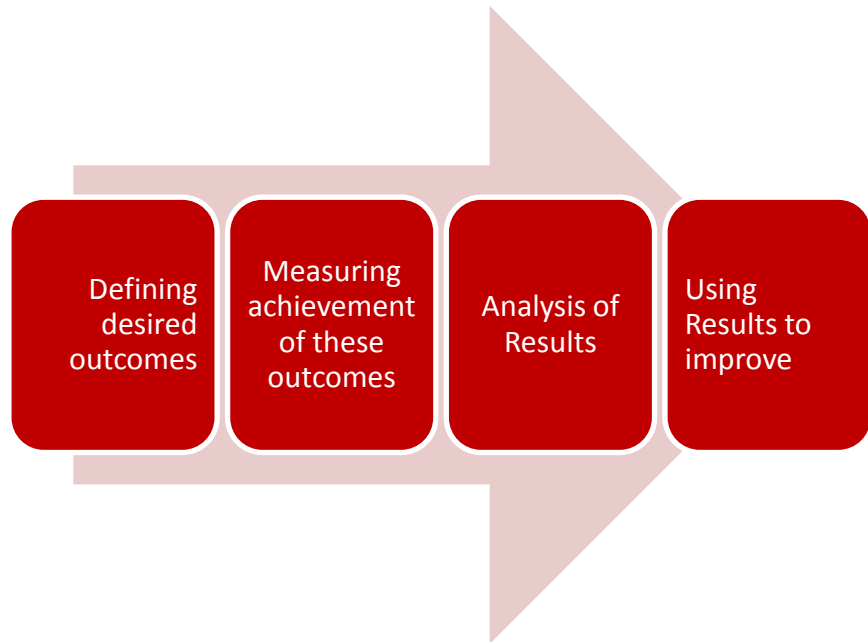


Assessment of Educational Programs

This program is designed to help faculty, administrators and staff develop ways to define and assess goals/objectives and use results to improve student learning at Gadsden State. Using assessment results to improve the learning process is fundamental to the mission of the College. The interest in accountability and value-added education continues to be of great interest in higher education. The rigorous requirements of accrediting agencies, the interest of the public community served by the College and the professionalism and commitment of the faculty and administration are the driving forces behind this improvement process. The focus of this manual is based on “simple, common sense principles.” (Suskie, 2009)



Purpose and Process of Assessment

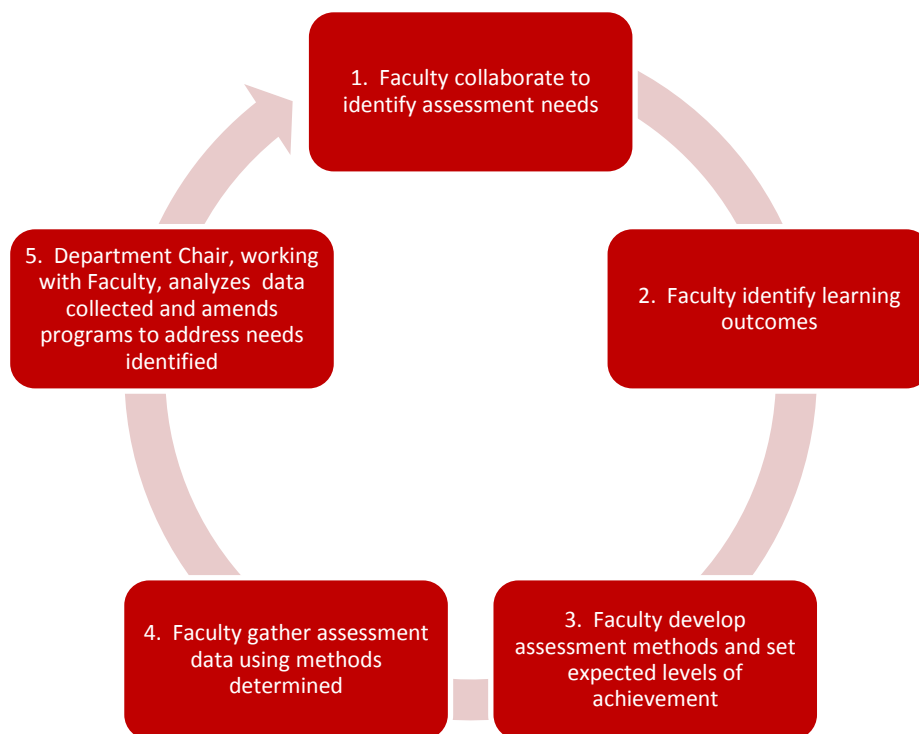
Assessment is done to bring about improvement. Assessment in Community Colleges typically involves measurement of student performance at the levels of course, program and institution. Currently, all regional accrediting agencies expect evidence of engagement in assessment of student learning outcomes at all institutional levels: course, program, institution, and across administrative, instructional and student services programs. Professional accreditors also emphasize student learning outcomes and, particularly, demonstration of performance in specific competency and skills areas. (Serban, Summer 2004) Assessment is research but is not intended at this level to be a scholarly, peer-reviewed body of work. For this purpose, assessment is defined as

- Establishing a clear, measurable, expected outcomes of student learning;
- Ensuring that students have sufficient opportunities to achieve those outcomes;
- Systematically gathering, analyzing, and interpreting evidence to determine how well student learning matches expectations;
- Using the resulting information to understand and improve student learning

Assessment done well can be used to “tell our story: what makes our college or programs distinctive and how successful we are in meeting students’ and societal needs.” (Suskie, 2009)

Ultimately, assessment is about gathering and analyzing evidence to effect improvement in a program. The assessment process seeks to answer questions such as

- How do we know if students are learning what we are teaching?
- How do we know if we are teaching what our students need to learn?
- How can we improve the way we attempt to take the student from where they are to being a successful program completer?
- Are we preparing our students for the workplace?
- Are we assessing learning in multiple ways, i.e., tests, projects, lab work, internships, portfolios?



Assessment at Gadsden State is an ongoing, **faculty driven** process. The process is oriented toward improving the quality of the educational experiences we offer our students and is not driven solely by the requirements of accrediting agencies. Assessment is not conducted to evaluate faculty or staff nor is program level assessment focused on individual student evaluation. At the program level, assessment looks at the performance of a group of students to

determine the impact of instructional activities. It follows then that institutional assessment is an analysis of the learning process taking place in each of the programs that make up the College. The purpose of program assessment at Gadsden State can be summed up as follows:

1. The unit states its function and relates it to the College Mission statement (Unit Mission Statement)
2. The unit identifies the outcomes expected (**Student Learning Outcomes**).
3. The unit defines the methods to be used in evaluating the objective and sets the criteria it will use to determine if the outcomes are achieved (**Assessment Method**).

- a. The Assessment Method must describe the manner in which data will be collected (**Rubric, Checklist, External Licensure Exam, etc**).
- b. The Assessment Method must also include the **Criteria** used to determine the level of achievement of the group of students.
4. The unit reports whether or not the outcome criteria have been met and the results of assessment (**Assessment Results**).
 - a. The unit presents documentation (**Evidence**) of results
 - b. The unit identifies areas of deficiency (**Analysis of Results**)
5. The unit reports the improvements that have been implemented to improve student learning based on the analysis of results (**Use of Results**).

It is not enough to say that 90% of students performed at a highly proficient level. It is necessary to define what highly proficient means within the program and also to provide documentation used as the basis for this determination. Furthermore, it is important that the results of student assessment be analyzed to determine whether or not there are deficiencies in the performance of students as a group. For example, there may be 10 important concepts in a Student Learning Outcome and if all students achieved #1 through #9 but performed poorly on #10, then this is an area of deficiency that should be addressed through programmatic re-alignment.

Assessment at the Academic Program Level

Programs are more than a set of stand-alone courses. Programs are an integrated set of learning experiences culminating in student achievement of a broad set of goals. Assessment at the program level can be accomplished in a variety of ways. At the program level, faculty collaborates, and then designs assessments to measure student achievement of critical learning outcomes. Some examples of program level assessment tools are:

- Embedded course assignments – a project completed at an advanced level can be used to assess skills learned through the entire program.
- Field Experiences – internship, practicum, service-learning, etc., evaluated through supervisors’ ratings of student performance can be powerful evidence of a successful program.
- Portfolios – compilation of student work over time can be a clear demonstration of student learning, although they can be complicated to assess.
- Rubrics, Checklists, Task sheets – in advanced level courses, completed rubrics can be very useful evidence of student achievement in a program.
- Results of external licensure or certification exams.
- Embedded comprehensive exam questions.

Program Assessment is focused on the evaluation of a group of students – never individual students or instructors.

In all of the examples above, the assessment tool is associated with a set of benchmarks, determined in advance of the assignment, that provide the mechanism through which student learning is evaluated. Data alone is just a collection of numbers or facts. Information on the other hand, organizes data so that it becomes useful for decision making purposes. To make this data useful for program assessment then, it is important that the data collected be aggregated or compiled so that the resulting information is useful for drawing conclusions about the achievement of the students as a group.

Grading v. Assessment

Let it be said, there is a great deal of overlap between grading and assessment – grades can be a powerful motivator for students. The fundamental difference between the two processes however, is that grades measure individual achievement and assessment attempts to measure achievement of a broad group of individuals. Grades alone are insufficient evidence of the learning process at the program level.

- Grades alone don't provide meaningful information about the learning process – a grade of B in chemistry does not tell us what the student learned and didn't learn about chemistry.
- Grading and assessment criteria may differ – some faculty may factor in such things as attendance, class participation, late penalties for assignments, or class room behaviors. It can be that a student who plays by the rules and fulfills less important classroom management obligations would receive a fairly high grade for achievement of learning goals at a lower level than desired.
- Grading standards may be vague or inconsistent – Faculty teaching sections of the same course may not agree on common standards and may implement standards differently.

When it is said “You can't use grades for assessment” what is meant is that you can't just say, “Seventy-three percent of our students get grades of A or B ...so we are doing okay.” A letter grade by itself does not give enough information about the learning that was tested or the criteria that were used. To use the grading process for assessment, one must:

1. Ensure that the classroom exam or assignment actually measures the learning goals
2. State explicitly in writing the criteria for evaluating student work in sufficient detail to identify students' strengths and weaknesses
3. Develop systematic ways of feeding information about student strengths and weaknesses back to decision makers at the departmental ... and institutional levels, and using that information for programmatic improvement. (Walvoord, 2004)

In general, grades do not reflect all learning experiences – as *Greater Expectations* (AACU, 2002) makes clear, “grades provide information on student performance in individual courses or course assignments...not...on how well students have learned key competencies such as critical thinking or writing skills holistically...”

Learning Outcomes Theory

Learning outcomes...are goals that describe how students will be different because of a learning experience. More specifically, learning outcomes are the knowledge, skills, attitudes, and habits of mind that students take with them from a learning experience. (Suskie, 2009)

Bloom's taxonomy is one popularly known framework for constructing learning outcomes. Bloom identified three domains of learning: cognitive, affective (attitudinal) and psychomotor (physical). The cognitive domain has six progressive levels: Knowledge, comprehension, application, analysis, synthesis (create) and evaluation. Others have expanded the taxonomy. Arthur Costa and Bena Kallick postulate "habits of mind" such as "persisting, thinking flexibly, and striving for accuracy. Robert Marzano, Debra Pickering, and Jay McTighe emphasize additional think skills such as organizing skills." (Suskie, 2009) Suskie offers the following summary of the various frameworks:

Knowledge and conceptual understanding

Although knowledge and conceptual understanding are important in many courses, they are less important now than a generation ago. Most research shows that information students memorize is stored in short term memory and can be quickly forgotten. Is it so important to remember a formula, date, or vital statistic when it can be looked up effortlessly? Researchers postulate that educational emphasis should be placed on "developing skills and attitudes that will last a lifetime such as the ability to write well, analyze the difference between two theories, or appreciate American folk music?" Students will always need to remember some knowledge and concepts but in higher education, we expect students to take knowledge and concepts further and *use* facts and concepts. (Suskie, 2009) For example:

- Explain how to access the Internet from computers in campus labs.
- Summarize the distinctive characteristics of a particular novelist.
- Understand each component of the scientific method.

Thinking and other skills – these include the following:

Application – the ability to use knowledge and understanding in a new context. It includes the abilities to understand cause and effect relationships, understand a logical proposal, develop literary critiques and apply scientific principles to new situations.

- Apply scientific or economic principles to everyday life.
- Locate online resources on a particular topic or issue.
- Solve mathematics word problems

Analysis – the capacity to break a complex concept apart to understand the relationships of its components. Students who can analyze can integrate their learning and apply it to situations they haven't seen before.

- Explain chemical reactions not explicitly introduced in prior study.
- Explain the impact of the Korean War on U.S. –East Asian relations today.
- Analyze errors.
- Compare and contrast perspectives and values.
- Explain why a particular research paper is structured to way it is.

Evaluation, Problem-Solving, and Decision-Making Skills – making informed judgments about the merits of something the student hasn’t seen before. These skills include the ability to conduct research, compose logical arguments, solve problems without a single correct answer, and justify persuasive arguments.

- Judge the effectiveness of the use of color in a work of art.
- Evaluate the validity of information on a particular Web Site.
- Research, identify, and justify potential careers.
- Choose the appropriate mathematical procedure for a given problem.
- Identify an audit problem in a financial statement, and recommend ways to address it.

Synthesis and Creativity – Synthesis is the ability to put together what one has previously learned into something new; Creativity is “a perceptible product that is both novel and useful as defined in a social context.”

- Write a poem that uses imagery and structure typical of early-nineteenth century American poets.
- Theorize what is likely to happen when two chemical are combines, and justify the theory.
- Design and conduct a research study.
- Design a community service project.

Critical thinking is a concept that does not have popular consensus as to its meaning. It includes most of the skills described above such as analysis, evaluation, and problem solving.

- Information Literacy – includes both critical thinking and problem solving.

Attitudes, values, dispositions, and habits of mind

Includes appreciation, integrity, character, enjoying and valuing learning, and becoming aware of one’s own values and how they may differ from the values of others. The phrase “personal and social responsibility” has been used to describe many of these traits.

- Be intellectually curious.
- Appreciate the merits and value of a subject or discipline.
- Appreciate the perspective of people from backgrounds different from your own.
- Choose ethical courses of action.

Increasingly, higher education authorities agree that college graduates should have the three capabilities described below:

Communication Skills, especially in writing	Virtually everyone needs to be able to express himself or herself clearly in writing and speech
Information Literacy (Research and Problem Solving) Skills	Because virtually everyone needs to continue to learn independently after graduation, both to stay current in their field and for personal enrichment, everyone needs to know how to find information and evaluate its merits and worth in order to solve problems and make decisions.
Interpersonal Skills	Many careers require the ability to work with and lead others.

Consider the following:

Too Vague: Students will demonstrate information literacy skills

Too Specific: Students will be able to use the college's online services to retrieve information.

Better: Students will locate information and evaluate it critically for its validity and appropriateness.

Concrete action words help students understand what they are to learn. They also make assessment easier since the method is laid out in the learning outcomes. For example: Describe, create, explain, develop, design, analyze, solve, present, critically evaluate, apply, write, and conduct.

DEFINITIONS

Outcome

This is a brief, clear statement expressing in measurable terms the expected results of teaching process.

Example of Student Learning Outcome: Welding Technology students will demonstrate the skills necessary to safely set up, set correct regulator settings, set proper cutting flame, perform straight line and shaped cuts, identify and solve common problems associated with OFC equipment, and properly shut down OFC cutting equipment.

Assessment Method

This consists of two distinct parts: the Criteria and Methodology.

Criteria

This is a statement of the specific standards that demonstrate successful achievement of the intended outcome. It includes the following elements: data that will be used, who will demonstrate achievement, and when, under what conditions, and to what degree the demonstration will occur.

Methodology

The methodology (Assessment Method) is a description of the actions that must be taken to gather, analyze, and report the findings of the data that will be used to determine whether to outcome has been achieved and who is responsible for each.

Example of Criteria and Methodology: Welding Technology students will be evaluated during the oxy-fuel laboratory using a faculty developed rubric. 90% of students will demonstrate proficiency on the oxy-acetylene laboratory tasks.

Direct Measure

These are the indicators that are immediately observable such as pre-post testing, oral examinations, internships, portfolio assessments, standardized national exams, and locally developed tests, performance on licensure, certification, or professional exams, and juried reviews and performances.

Indirect Measure

These are indicators that are not observable until later such as information gathered from alumni, employers, and students, graduation rates, transfer studies, graduate follow-up studies; success of students in subsequent institutional settings, and job placement data. (Austin Community College Reference, 2001)

Results

A statement of what was learned from the Assessment Method.

- Example of Statement of Results: 100% (50 of 50) of students were rated satisfactory ("Adequate") or higher on six of the eight categories of oxy-acetylene laboratory tasks. 75% of students (38 of 50) were rated as satisfactory or higher on Shape cutting skills, and 83% of students (42 of 50) were rated satisfactory or higher on Problem Solving Skills. *(Note: the faculty provided summarized documentation to support the data reported. This was published as an embedded link in the IE system so that external reviewers could examine the results.)*

Use of Results

An analysis of the results obtained from the assessment. This section should also describe how the department used these results to improve the program.

- Example of Use of Results Statement: Deficiencies were noted in Shape cutting skills and Problem Solving skills. The faculty has added additional instruction and instructor demonstration on these concepts. Students have also been provided with additional guided practice opportunities in the lab.

Documentation

Statements such as "86% of students demonstrated proficiency in...." must be supported. Provide documents that show how it was determined that 86% of the students demonstrated proficiency and at what degree of acceptability. Information regarding how many students were in the sample reported should also be provided. If a rubric/checklist was used, summarize the results for all sections of the class taught. Documentation may also be in the form of results of external licensure, portfolios, and evaluations of student internships or experiential learning. Provide copies of documentation to be linked to the SLO.

Outcomes: Who, What, When, and How

Outcomes are written to provide concrete, concise, meaningful evidence that the program is teaching what students should learn and that students are learning what the program is teaching. The essential components of Learning Outcomes include:

- Who will demonstrate the results?
 - Graduates of the program?
 - Students majoring in the program?
 - Employers?
- What behavior or action will demonstrate results?
 - Use "action" verbs?

- State the skills, concept, attitude that demonstrates the results?
- What will students know or be able to do?
- What skills will students have acquired?
- What attitudes, values, or interests will students demonstrate?
- When will results be demonstrated?
 - After graduation?
 - After completion of the program?

Minimally, outcomes statements should describe what the faculty would accept as evidence that learning was achieved by a group of students.

Example: ***95% of the graduates of the office administration program will report employment in the field on the survey distributed one year after graduation.***

In this statement, we have identified *what* is to be demonstrated (employment), the level that is acceptable (95%), *who* will do it (graduates), *when* they will demonstrate it (one year after graduation), and *how* they demonstrate it (by responding to a survey).

Example: ***Ninety percent (90%) of students graduating from the Air Conditioning and Refrigeration program will earn a “Satisfactory” rating on the final review of their student portfolio.***

In this statement, *what* is defined as a satisfactory rating, the *level* of acceptable performance is 95%, *who* will do it are the graduates, *when* they will do it, and *how* they demonstrate it (portfolio).

Note that in this example, “satisfactory” must be defined either in the outcome or prominently on the assessment instrument.

Points to Consider

- The outcome describes a **learning result** rather than a **teaching process**
- The outcome describes what the student will be able to **demonstrate**
- The outcome is **measurable**
- The outcome is **specific**
- The outcome addresses no more than a **single result** (no conjunctions)
- The outcome **uses action verbs** that specify definite, observable behaviors
- The outcomes is **clear**
- The outcome is **validated** by departmental colleagues, i.e., if a course/program is taught on multiple campuses or by several instructors, collaboration is essential to ensure continuity.
- The outcome is linked to the **Mission Statement**
- The outcome is **reasonable**

All of this can result in a great number of student learning outcomes – sometimes, too many to manage adequately. Select only three to five outcomes to be assessed each year. The reason for this limitation

is based on the availability of resources, time, staff, ability of the unit to address the results of assessing the outcomes, etc. To refine or reduce a set of outcomes statements, consider the following:

- What outcomes can the faculty agree are most important?
- Which of the outcomes have the potential to make a difference in how the unit functions?
- Which of the outcomes will yield information that will help a unit learn about and improve itself?
- Which of the outcomes will ensure the assessment plan will actually be implemented?

Assessment Method

What level of performance is acceptable to determine student success?

Usually this is expressed as a percentage and clearly identifies the level of performance that faculty of the program have determined to be acceptable.

Consider the following questions when developing Assessment Methods:

- What “tool” will be used to collect the data?
 - Direct indicators – pre-and post-testing; capstone courses; oral examinations; internships; portfolio assessments; evaluation of capstone projects; standardized national exams; locally developed tests; performance on licensure, certification or professional exams; juried reviews and performances.
 - Indirect indicators – alumni; employer; student surveys; graduation rates; transfer studies; graduate follow-up studies; success of students in subsequent institutional settings; job placement data.
- When will the data be collected? At the end of a series of courses? When a group of students has completed a program? After licensure tests? After students gain employment?
- How will the data be analyzed? Who will translate the data into usable information?
- How and to whom will the data be reported? Results of assessment should be seen as formative, not punitive.
- Who will be responsible for collecting the data specified in the criteria?
 - Who will select or create the assessment instrument?
 - Who will administer the instrument?
 - Who will analyze the data and report the findings?
 - Who will act on the information to make improvements?

Results

What did the program find out from its assessment efforts?

These should be reported on the IE system in summary form. For example, “Seventy percent (70%) of the 26 students responded they were satisfied” or “The average was at the 48th percentile” or “90% (9/10) of students increased their speed of transcription by one level.” If the Assessment Method was stated clearly and concisely, reporting the results is simple.

What do these finding mean?

Analyze Results!!

A brief statement analyzing what these results mean may be included in Results. For example, a good beginning is something like: “These results indicate students are not retaining information from the foundation course... Weakness in the areas of determination of superheat and air flow were noted.”

Use of Results

What will the unit do regarding the assessed outcome?

If the criteria have been met or surpassed, it may be that no changes are necessary and the unit might report something like “...outcome will be assessed once more next year to validate results.” Be careful with this....there is almost always room for improvement!

If the findings indicate that the criteria have not been met, an action plan for implementing improvements should have been developed and documented in this section of the IE System. The actions taken to address the weakness should include specific plans for implementing improvements, timelines and

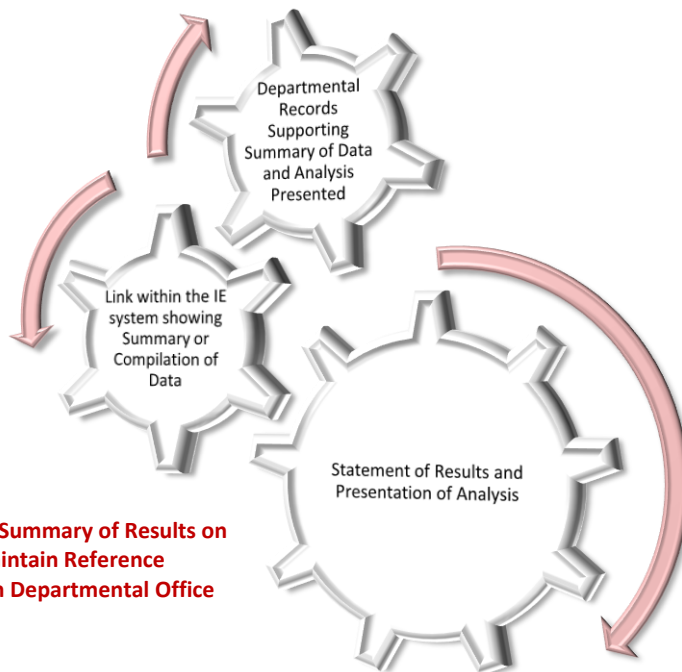


Figure 1: Report Summary of Results on IE System but Maintain Reference documentation in Departmental Office

task assignments and these plans should be based directly on the results reported in the previous section. If a committee was appointed to study possible improvements, documentation of their deliberations or minutes of faculty meetings should be included.

USPs and SLOs

Unit Strategic Plans (USP) are plans required of administrative units of the College. Admissions and Records, Financial Services, etc., do not have a teaching component in their mission. Mathematics, Science, Language & Fine Arts, Applied Technologies, Engineering Technologies on the other hand are some examples of units that have a USP and must also develop Student Learning Outcomes (SLO). These units have both an administrative function (and a budget!) and an instructional function to their mission. As a result, they have both a Unit Strategic Plan (to account for the funding, material and human resources allocated to them) and a Student Learning Outcomes plan (to account for the instructional components of their mission).

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