Assessment of Student Learning

Handbook for Faculty

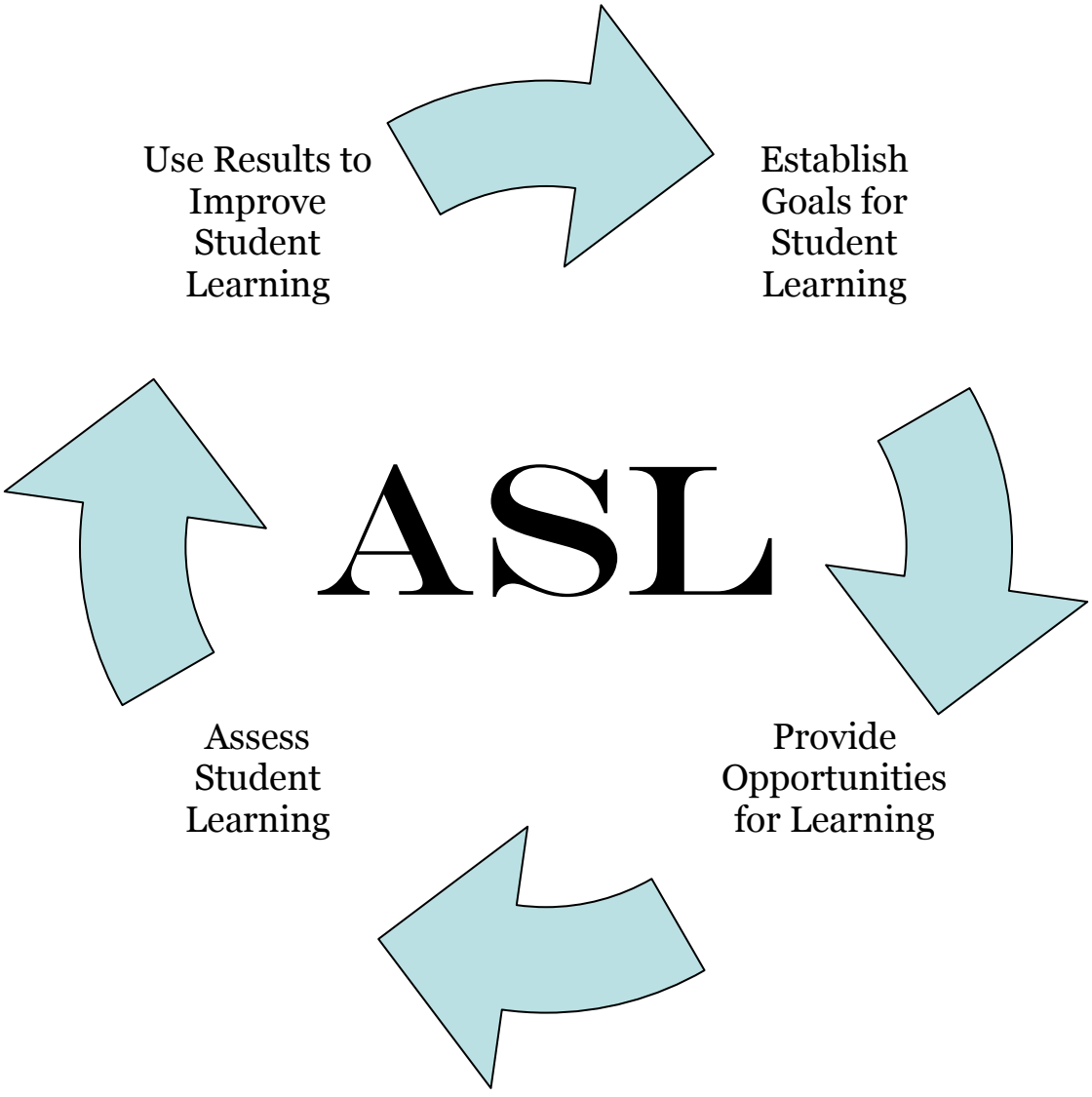


Table of Contents

Section One – The Foundation for Assessment

Purpose of Assessment

The primary purpose of assessment is the improvement of student learning. The assessment process will highlight and promote those practices that are most effective, determine action for improvement where needed and provide evidence of program quality and student learning.

Assessment of Student Learning

According to Middle States Commission on Higher Education, an accredited institution is characterized by the following elements.

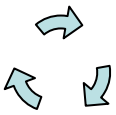
- Clearly articulated statements of expected student learning outcomes at all levels (institution, degree/program, course) and for all programs that aim to foster student learning and development;
- A documented, organized, and sustained assessment process to evaluate and improve student learning;
- Assessment results that provide sufficient, convincing evidence that students are achieving key institutional and program learning outcomes;
- Evidence that student learning assessment information is shared and discussed with appropriate constituents and is used to improve teaching and learning; and
- Documented use of student learning assessment information as part of institutional assessment.

CCAC Adopted Definition of Assessment

Assessment is the ongoing process of:

- Establishing clear, measurable objectives (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 our expectations.
- Using the resulting information to understand and to improve student learning.

(Linda Suskie, *Assessing Student Learning*, 2004)



- **Assessment at CCAC**
    - Assessment of student learning will be faculty led; however, all members of the college community and external stakeholders will be involved in the process.
    - Assessment is not punitive and results are not used against faculty, but rather are used by faculty to improve teaching and ultimately, student learning.
    - Assessment does not employ a singular strategy but uses multiple measures and evidence systematically collected over time.
    - Attempting to assess all outcomes every academic year is an unreasonable expectation; rather, a manageable number of outcomes will be assessed at each assessment cycle.
    - Assessment is not a "once-and done" or "add-on" process. Assessment will be incorporated into the overall fabric of the college and will allow for an ongoing, systematic and continuous improvement of student learning.

CCAC Definition of an Educated Person

An educated person is one who acquires and continues to expand upon the following:

1. A broad range of knowledge upon which to make value judgments;
2. The skills to locate valid information and comprehend that information;
3. The ability to analyze critically and synthesize efficiently valid information; and
4. The ability to listen carefully and to communicate effectively.

(Developed by ASL Taskforce, July 2005)

Section Two – The Process of Assessment

Levels of Assessment

Assessment of Student Learning at CCAC takes place on three levels and faculty participate in all three levels:

1. **Classroom/course assessment**, which is based on the *course outcomes* established for that course;
2. **Program assessment**, which is based on the *program objectives* established for that program; and
3. **General education assessment**, which is based on the *general education goals* established by the college.

The outcomes, objectives, and goals for learning that have been established at CCAC are closely aligned to Bloom's Taxonomy of Learning Objectives. Refer to Appendix A for more information on Bloom's Taxonomy and assessable verbs.

Classroom Assessment

- Classroom assessment is an approach designed to help teachers find out what students are learning in the classroom and how well they are learning it (Angelo & Cross); this assessment should be related to the course outcomes established for the course.
    - *Course outcomes* are learning outcomes that are observable, measurable and assessable statements of the end products of student learning including knowledge, skills, competencies and attitudes.
    - Classroom assessment is accomplished via utilization of Classroom Assessment Techniques (CATs). CATs refer to a collection of tools faculty can use to get feedback on how well they are achieving their goals. CATs reinforce student learning in three ways:
        1. by focusing student attention on the most important elements of the course;
        2. by proving additional practice in valuable learning and thinking skills; and,
        3. by training students to become more self-aware, self-assessing, independent learners (Angelo & Cross).

The following are examples of Classroom Assessment Techniques (CATs) taken from Angelo and Cross. For additional information on these and other CATs, please refer to *Classroom Assessment Techniques: A Handbook for College Teacher*s by Angelo and Cross located in each CCAC campus library reserve.

The One-Minute Paper
The one minute paper consists basically of two questions: "What was the most important thing you learned during this class?" and "What important question remains unanswered?" These questions are probably most useful for lecture or discussion courses immediately after completing one of the major objectives of your course. The questions are usually passed out toward the end of a class and students are given 3 – 5 minutes to write. In some cases, it could also be used at the beginning of class (with a slight rephrasing) if an assignment was made at the end of the previous class. If, after reading the responses from your students, you notice a lack of understanding of the concept or objective, you may correct those misconceptions before an exam. Typing these questions on a half sheet of paper or an index card makes a useful tool that is quick to administer and easy to analyze (even with a fairly large class). If, after reading the responses from your students, you notice a lack of understanding of the concepts or objectives covered, you may correct those misconceptions immediately. It may not be a good idea to use this after every class since students begin to take the exercise too lightly.

The Muddiest Point
The muddiest point is again a very quick technique that consists of basically one question: "What was the muddiest point in today's discussion/assignment?" or "After today's discussion, I am still confused about…". Most likely, this would be administered at the end of a class or presentation but it could certainly be used at the beginning if an assignment or reading was given from the previous class. Unlike the one-minute paper, it can be used quite frequently in class where new concepts are presented on a regular basis (such as mathematics or natural sciences). Analysis should be kept simple and you should probably sort them into piles of similar responses before you address any misunderstandings.

What's the Principle? - Identify basic principles of the learning content. Present students with several problems and ask the students to decide what principle can be used to solve the each problem. This displays the students' working knowledge and application of basic principles related to the course content.

Directed Paraphrasing - Upon selection of a main theory or concept students have studied, ask students to paraphrase the material in everyday language. This allows the instructor feedback on the students' ability to summarize information and the ability to translate specialized knowledge into everyday language.

Classroom Opinion Polls - Select issues related to learning content and survey students' opinions related to these issues. This will assist in uncovering students' opinion that may hinder learning the course content. It will also allow students to explore their views on a subject.

Course Related Self-Confidence Surveys - Survey students' confidence levels on skills and abilities that are deemed important for the success student learning of the subject matter. This allows the instructor to assess the students' level of confidence and instruct in a manner that will build confidence and motivation.

Documenting the results of CATs, particularly how the results are used by faculty members to improve learning in the classroom, provides valuable information. Please refer to Appendix B, *Using Classroom Assessment Information in Your Teaching Portfolio* for more information. Refer to Appendix C for a *Faculty Summary Sheet* that can be submitted to the ASL committee as evidence of faculty commitment to the assessment process.

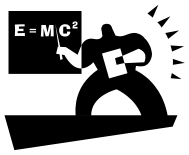
Course Assessment

- Course assessment should be considered an extension of classroom assessment and requires collaboration among instructors teaching different sections of the same course.
- Collaboration involves agreement on a learning outcome to assess and then applying the same assessment technique and aggregating results (this can be done anonymously).

  Technique ideas:
  - Use embedded test questions
  - Create a rubric for a shared assignment
  - Choose an appropriate CAT

  Use results!
  - Identify strengths and weaknesses in the curriculum or in students
  - Identify changes to improve teaching and learning.

Program Assessment



- Program Assessment helps determine whether students can integrate learning from individual courses into a coherent whole. It is interested in the cumulative effects of the education process (Palomba and Banta). Whereas classroom assessment focuses on gauging learning for individual students, *program assessment gauges the learning of a group of students*. The outcomes information in program assessment is used to improve courses, programs, and services.

- Program assessment is based on established program objectives - detailed aspects of the program that are accomplished by the successful completion of the course outcomes.

- The Program Assessment process involves the identification of one direct measure and one indirect measure to be assessed each academic year.

    - *Direct Measures* - Tangible evidence of what students have and have not learned.
    - *Indirect Measures* - Reveals students are learning but evidence of what students have learned is less clear.

- All programs/disciplines will conduct program assessment annually as part of the CCAC Annual Program Review Process.*

- The assessment website contains helpful information about conducting program assessment. See the program assessment section of the website for a guidebook, and blank forms. Go to www.ccac.edu/assessment and click Assessment of Student Learning.

***Program Review Process**

Each program/discipline at CCAC must undergo an annual review, which includes program assessment and each program/discipline must undergo an extensive review every five years. Specific guidelines for both the annual review and 5-year review are included www.ccac.edu [keyword: program review].

General Education Goals and Assessment

- General Education Learning Goals support the definition of an educated person by uniting student learning experiences across all programs, courses, and services at CCAC. General Education Learning Goals include essential knowledge and skills that help students to adapt to and participate in global, cultural, social, political, economic, personal, and technological change. The Learning Goals support students in achieving successful pursuits in higher education, successful career, and life-long learning.

- Upon graduation with an Associate's Degree, a CCAC student will acquire a level of proficiency comparable with the first two years of a baccalaureate degree in the following General Education areas:

  - **COMMUNICATION**
    Employ written and oral communication skills in order to convey clear and organized information to target audiences for specific purposes

  - **TECHNOLOGICAL COMPETENCY**
    Use digital technology and other discipline-specific technological tools in order to access and communicate information needed to complete tasks

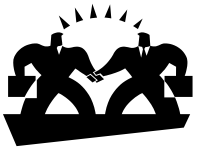
  - **INFORMATION LITERACY**
    Retrieve, analyze, synthesize, organize, and evaluate information through technological and traditional means

  - **CRITICAL THINKING AND PROBLEM SOLVING**
    Identify problems, explore solutions, prioritize solutions, and revise priorities as a means for purposeful action

  - **QUANTITATIVE AND SCIENTIFIC REASONING**
    Apply appropriate mathematical and/or scientific concepts and theories in order to interpret data and solve problems based on verifiable evidence

  - **CULTURE AND SOCIETY**
    Describe and explain behaviors and beliefs, socio-historical influences, and aesthetic values of various populations within and outside of the United States

Section Three – Becoming a Part of the Assessment Culture at CCAC



- Checklist for Faculty

  Participation in assessment at CCAC can and should occur on many levels. As you examine your own involvement in the college-wide assessment effort, you may find it helpful to ask yourself some of the following questions.

Regarding the Classroom:

- ☐ Am I aware of the course learning outcomes established for the courses I teach?
- ☐ Have I insured that the curriculum I deliver in the classroom is connected to those outcomes (course mapping)?
- ☐ Have I insured that student assignments, quizzes and exams reflect the outcomes-related curriculum (test blue printing)?
- ☐ Have I included the ASL-recommended assessment statement in the course outlines that I distribute at the start of each semester?
- ☐ Have I conducted a classroom assessment technique and written a summary for the ASL committee?

Regarding my Program/Discipline:

- ☐ Am I aware of the program/discipline objectives that have been established for the program/discipline area in which I teach?
- ☐ Am I aware of the program objective that is being assessed during the current academic year? Am I participating in that assessment?
- ☐ Am I planning to attend a spring meeting with other faculty in my discipline to discuss the results of that discussion and utilize those results to improve student learning?

Regarding General Education:

- ☐ Am I aware of the six general education goals for CCAC students?
- ☐ Am I aware of how our program/discipline has identified where our program objectives/course outcomes relate to the General Education Goals of the college?

Regarding my Teaching Portfolio:

- ☐ Do I have a plan to include the results from my classroom assessments and participation in course, program, and General Education assessment in my Improvement of Teaching Portfolio?

The appendices in this document should provide many of the resources required for participation in and understanding of assessment. The glossary (see Appendix E) may include terms related to assessment that you do not understand.

Please remember that any activity you do for the assessment of student learning is important to this institution. For further information concerning other student learning assessment techniques, please consult the Angelo and Cross book; *Classroom Assessment Techniques*, which is on reserved in each campus library.

We would appreciate it if you would write a short summary of assessment activities and forward it to aslcommittee@ccac.edu. A form is included as an appendix to this document (Appendix C).

Assessment Statement for Your Course Outline

Establishing a college-wide culture of assessment includes involvement of our students. Please consider putting an assessment statement in your course outlines. A suggested statement follows.

CCAC has a college-wide assessment program, the primary purpose of which is the improvement of instruction and student learning. Course outcomes and the general education goals (Communication, Technological Competency, Information Literacy, Critical Thinking and Problem Solving, Quantitative and Scientific Reasoning, and Culture and Society) will be assessed.

As a student, you should always understand the goals, objectives and learning outcomes of your courses and program of study to help you analyze your performance and make your learning most effective. It is always our goal to have students function at their fullest capacity.

APPENDIX A

BLOOM'S TAXONOMY OF LEARNING OBJECTIVES

Bloom's Taxonomy

The outcomes, objectives, and goals for learning that have been established at CCAC are closely aligned to Bloom's Taxonomy of Learning Objectives. Each begins with an *assessable verb* that describes what the student should be able to do upon successful completion of a course, program, or degree at CCAC.

Some examples of assessable verbs are as follows (note progression of verbs within the cognitive domain of learning).

1. ***Knowledge***: arrange, define, duplicate, label, list, memorize, name, order, recognize, relate, recall, repeat, and reproduce state.
2. ***Comprehension***: classify, describe, discuss, explain, express, identify, indicate, locate, recognize, report, restate, review, select, and translate.
3. ***Application***: apply, choose, demonstrate, dramatize, employ, illustrate, interpret, operate, practice, schedule, sketch, solve, use, write.
4. ***Analysis***: analyze, appraise, calculate, categorize, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, and test.
5. ***Synthesis***: arrange, assemble, collect, compose, construct, create, design, develop, formulate, manage, organize, plan, prepare, propose, set up, and write.
6. ***Evaluation***: appraise, argue, assess, attach, choose compare, defend estimate, judge, predict, rate, core, select, support, value, evaluate.

From Benjamin S. Bloom *Taxonomy of educational objectives*.

APPENDIX B

USING CLASSROOM ASSESSMENT INFORMATION IN YOUR TEACHING PORTFOLIO

Using Classroom Assessment Information in Your Teaching Portfolio

The process of assessment of student learning should not involve a great deal of additional work but could feed seamlessly into what we already do. By formalizing and documenting this process, we may learn there are changes we can make in instruction to improve our part of the student learning process.

Per Article X of the College Bargaining Agreement (CBA), all tenured faculty are required to submit a portfolio at least once every four years. Non-tenured faculty are required to submit a teaching portfolio on an annual basis until tenure is achieved. Incorporating the assessment from one unit of a course could be a convenient way to satisfy those parts of the portfolio that address outlines, syllabi, assignments, etc. while not being burdened with added paperwork. The purpose of this paper is to acquaint all of us with some of the simpler techniques and examples that are easily integrated into the classroom and provide valuable feedback from students regarding their learning.

Classroom assessment is basically a four-step process that many of us use all of the time but some of us rarely document. These steps involve:

- Writing measurable learning outcomes;
- Providing the opportunity for students to learn those outcomes;
- Evaluating student success at those outcomes; and
- Deciding what could be done to improve student learning of those outcomes in the future.

The last step of this process could very easily be the reflective essay (Item 8 of the *Improvement of Teaching Process* of the CBA) in the teaching portfolio. Faculty completing such a portfolio would also greatly benefit the college in meeting the Middle States Accreditation Standards to document evidence of student learning.

The following are some of the more common techniques as listed by Angelo and Cross in *Classroom Assessment Techniques*. It is generally a good idea to select a class that is going fairly well where most of the students are succeeding and not with a problematic class or a difficult situation until you become more experienced.

(1) The One-Minute Paper

The one minute paper consists basically of two questions: "What was the most important thing you learned during this class?" and "What important question remains unanswered?" These questions are probably most useful for lecture or discussion courses immediately after completing one of the major objectives of your course. The questions are usually passed out toward the end of a class and students are given 3 – 5 minutes to write. In some cases, it could also be used at the beginning of class (with a slight rephrasing) if an assignment was made at the end of the previous class. If, after reading the responses from your students, you notice a lack of understanding of the concept or objective, you may correct those misconceptions before an exam. Typing these questions on a half sheet of paper or an index card makes a useful tool that is quick to administer and easy to analyze (even with a fairly large class). If, after reading the responses from your students, you

notice a lack of understanding of the concepts or objectives covered, you may correct those misconceptions immediately. It may not be a good idea to use this after every class since students begin to take the exercise too lightly.

Example (Angelo and Cross): An instructor in European History finished a lecture on why Italy was so important to the Renaissance and, at the end of the class, asked two questions: "What is the single most significant reason that Italy became the center of the Renaissance?", and "What one question still puzzles you about Italy's role in the Renaissance?" After perusing the responses, the instructor noticed that many students confused cause and effect. However, the responses to the second question showed students asking more insightful questions than they had during class. At the beginning of the next class, the instructor was able to clarify many of the concerns in 10 to 15 minutes.

(2) The Muddiest Point

The muddiest point is again a very quick technique that consists of basically one question: "What was the muddiest point in today's discussion/assignment?" or "After today's discussion, I am still confused about…". Most likely, this would be administered at the end of a class or presentation but it could certainly be used at the beginning if an assignment or reading was given from the previous class. Unlike the one-minute paper, it can be used quite frequently in class where new concepts are presented on a regular basis (such as mathematics or natural sciences). Analysis should be kept simple and you should probably sort them into piles of similar responses before you address any misunderstandings.

Example: A CCAC mathematics instructor, asking for comments on unclear points, found that students did not understand the difference between equations whose solution set are empty (no solution) versus those where all Real numbers are solutions.
In a help session after class, the distinction was resolved very quickly with a couple of examples.

(3) Application Cards

After hearing or reading about an important concept, you could ask the students to write down one (or more) real-world application of what they have just studied/learned. This technique requires students to connect what they are covering in class to prior knowledge or experience. Reviewing the responses will allow you do determine those that show insight, and you could make them known in a subsequent class. All students could benefit from hearing the best examples, and it may even give instructors a new source of material that helps future students understand the connections between the in-class material and the applications.

Example (Angelo and Cross): A Foundation of Physics instructor discussed Newton's Third Law of Motion: "To every action there is always opposed an equal reaction." The students were instructed to give three applications of the law around their house.

Remember that these assessment techniques could easily be incorporated in the teaching portfolio and the following is a list of the components to be included in the portfolio per Article X of the CBA and how your portfolio could include items of assessment.

Statement of Teaching Philosophy

- How has assessment of student learning influenced, changed and/or confirmed your teaching philosophy?
  - Assessment tools used to measure students' values, attitudes, and self awareness.
  - Assessment tools used to measure students' reactions to your teaching methods.

Course Outline

- Are learning outcomes stated in clear measurable terms?
  - Comparison of last portfolio course outline and current course outline. Describe changes that are reflective of assessment of student learning.

Sample Lecture/Laboratory Assignments

- Examples of Classroom Assessment Techniques (CATs) and how results are utilized in your teaching. Examples: Use of One Minute Paper, The Muddiest Point, and Application Cards mentioned earlier in this document.
- Assessment tools used to measure students' reactions to learning activities. Example: Group Work Evaluations

Sample of Examinations and Writing Assignments

- Do exam questions and writing assignments relate to course learning outcomes?
  - Samples of grading criteria. Example: Use of rubrics.
  - Use of Test Blue Prints or outlines.
  - Samples of study guides.
  - Use of capstone projects. Example: Student Portfolios, Research Projects
  - Exam Item Analysis. How are results utilized?
  - Assessment tools used to measure students reactions to student evaluation. Example: Exam Evaluations.

Handouts and Learning Aids

- Samples of handouts and learning aids to assist student learning. Provide a brief explanation why handout and learning aids were developed.

Summary of Student Opinion

- Review of questions about the course rather than the instructor.

Involvement with Assessment

- How have you participated in the assessment of student learning?
  - Classroom – Conducted classroom assessment? Submitted an Assessment of Student Learning Faculty Summary Sheet (Appendix C) to the ASL committee as evidence of faculty participation in assessment?
  - Course – Worked with other faculty in your program/discipline to assess a course learning outcome?
  - Program – Volunteered to lead the assessment of a program objective? Participated in program assessment by providing data?
  - General Education – Participated in Gen Ed assessment by submitting student artifacts? Participated on a Gen Ed evaluation team?

Evidence of Professional Growth

- Professional development activities focusing on the assessment of student learning

Please remember that any activity you do for the assessment of student learning is important to this institution. For further information concerning other student learning assessment techniques, please consult the Angelo and Cross book; *Classroom Assessment Techniques*, which is on reserved in each campus library. ***We would appreciate it if you would write a short summary of the activity and forward it to aslcommittee@ccac.edu.***

APPENDIX C

FACULTY SUMMARY SHEET

Community College of Allegheny County
Assessment of Student Learning
Faculty Summary Sheet

Faculty Name:

Campus:

Date:

Discipline/Program:

Course:

Topic:

Classroom Assessment Technique (CAT) used:

Summary of Student Feedback:

How Were the Results Used to Improve Student Learning:

I give my consent to the ASL Committee to use my submission on the assessment of student learning for education and/or research purposes. _____ Yes _____ No

Email to aslcommittee@ccac.edu.

APPENDIX D

ASSESSMENT GLOSSARY

Accommodations and Adaptations	Modifications in the way assessments are designed or administered so that **students with disabilities (SWD)** and limited English proficient students can be included in the assessment. Assessment accommodations or adaptations might include Braille forms for blind students or tests in native languages for students whose primary language is other than English. CRESST (http://cresst96.cse.ucla.edu/CRESST/pages/glossary.htm)
Alignment	The extent to which policy elements in a system work together to guide instruction and, ultimately, student learning Webb, N.L. (1997). *Criteria for alignment of expectations and assessments in mathematics and science education* (Research Monograph NO. 6). Madison: University of Wisconsin-Madison, National Institute for Science Education.
Alternative Assessment	An assessment that requires students to generate a response to a question rather than choose from a set of responses provided to them. (Exhibitions, investigations, demonstrations, written or oral responses, journals, and portfolios) (CRESST)
Assessment	The ongoing process of: • Establishing clear, measurable objectives (expected outcomes) of student learning • Ensuring that students have sufficient opportunities to achieve outcomes • Systematically gathering,, analyzing, and interpreting evidence to determine how well student learning matches our expectations • Using the resulting information to understand and to improve student learning (Linda Suskie, Assessing Student Learning, 2004)
Benchmark	A detailed description of a specific level of student performance expected of students at a particular period of time or developmental level. (CRESST)
Bloom's Taxonomy	A classification of levels of intellectual behavior important in learning. Bloom identified six levels within the cognitive domain, from the simple recall or recognition of facts, as the lowest level, through increasingly more complex and abstract mental levels, to the highest order which is classified as evaluation. (http://www.officeport.com/edu/blooms.htm)
Capstone Course	A course which allows the opportunity for students to demonstrate that they have achieved the goals for learning established by their educational institution and major department. The course is designed to assess cognitive, affective and psychomotor learning and to do so in a student-centered and student-directed manner which requires the command, analysis and synthesis of knowledge and skills. The capstone course integrates learning from the courses in the major with the courses from the rest of the academic experience. (http://users.etown.edu/m/moorerc/capstone.html)
Capstone Project	A culminating learning experience which provides an opportunity for the student to integrate and apply competencies acquired through coursework, knowledge, skills and experiential learning and to demonstrate a broad mastery of learning across the curriculum. http://users.etown.edu/m/moorerc/capstone.html)
Classroom Assessment	An approach designed to help teachers find out what students are learning in the classroom and how well they are learning it. (Angelo and Cross)
Classroom Assessment Techniques	A collection of tools faculty can use to get feedback on how well they are achieving their goals. CATs reinforce student learning in three ways: by focusing student attention on the most important elements of the course; by proving additional practice in valuable learning and thinking skills; and by training students to become more self-aware, self-assessing, independent learners. (Angelo and Cross)
Communication	Employ written and oral communication skills in order to convey clear and organized information to target audiences for specific purposes. (CCAC)
Course Map	A matrix that connects learning outcomes for a particular course to the

	activities within the course that allow for the achievement of the outcomes; it is an auditing tool that helps identify potential disconnects between course activities and the learning objectives established for the course. (Angelo and Cross)
Course Outcomes	See: Outcomes (Course)
Criterion-Referenced Assessment	An assessment where an individual's performance is compared to a specific learning objective or performance standard and not to the performance of other students. (CRESST)
Critical Thinking and Problem Solving	Identify problems, explore solutions, prioritize solutions, and revise priorities as a means for purposeful action. (CCAC)
Culture and Society	Describe and explain behaviors and beliefs, socio-historical influences, and aesthetic values of various populations within and outside the United States. (CCAC)
Curriculum Map	A matrix that connects goals or objectives to any courses within a particular discipline that allow for achievement of the goals/objectives; it is an auditing tool that helps identify potential gaps in the curriculum.
Direct Assessment	Gathers evidence about student learning based on student performance that demonstrates the learning itself; can be value added, related to standards, qualitative or quantitative, embedded or not, using local or external criteria. Examples are written assignments, classroom assignments, presentations, test results, projects, logs, portfolios, and direct observations (Leskes, 2002)
Direct Measure	Tangible evidence of what students have and have not learned. (ASL)
Educated Person	One who acquires and continues to expand upon the following: 1) a broad range of knowledge upon which to make value judgments; 2) the skills to locate valid information and comprehend that information; 3) the ability to analyze critically and synthesize efficiently valid information; and 4) the ability to listen carefully and to communicate effectively (CCAC)
Embedded Assessment	A means of gathering information about student learning that is built into and a natural part of the teaching-learning process. Often used for assessment purposes and/or classroom assignments that are evaluated to assign students a grade. Can assess individual student performance or aggregate the information to provide information about the course or program; can be formative or summative, quantitative or qualitative. Example: as part of a course, expecting each senior to complete a research paper that is graded for content and style, but is also assessed for advanced ability to locate and evaluate Web-based information (as part of a college-wide outcome to demonstrate information literacy). (Leskes, 2002)
Evaluation	A means to measure, compare, and judge the quality of student work, schools, or a specific educational program. (CRESST)
Focus groups	Consists of participants who might contribute useful information related to student learning, either through surveys or interviews. Examples of possible focus groups include: 1) current students; 2) graduating students; 3) alumni; 4) current and perspective employers; 5) supervisors of students in field experiences. (Suskie)
Formative Assessment	The gathering of information about student learning-during the progression of a course or program and usually repeatedly-to improve the learning of those students. Example: reading the first lab reports of a class to assess whether some or all students in the group need a lesson on how to make them succinct and informative. (Leskes, 2002)
General Education Learning Goals	Support the definition of an educated person by uniting student learning experiences across all programs, courses, and services at CCAC. General Education Learning Goals include essential knowledge and skills that help students to adapt to and to participate in global, cultural, social, political, economic, personal, and technological change. The Learning Goals support students in achieving: successful pursuits in higher education successful career, and life-long learning.

	Upon graduation with an Associate's Degree, a CCAC student will acquire a level of proficiency comparable with the first two years of a baccalaureate degree in the following six (6) General Education areas: • Communication • Technological Competency • Information Literacy • Critical Thinking and Problem Solving • Quantitative and Scientific Reasoning • Culture and Society
Goals	Are clearly articulated statements of what the Community College of Allegheny County expects its students to learn. (CCAC)
Holistic Scoring	Evaluating student work in which the score is based on an overall impression of student performance rather than multiple dimensions of performance (CRESST)
Indicator	A specific description of an outcome in terms of observable and assessable behaviors. It specifies what person who has the qualities articulated in an outcome knows or can do (adapted from BMCC)
Indirect Assessment	Acquiring evidence about how student feel about learning and their learning environment rather than actual demonstrations of outcome achievement. Examples include: surveys, questionnaires, interviews, focus groups, and reflective essays. (Doug Eder)
Indirect Measure	Reveals students are learning but evidence of what students have learned is less clear. (ASL)
Information Literacy	Retrieve, analyze, synthesize, organize, and evaluate information through technological and traditional means. (CCAC)
Institutional Assessment	The on-going process of systematically measuring achievement of the Enduring Goals established by the College. Results are utilized in the annual planning and resource allocation cycle to improve institutional effectiveness. (IAPC)
Learning Outcomes (ACLS)	Learning outcomes describe the learning mastered in behavioral terms at specific levels; in other words, what the learner will be able to do.
Norm Referenced Assessment	An assessment where student performance is compared to a larger group, usually a national sample representing a wide and diverse cross-section of students. (CRESST)
Objectives (Program)	Detailed aspects of the program that are accomplished by the successful completion of the course outcomes. (CCAC). Refers to specific tasks needed to accomplish the goals of the program (Suskie, p. 74)
Opportunity to Learn	To expose students to an environment that will enable them to achieve high standards. It is what takes place in the classrooms that enables students to acquire the knowledge and skills that are expected. (CRESST)
Outcomes (Course)	Learning outcomes that are observable, measurable and assessable; statements of the end products of student learning including knowledge, skills, competencies and attitudes. (CCAC) Course outcomes are the knowledge, skills, attitudes and habits of mind that students take with them from a particular course (Suskie, p. 75)
Performance Standards/Criteria	Explicit definitions of what students must do to demonstrate proficiency at a specific level on the **content standards**. For example, the performance level "exceptional achievement" on a **dimension** "communication of ideas" is reached when the student *examines the problem from several different positions and provides adequate evidence to support each po*sition. CRESST (http://cresst96.cse.ucla.edu/CRESST/pages/glossary.htm)
Portfolio	A systematic and organized collection of a student's work that exhibits to

	others the direct evidence of a student's efforts, achievements, and progress over a period of time. It should include representative work, providing a documentation of the learner's performance and a basis for evaluation of the student's progress. Portfolios may include a variety of demonstrations of learning and have been gathered in the form of a physical collection of materials, videos, CD-ROMs, reflective journals, etc. (http://www.newhorizons.org/strategies/assess/terminology.htm)
Portfolio Assessment	A portfolio becomes an assessment when: 1) the assessment purpose is clearly defined; 2) there are specific criteria for determining what is put in the portfolio by whom and when; 3) there are defined criteria for assessing either the collection or individual pieces. These criteria are then used to make judgments about performance. (CRESST)
Primary Trait Analysis	Involves analyzing assignments in order to identify factors or traits that are to count in the grading of an assignment and to create a scoring rubric that the teacher can use in grading and students can use in fulfilling the assignment (Barbara E. Walvoord and Virginia Johnson Anderson)
Program Assessment	Helps determine whether students can integrate learning from individual courses into a coherent whole. It is interested in the cumulative effects of the education process (Palomba and Banta). Whereas classroom assessment focuses on gauging learning for individual students, program assessment gauges the learning of a group of students. The outcomes information in program assessment is used to improve courses, programs, and services. (ASL)
Program Objectives	See: Objectives (Program)
Qualitative Assessment	Uses flexible, naturalistic methods and are usually analyzed by looking for recurring patterns and themes. Examples include: reflective writing, notes from focus groups, interviews, and observations, and online discussion threads. (Linda Suskie)
Quantitative Assessment	Uses structured, predetermined response options that can be summarized into meaningful numbers and analyzed statistical. Examples include: test scores, rubric scores, and survey ratings (Linda Suskie)
Quantitative and Scientific Reasoning	Apply appropriate mathematical and/or scientific concepts and theories in order to interpret data and solve problems based on verifiable evidence. (CCAC)
Reliability	The degree to which the results of an assessment are dependable and consistently measure particular student knowledge and/or skills. (CRESST)
Rubrics	Specific sets of criteria that clearly define for both student and teacher what a range of acceptable and unacceptable performance looks like. Criteria define descriptors of ability at each level of performance and assign values to each level. Levels referred to are proficiency levels which describe a continuum from excellent to unacceptable product. (General Education Assessment Resource Center Glossary, Borough of Manhattan Community College)
Standardization	A consistent set of procedures for designing, administering, and scoring an assessment. The purpose is to assure that all students are assessed under the same conditions so that their scores have the same meaning and are not influenced by differing conditions. (CRESST)
Standards	The broadest of a family of terms referring to statements of expectations for student learning, including content standards, performance standards, and benchmarks. (CRESST)
Student Artifacts	A collection of papers, projects, documents, etc., which represent your knowledge, competency, understanding, and achievement of identified goals and learning incomes.
Student Self Reflection	Student ratings of their knowledge, skills and attitudes; this can provide useful indirect evidence of student learning and also helps students develop metacognitive skills (Suskie, p. 139)
Summative Assessment	Evaluation at the conclusion of a unit or units of instruction or an activity or

	plan to determine or judge student skills and knowledge or effectiveness of a plan or activity. The gathering of information at the conclusion of a course When used for improvement, impacts the next cohort of students taking the course or program. Example: examining student final exams in a course to see if certain specific areas of the curriculum were understood less well than others (Leskes, 2002)
Technological Competency	Use digital technology and other discipline-specific technological tools in order to access and communicate information needed to complete tasks. (CCAC)
Test Blueprint	A list of learning goals that students are to demonstrate on a test; it is specially important for: 1) focusing on learning goals which instructors think are most important; 2) gives appropriate emphasis to thinking skills; 3) provides documentation that students have achieved major learning goals (Suskie, p. 202-203)
Triangulation	A process of combining methodologies to strengthen the reliability of a design approach; when applied to alternative assessment, triangulation refers to the collection and comparison of data or information from three different sources or perspectives. (http://sabes.org/assessment/glossary.htm)
Validity	The extent to which an assessment measures what it is supposed to measure and the extent to which inferences and actions made on the basis of test scores are appropriate and accurate. (CRESST)
Value Added	The increase in learning that occurs during a course, program, or undergraduate education. Can either focus on the individual student (how much better a student can write, for example, at the end than at the beginning) or on a cohort of students (whether senior papers demonstrate more sophisticated writing skills-in the aggregate-than freshmen papers). Requires a baseline measurement for comparison. (Leskes, 2002)

MS:mz:07-18-06; Rev. -07-20-06; 08-04-06;DM 10/07; MKQ 08/08; MKQ 08/10