reinforced		Mastery / Assessed
Project Management								
SLO 10: Interpersonal and team skills			Introduced		Reinforced		Reinforced	Mastery / Assessed
SLO 11: Self-regulation and metacognitive skills	Introduced			Reinforced	Reinforced	Reinforced		Mastery / Assessed

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Sample Curriculum Map (Level of Skill)

D. Choosing Assessment Instruments

The purpose of this section is to present you with a discussion on guidelines and criteria for selecting the appropriate assessment methods. Additionally, an inventory of assessment methods and techniques that are currently available to you or that can be developed or adapted to your administrative unit is presented in the appendix.

1. Taxonomy of Assessment Methods

Traditionally, assessment methods have been categorized as being either direct or indirect based on whether you want to assess student learning or student experience. Direct assessors of learning specifically evaluate the competence of students in what they have learned as a result of instruction or the provided support service. Indirect assessors differ in that they measure the student's, parent's and employer's experience rather than their knowledge and skills. These methods include feedback from internships, supervisors, student self-reports, etc.

A modified categorization scheme is proposed here with the purpose of providing a more clearly defined system for selecting appropriate assessment methods that address what you are trying to assess. Assessment methods have been classified based on what you are trying to assess. Two categories have been identified and are described briefly below.

A. Student or client learning

(1). Direct assessors of student or client learning. This category includes methods that evaluate the learning of students in terms of:

a. Cognitive: What does the student know?

b. Performance / skills: What can the student do?
c. Affective: What does the student care about?

(2). Indirect assessors of student learning. This category consists of assessment methods that allow students or others (such as employer) to report on what students have learned. In other words, the methods are used to evaluate the "perception" of student learning. As with the direct method there are three learning types that we are concerned with:

a. Cognitive: What is reported (perceived) that the student knows?
b. Performance and skills: What is reported (perceived) that the student can do?
c. Affective: What is reported (perceived) as important to the student?

B. Administrative functions and critical processes

(1). Direct assessors of unit processes: This category includes methods that assess demand, quality, efficiency and effectiveness. For example, efficiency may address completion of service, productivity of service and efficiency of individual points of service (e.g., academic and career advising, computer assistance, tutoring).

(2). Student or client perception of functions and critical processes: This category includes methods that assess perception of support activities and services (e.g., orientation, financial aid, admissions, and international student services).

2. Selecting Assessment Methods

The acronym MATURE is used when selecting or developing measures for your assessing your objectives

MATURE stands for the following terms when choosing assessment methods:

Match
Appropriate
Target
Useful
Reliable
Effective and Efficient

A. Match

Match the desired outcome with the appropriate assessment method. Successful and useful assessment cannot be achieved if you do not align the assessment method with the outcome that you are trying to assess.

Outcome: Students will demonstrate an understanding of the services provided by offices that are involved in the intent to graduate process.

(1). Example of an assessment method that does not match the Outcome you are assessing:

Assessment method: Students will successfully download the intent to graduate form.

(2). Example of an assessment method that matches the Outcome you are assessing:

Assessment method: After the workshop session, students will achieve a 90% or higher on the set of questions related to the services provided by offices that assist in the intent to graduate process.

Note: When assessing students using your services or completing your program, it is possible to use a locally developed test as the assessment method. However, it there is a nationally normed instrument, you will be able to compare your services to those at other universities.

B. Appropriate

Choose methods that are appropriate. They can be direct or indirect. Direct measures include assessments that evaluate a quality indicator, or student ability or achievement in one of the areas noted. Indirect measures can be survey responses to targeted questions or ancillary parts of a direct measure. There are times when one measurement instrument could measure more than one objective. (For example, a survey may target several objectives.)

Select assessment methods prudently and make sure that they are good assessors of effectiveness of the service or unit. A primary goal of assessment is to uncover issues that, when addressed, will lead to improvements in your operation. Complex measures are not necessarily the key to successful assessment. Consider measures that provide you with information that is easily interpreted and unambiguous and that can be used to improve where necessary.

Determine beforehand if there are available resources to assist in the collection of data on the chosen measure. Do the data exist or is the collection of data going to be required. If so, determine whether the data are difficult or easy to obtain. Consider assessment methods for which data might already exist. The Office of Institutional Research may have information that could be useful for your assessment plan. Avoid selecting assessment methods that require complicated data collection

techniques, when possible. In some cases, it might be highly constructive to start with a pilot test and collect data from a small sample. This will help you determine if the scope of the data collection is feasible in terms of resources and time.

Select methods that provide information that can be directly controlled by the department or program. An assessment method that is influenced by external factors beyond the control of the program will yield results that are meaningless to you since you will not be able to manipulate or direct the student service or administrative process.

C. Target

Each measure should be directed. It should specify, when possible, the desired level of performance (level of satisfaction, productivity, efficiency, performance).

D. Useful

Choose assessment methods that will provide you with useful and useable information. The measure that you are trying to assess should not only be interesting but one that would allow you to make inferences about the progress toward the outcome. Assessing state requirements or the achievement of a goal or the completion of an activity does not provide evidence about your operations or about student achievement. That is, do not assess a curricular requirement since it is unlikely that you will learn anything additional than the percentage of students meeting the requirement.

Outcome: Hypothetical Administrative Unit will demonstrate increased timeliness in terms of processing student requests.

(1). Example of assessment that will not provide useful, useable information:

Assessment: Number of students served by Hypothetical Administrative Unit will be tracked for three semesters.

(2). Example of assessment that will provide useful, useable information:

Assessment: A computerized log will track the date and time of each student request and the date and time that it is resolved. The time between request and resolution will be compared for two semesters.

Note: The first example assessment shows that data are being collected, but not useful data. The second example assessment provides information that can be used to determine if the administrative unit is increasing its timeliness.

E. Reliable

The measure is based on tested, known methods.

A reliable assessment method is one that yields consistent responses over time. The three sources of measurement error described by Cherry and Meyer (1993) include the respondents, the instrument (assessment method) and the administration of the instrument. The method selected should be one that provides dependable, consistent results time after time. The instrument and should be clearly worded and not ambiguous. The time available to complete the instrument should be consistent with its length.

F. Effective and Efficient

Each approach accurately and concisely measures the objective.

Two assessment methods are required for each Outcome. (One exception would be when a measure yields all of the possible information about that Outcome.) The benefits of using more than one method include: different components of one Outcome can be assessed, and a high level of accuracy and authority can be achieved.

Attempt to identify subcomponents of a measurement approach so that you will be able to conduct a deeper analysis. This will provide an opportunity to identify an increased number of areas to improve. For example, multiple questions on a survey may be relevant to one Outcome (e.g., quality of advising). However, one question on an evaluation tool or questionnaire may provide data about a subcomponent.

When possible, utilize a combination of qualitative and quantitative assessment methods to effectively assess objectives. The selection of assessment methods should reflect the culture of the unit and should be methods that provide those making changes to the operation or programs of the unit with useful information. Examples of qualitative assessment methods include open-ended questions on surveys, focus groups, and structured interviews.

Utilize a combination of direct and indirect assessment methods. Some assessment methods require direct interaction with the students in an evaluative or instructional setting, while others do not (such as information from the student database or employer surveys).

3. Suggestions based on Assessment Type

Direct and Indirect Measures in Assessment

	Direct Measures	Indirect Measures
Course Level	• Course and	• Course evaluations

	homework assignments • Examinations and quizzes • Standardized tests • Term papers and reports • Observations of field work, internship performance, service learning, or clinical experiences • Research projects • Class discussion participation • Case study analysis • Rubric scores for writing, presentations, and performances • Artistic performances and products	• Test blueprints (outlines of the concepts and skills covered on tests) • Percent of class time spent in active learning • Number of student hours spent on service learning • Number of student hours spent on homework • Number of student hours spent at intellectual or cultural activities related to the course • Grades that are not based on explicit criteria related to clear learning goals
Program Level	• Capstone projects, senior theses, exhibits, or performances • Pass rates or scores on licensure, certification, or subject area tests • Student publications or conference presentations • Employer and internship supervisor ratings of students' performance	• Focus group interviews with students, faculty members or employers • Registration or course enrollment information • Department or program review data • Job placement • Employer or alumni surveys • Student perception surveys • Proportion of upper-level courses compared to the same program at other institutions • Graduate school placement rates

Institutional Level	• Performance on tests of writing, critical thinking, or general knowledge • Rubric (criterion-based rating scale) scores for class assignments in General Education, interdisciplinary core courses, or other courses required of all students • Performance on achievement tests • Explicit self-reflections on what students have learned related to institutional program such as service learning (e.g., asking students to name the three most important things they have learned in a program)	• Locally-developed, commercial, or national surveys of student perceptions or self-report of activities (e.g., National Survey of Student Engagement) • Transcript studies that examine patterns and trends of course selection and grading • Annual reports including institutional benchmarks, such as graduation and retention rates, grade point averages of graduates, etc.

E. **Designing Assessment**

F. **Collecting Data**

Once a suitable assessment method(s) is/are identified for each objective, the faculty and/or staff must determine when, where, how, and who will implement the assessment method(s) and collect the resulting data. collected in keeping with the plan.

G**. Analyzing Data**

Objectives stated adequately include a "benchmark," but not necessarily as part of the objective statement itself. A benchmark level selected by faculty is the minimum level students (not individual students, but all students in the major or minor; aggregated data) must achieve in order to demonstrate achievement. For example, a specific percentile score on a major field exam, percentage of students completing an internship or admitted to grad school, narrative description of student performance, etc.

Quantitative Data - Assessment data measured numerically (counts, scores, percentages, etc.) are most often summarized using simple charts, graphs, tables, and

descriptive statistics- mean, median, mode, standard deviation, percentage, etc. Deciding on which quantitative analysis method is best depends on (a) the specific assessment method (b) the type of data collected (nominal, ordinal interval, or ratio data) and (c) the audience receiving and using the results. No one analysis method is best, but means (averages) and percentages are used most frequently.

Qualitative Data - Objectives assessed using qualitative methods focus on words and descriptions and produce verbal or narrative data. These types of data are collected through focus groups, interviews, opened-ended questionnaires, and other less structured methodologies. Generally speaking descriptions or words are more difficult to quickly summarize and present. Nonetheless, in some disciplines a qualitative approach may be the preferred alternative. (NOTE: Many qualitative methods are "quantifiable;" the ability to summarize qualitative data using numbers. For example, art faculty use a numeric rubric to apply their professional judgment in assessing student portfolios.)

H. **Reporting the Results**

Two questions arise: First, to whom are the results reported and secondly, how are the results reported? The audience receiving the report usually dictates the reporting method(s). In most cases it is either "official" or "unofficial" audiences.

Official audiences include presidents, deans, faculty leaders, etc.; people to whom the results must be reported. In this context reporting methods often must conform to expected standards and/or formats. For example, an annual report containing specific information and filed in an exact method; a web-based reporting system or similar highly-structured procedure.

Unofficial audiences are those persons to whom the results might be interesting, but they are not required to receive and/or act on the results. In these cases the reporting method is far more flexible.

Regardless of the specific audience and reporting methods, it is imperative the data are current, accurate, and analyzed appropriately. Likewise, clearly stating what actions will be taken or are planned is essential.

I. **Using Results to Make Decisions**

Once an appropriate analysis technique is applied to the assessment data and results are in hand, the next step entails making decisions based on those results. Compare the results with the established criteria to determine how or if data answer the following generic "so-what" questions: Do the data affirm the objective was achieved or is being achieved at the desired criterion level? Secondly, depending on the answer to the first question, what action(s) is/are warranted by the data? Answering the generic questions leads to one or more subsequent actions:

1. Do nothing and retain the objective; continue on the same path.
2. Identify what minor adjustments in the instructional and/or assessment methods are needed to facilitate achieving the objective; or perhaps just more time is needed.

3. Determine and implement major adjustments in the instructional and/or assessment methods as needed to facilitate achieving the objective.
4. Delete the objective and replace it with a more appropriate objective.

VI. Resources

VIII. Contact the Assessment Team

The Institutional Assessment Office is dedicated to the improvement of education practice through the assessment of academic program and services. The Office supports both educational programs and service units through the systematic collection of assessment data and through analysis which informs, educates, and facilitates continuous improvement.

The Institutional Assessment Office engages faculty and staff in the policy and process of College-wide assessment by managing accreditation, curriculum mapping, course assessment, general education assessment, program assessment and review, and functional area reviews.

For assistance, contact:

Michelle Kloss, Ph.D.
A117d
mkloss@carrollcc.edu
410.386.8411

or

Melody Moore, Ph.D.
A117c
memoore@carrollcc.edu
410.386.8412

IX. Glossary

Objectives/Outcomes/Goals:

Objective (learning) - A statement of the specific and measurable knowledge, skills, attributes, and habits learners are expected to achieve and demonstrate as a resultof their educational experiences in a program, course, or module. (An example of a learning objective is "Upon the completion of this course, learners will be able to summarize the causes of religious conflict in modern-dayIraq.")

Outcome (learning) - A demonstration of the actual level of attainment of the knowledge, skills, attributes, and habits expected as a result of the educational experiences in a program, course, or module. A learning objective states what learners should be able to do, while a learning outcome is a learner's demonstration of the actual ability to do so. (An example of a learning outcome is a learner's presentation of an accurate summary of the causes of religious conflict in modern-dayIraq.)

Goal - Intended outcomes of instruction, stated in general terms, further defined by a set of specific (observable and measurable) student **learning outcomes**. Program goals reflect institution-wide goals and the program's mission.

Student Learning Objective (SLO) - Statements that define the expected goal of a curriculum, course, lesson or activity in terms of demonstrable skills or knowledge that will be acquired by a student as a result of instruction.

Module Student Learning Objectives (MSLO) - Statements of the specific and measurable knowledge, skills, attributes, and habits learners are expected to achieve and demonstrate as a result of their educational experiences in a **module** or unit.

Course Student Learning Objectives (CSLO) - Statements of the specific and measurable knowledge, skills, attributes, and habits learners are expected to achieve and demonstrate as a result of their educational experiences in a **course**.

General Education Student Learning Objectives (GESLO) - Statements of the specific and measurable knowledge, skills, attributes, and habits aimed to provide students with the foundation of skills and knowledge necessary to reason clearly, communicate effectively, and contribute to society. The General Education Curriculum is designed to ensure that students meet these goals through inquiry-based learning **across the disciplines**.

Program Student Learning Objectives (PSLO) - Statements of the specific and measurable knowledge, skills, attributes, and habits learners are expected to achieve and demonstrate as a result of their educational experiences in a **program**.

Educational Support Unit Objectives (ESUO) - Statements of the specific and measurable critical administrative processes in order to gather data that provides information about the institution's support services and how they are meeting student's needs and expectations in support of student learning.

Cognitive Outcome - What students KNOW; knowledge, comprehension, application, analysis, synthesis, & evaluation.

Affective Outcome - What students CARE ABOUT; students' feelings, attitudes, interests, and preferences.

Performance Outcome - What students CAN DO; skilled performance, production of something new (e.g., a paper, project, piece of artwork), critical thinking skills (e.g., analysis and evaluation).

Competency - A demonstrated mastery of a particular set of knowledge and/or skills. While some institutions have focused on job-related competencies, any subject can be redefined in terms of competencies. Competencies may be either narrow or granular, or they may constitute broad capabilities that require mastery of a substantial body of knowledge and skill. In some cases, competencies are defined independently; in other cases, they may aggregate into higher-level mastery.

Competency-Based Course - A course whose purpose is to prepare the learner to demonstrate a number of specific competencies. The course may be structured like a traditional course, but learners typically prepare for "certification" from independent competency assessments. Competency-based learning is characterized by assessment of competencies rather than course completion as the primary means of measuring academic progress.

Assessment:

Assessment (the process of) - An ongoing, systematic process that

1. is based on clear expectations for learning in the form of learning objectives/outcomes
2. provides sufficient opportunities for learners to achieve the expectations
3. gathers evidence that learning has occurred
4. applies the information to improve teaching and learning

Domains of Learning - Areas of human functioning that differ in their contribution to or role in the learning process. Benjamin Bloom's Taxonomy of Learning Domains includes the cognitive domain (mental skills), affective domain (feelings, emotions), and psychomotor domain (manual or physical skills).

Assessments (strategies) - Instruments used to identify what students have learned; specifically, instruments used to measure the match between the learning objectives/outcomes and learners' attainment of them.

Formative Assessment - Refers to assessment that is carried out throughout the course, project, or time-frame to provide feedback regarding whether the objective is being met. Formative assessment may be conducted for the following reasons: program improvement; to provide feedback to improve teaching, learning, and curricula; to identify students' strengths/weaknesses and to assist in placing students based on their needs.

Summative Assessment - Refers to assessment that is carried out at the end of a course, project, or time- frame to evaluate whether the objective was achieved (i.e., the overall performance). Thus, it is typically used to assign course grades. **Summative assessment** may be conducted for the following reasons: evaluation and accountability; decision-making regarding fund allocation; to aid in program level decision-making; to respond to demands accrediting bodies, state, and federal agencies.

Authentic Assessment - Measuring the extent of learning by structuring opportunities for learners to demonstrate knowledge and skills acquired. Learners are asked to perform meaningful, real-world tasks, and their performance is evaluated using a rubric of criterion-referenced levels of attainment.

- **Portfolios -**Collections of student work over time that are used to demonstrate student growth and achievement in identified areas. Portfolios may contain research papers, tests and exams, case studies, audio or video tapes, computational exercises and other original works, as well as personal essays, journals, and self-evaluations.
- **Case Study** - An in-depth examination of a single instance or event. A **case study** provides a systematic way of looking at an event(s), collecting data, analyzing information, and reporting the results.

Criteria - The qualitative or quantitative guidelines, rules, principles, or statements by which learner responses, work products, or mastery are evaluated.

Direct Measure - Measures that require the student to demonstrate his/her knowledge and skills in response to the instrument. Examples of **direct measurement** include 1) achievement tests

such as objective tests; 2) student academic work such as essays, presentations, portfolios, and course assignments; 3) observations or case studies.

Indirect Measures - Measures that ask students to reflect on their learning rather than to demonstrate it. Examples of indirect measurement include self-report methods such as surveys, interviews, and focus groups.

Quantitative Measurement - Measures that assess objectives by collecting numeric data and analyzing the data using statistical techniques. Examples of quantitative data include GPA, grades, exam scores; forced-choice survey responses; demographic information; standardized teaching evaluations.

Qualitative Measurement - Measures that rely on and evaluate descriptions rather than numeric data. Examples of qualitative data include responses to open-ended survey or interview questions; evaluations of writing samples, portfolios, or formal recitals; participant observations; ethnographic studies.

Evaluation - A judgment regarding the quality, value, or worth of a response, work product, or performance based on established criteria. The evaluation of a learner's work is typically reflected in the grade assigned or score earned.

Active Learning - Active learning occurs when learners engage by "doing" something, such as discovering, processing, or applying concepts and information. Active learning implies guiding learners to increasing levels of responsibility for their own learning.

Activity - Any form of learner participation that serves to reinforce course content and provides an opportunity for learners to further their attainment of course or module/unit learning objectives or competencies. Often, an activity allows for practice, discovery, and trial-and-error.

Alignment:

Alignment - Critical course elements working together to ensure that students achieve the desired LOs.

Alignment Map - A table used to organize the Program, Course, and Module Learning Outcomes/Objectives so they correspond to the assessments, activities, and materials used in the course.

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