

Stark State College of Technology



Handbook of Assessment

Rev. Spring 2010

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Introduction to Assessment

The intent of this handbook is to serve both as a guide and a summary of assessment processes. It contains a variety of resources and tools to assist members of the college community in developing assessment of student learning in curricular and co-curricular areas.

This handbook is to be a living document, evolving and changing as the assessment processes of the college evolve and change, with the intent that it be updated annually.

Assessment Basics

Frequently Asked Questions (FAQ) About Assessment

The following section attempts to provide answers to specific questions as a means to further understanding of the whole process.

Q: What is assessment?

- A. Assessment is the ongoing process of understanding, improving, and documenting student learning.

Q: Will assessment results be used to evaluate faculty performance?

- A. Because student learning encompasses far more than learning in a course or program, assessment results should not be tied to performance review. In order for an assessment system to be successful, all members of the college community should be aware, participate, and own essential components of the system. Assessment results are used to improve student learning, not to evaluate any individual's job performance.

Q: If any of the following statements apply, isn't it correct to say that students are learning? "Our college enrollment has increased, therefore, students learn here." "My particular program is working well, students have jobs, therefore, our students are learning." "We don't need to bother with assessment."

- A. Assessment of student learning seeks to improve the quality of educational curricular and co-curricular programs by gathering information designed to facilitate the improvement of student learning. Educators provide evidence/data to substantiate the answers to these questions:
 - a. What do we want our students to know and do?
 - b. How will we know what our students have learned?
 - c. How can we continually improve student's learning?

Even if a program or department is recognized for its quality, there is always room for quality enhancement.

Q: Why do we do assessment? How will assessment help improve learning?

- A. We do assessment to improve student learning. To *do* assessment for the goal of *doing assessment* and writing a report would be a waste of time. There is considerable evidence that assessment drives student learning and curriculum. Most importantly, use of assessment relates to the students what the College considers to be important and makes clear expectations for successful learning. Assessment is merely a tool; however, it is a tool by which we can communicate with our students about learning. Assessment does not accomplish learning, but it provides information to the instructor who may use it to improve learning.

Q: How does assessment help faculty?

- A. It provides the teacher with useful information about the students, including their qualities as learners and their readiness for learning. Ongoing assessment informs the teacher about the pace and progress of student learning in the classroom.

Q: How do grades and grading practices fit into assessment?

- A. Grading can have several uses. As part of an assessment technique, grades can provide quantifiable and quickly understood feedback for student performance. As part of summative evaluation, grades are often a necessary element in certifying student performance measured against course outcomes. In general, grades are most effective in confirming to students what they have already discovered about their learning and achievement through an ongoing process of meaningful academic assessment. Outcomes assessment expands the scope of inquiry from the individual student (who will continue to be individually assessed in courses) to a program level. Therefore, it is the aggregate performance of students as a group (even if in a sample) that provides information on whether the program is achieving its advertised ends.

Q: Does student assessment affect faculty evaluation?

- A. No. At the classroom level, assessment is informed by the expertise and professional judgment of the teacher. At the course and program level, assessment data are collected and analyzed in the aggregate, and not by individual classes or teachers. The emphasis on student learning means that assessment is concerned about the content of a course or program, not the delivery method. Faculty members in an academic department or program, interpreting the results of an assessment measure, might collectively decide to give more attention to a certain skill, competency, or knowledge area. They might even recommend changes in pedagogy; however, they cannot compel the behavior of a given instructor.

Q. Why doesn't someone just do this and produce a report?

- A. First of all, that would be too much like grading. The goal of assessment is to produce results that will enable professional instructors to improve student learning; it is not a report on past performance. Only the faculty who guide the learning process can identify the intended outcomes of that process and what it is they expect to happen to/for the student. It is the faculty who teach in the program who can decide what the results mean and suggest improvements.

Q. How can you assess attitudes and understandings, which are simply not quantifiable?

- A. It seems a common misunderstanding that assessment requires that everything be reduced to statistical measures. The thrust of assessment is objective results such that anyone will know that the learning goals are being met, but this need not be quantifiable. If the faculty identify as an important result that which is not quantifiable, the process simply asks them to specify some objective means to demonstrate that the results are happening as intended.

Q. Do we all have to use standardized tests?

- A. No, we do not have to use standardized tests. Tests from outside organizations have the edge in objectivity but they are only one of many means of assessment. More importantly, they may not be valid in the judgment of the faculty who are identifying outcomes and means, and it is their judgment that counts. It may well be that an exam created by the department would be a better tool.

Q. What is an outcomes-based course?

A. An outcomes-based course is supported with multiple learning opportunities for the student to achieve the learning outcomes.

Q. Why is the Higher Learning Commission making us do assessment?

A. Right now, higher education is concerned with two national issues: the learning college and accountability. Assessment, actually, is not a new concept at all and addresses both of these issues. Most teachers have been engaged in some types of assessment throughout their teaching careers and have found it to be a tool for understanding what their students are learning. Assessment also acts as a means of documenting that the college, its programs, and its faculty members are accomplishing their stated intentions.

Q. Are adjunct faculty involved?

A. Yes, adjunct faculty members are involved in the process! All faculty members--full and part-time--are involved in student learning. We have many creative and dedicated adjunct faculty members at the College who would enjoy being part of the assessment process.

Q. Which and how many faculty members of a given program should participate in the assessment process?

A. All faculty members, both full-time and adjunct, should participate in assessment. Everyone has a stake in the success of their respective program or discipline.

Q. What is a rubric?

A. Rubrics are instruments that attempt to make subjective measurements as objective, clear, consistent, and as defensible as possible by explicitly defining the criteria on which performance or achievement should be judged. They are devices for organizing and interpreting data gathered from observations or learning artifacts (papers, products, etc.) of student learning. Rubrics are designed to allow for the differentiation between levels of achievement, or development, by communicating detailed information about what constitutes excellence.

What is Assessment?

Assessment is a cyclic process used to identify areas for improvement of student learning and to facilitate and validate institutional effectiveness. The Higher Learning

Commission offers the following formal definition: Assessment is the systematic collection, examination, and interpretation of qualitative and quantitative data about student learning, and the use of that information to document and improve student learning. Assessment is not an administrative activity, a means of punishment, an intrusion into a faculty member’s classrooms, or an infringement of academic freedom.

The following chart attempts to clarify the difference between evaluating student performance and assessing student learning outcomes (an outcome is defined as knowledge, abilities, or attitudes that students should have as a result of instruction; learning outcomes have three distinguishing characteristics: the specified action by the learner must be observable, measurable, and done by the learner).

Evaluating Student Performance	Assessment
Purpose: primarily summative	Purpose: primarily formative.
Focus on individual performance	Focus on group performance
Helps individuals know how they performed	Helps instructors/dept/school know how they and students performed
Results in a grade for the activity or course	Results in a plan for improvement
May/may not be used for improvement of instruction/ learning	Always used for improvement of instruction (Source: Paradise Valley Community College Assessment Handbook)

In particular, course grades are not designed to provide the same insight into improving student learning that a course assessment does.

- Grades are intended to provide a more global evaluation and, therefore, do not provide detailed information about which course outcomes students are mastering and which are troubling.
- Because course grades are summative in nature, they don’t stimulate faculty discussions about how to improve student learning of particular course outcomes.
- Grades can encompass more than a mastery of course content; they may include participation, attendance, and/or bonus points.
- Grading standards, sometimes even within departments, vary widely among different instructors.
- Grading standards (easy tests, group work, and extra-credit bonuses) sometimes present a misleading indicator of student mastery of course outcomes.

Course assessment provides the opportunity for faculty to discuss course content and, based on the results, consider how they can improve student learning in the course. Benefits of establishing common course outcomes and assessment include:

- More consistency in multi-section courses.
- More opportunities for collaboration among faculty members.
- Increased contact with adjunct faculty.
- Exploration of learning strategies and teaching methods to enhance student success.
- Experimentation with alternative assessments to evaluate student outcomes.
- Support of requests for funding based on assessment evidence.

In addition, when course outcomes are tied to program and/or institution-wide outcomes, assessment of course outcomes can serve as a way to assess curricular, program, and institution-wide outcomes, identify best instructional practices, improve communication of instructional intent, increase student awareness of learning, and improve advising. When direct measures of student success in programs and the institution are available, both programs and the institution can more easily market and seek funding based on the success of students. (Source: *Hutchinson Community College*)

Components of Effective Assessment

1. The assessment of student learning begins with educational values.

Assessment is not an end in itself but a vehicle for educational improvement. Its effective practice, then, begins with and enacts a vision of the kinds of learning we most value for students and strive to help them achieve. Educational values should drive not only what we choose to assess but also how we do so. Where questions about educational mission and values are skipped over, assessment threatens to be an exercise in measuring what's easy, rather than a process of improving what we really care about.

2. Assessment is most effective when it reflects an understanding of learning as multi-dimensional, integrated, and revealed in performance over time.

Learning is a complex process. It entails not only what students know but what they can do with what they know; it involves not only knowledge and abilities but values, attitudes, and habits of mind that affect both academic success and performance beyond the classroom. Assessment should reflect these understandings by employing a diverse array of methods, including those that call for actual performance, using them over time so as to reveal change, growth, and increasing degrees of integration. Such an approach aims for a more complete and accurate picture of learning, and therefore firmer bases for improving our students' educational experience.

3. Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes.

Assessment is a goal-oriented process. It entails comparing educational performance with educational purposes and expectations. These are derived from the institution's mission, from faculty intentions in program and course design, and from knowledge of students' own goals. Where program purposes lack specificity or agreement, assessment as a process pushes a campus toward clarity about where to aim and what standards to apply; assessment also prompts attention to where and how program goals will be taught and learned. Clear, shared, implementable goals are the cornerstone for assessment that is focused and useful.

4. Assessment requires attention to outcomes but also, and equally, to the experiences that lead to those outcomes.

Information about outcomes is of high importance; where students "end up" matters greatly. But to improve outcomes, we need to know about student experience along the way. We need to know about the curricula, teaching, and the kind of student effort that led to particular outcomes. Assessment can help us understand which students learn best under what conditions; with such knowledge comes the capacity to improve the whole of their learning.

5. Assessment works best when it is ongoing, not episodic.

Assessment is a process whose power is cumulative. Though isolated, "one-shot" assessment can be better than none, improvement over time is best fostered when assessment entails a linked series of cohorts of students; it may mean collecting the same examples of student performance or using the same instrument semester after semester. The point is to monitor progress toward intended goals in a spirit of continuous improvement. Along the way, the assessment process itself should be evaluated and refined in light of emerging insights.

6. Assessment fosters wider improvement when representatives from across the educational community are involved.

Student learning is a campus-wide responsibility, and assessment is a way of enacting that responsibility. Thus, while assessment efforts may start small, the aim over time is to involve people from across the educational community. Faculty members play an especially important role, but assessment questions can't be fully addressed without participation by student-affairs educators, librarians, administrators, and students. Assessment may also involve individuals from beyond the campus (alumni/ae, trustees, employers) whose experience can enrich the sense of appropriate aims and standards for learning. Thus understood, assessment is not a task for small groups of experts but a collaborative activity; its aim is wider, better-informed attention to student learning by all parties with a stake in its improvement.

7. Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.

Assessment recognizes the value of information in the process of improvement. But to be useful, information must be connected to issues or questions that people really care about. This implies assessment approaches that produce evidence that relevant parties will find credible, suggestive, and applicable to decisions that need to be made. It means thinking in advance about how the information will be used, and by whom. The point of assessment is not to gather data and return “results”; it is a process that starts with the questions of decision-makers, that involves them in the gathering and interpreting of data, and that informs and helps guide continuous improvement.

8. Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change.

Assessment alone changes little. Its greatest contribution comes on campuses where the quality of teaching and learning is visibly valued and worked at. On such campuses, the push to improve educational performance is a visible and primary goal of leadership; improving the quality of undergraduate education is central to the institution’s planning, budgeting, and personnel decisions. On such campuses, information about learning outcomes is seen as an integral part of decision making, and avidly sought.

9. Through assessment, educators meet responsibilities to students and to the public.

There is a compelling public stake in education. As educators, we have a responsibility to the public that supports or depends on us to provide information about the ways in which our students meet goals and expectations. But that responsibility goes beyond the reporting of such information; our deeper obligation – to ourselves, our students, and society – is to improve. Those to whom educators are accountable have a corresponding obligation to support such attempts at improvement*.

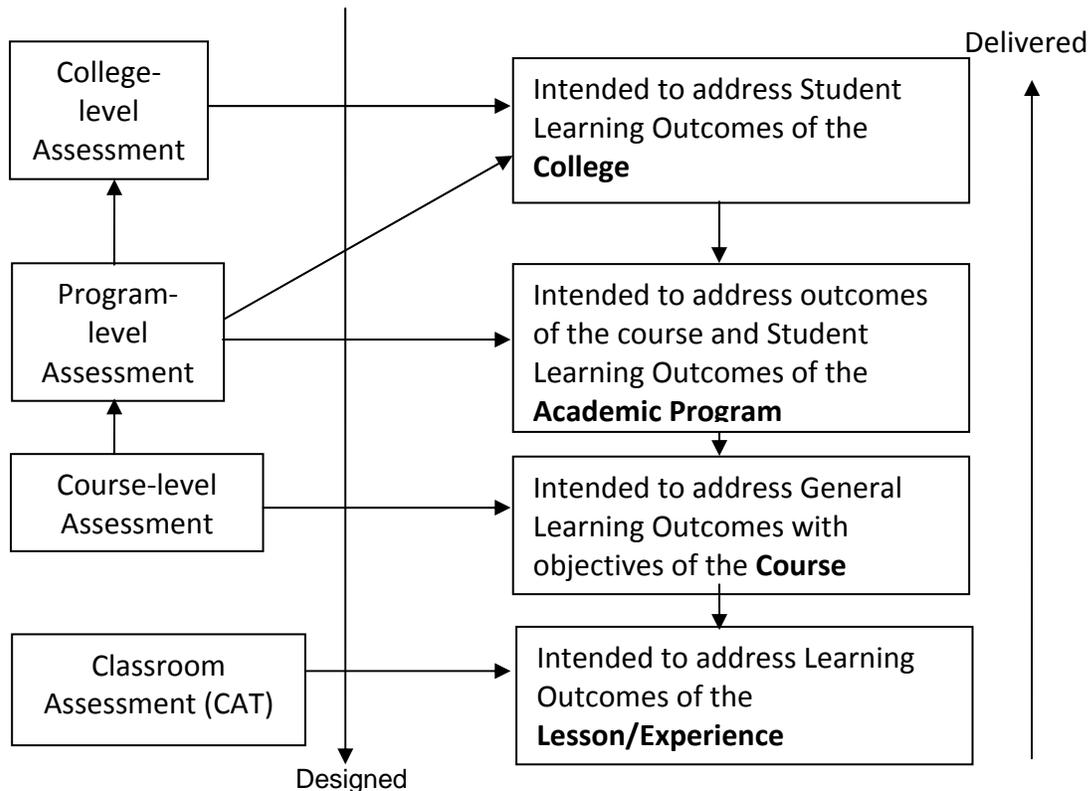
*(These principles were developed under the auspices of the AAHE Assessment Forum with support from the Fund for the Improvement of Postsecondary Education with additional support for publication and dissemination from the Exxon Education Foundation. Copies may be made without restriction. The authors are Alexander W. Astin, Trudy W. Banta, K. Patricia Cross, Elaine El-Khawas, Peter T. Ewell, Pat Hutchings, Theodore J. Marchese, Kay M. McClenney, Marcia Mentkowski, Margaret A. Miller, E. Thomas Moran, and Barbara D. Wright).

Simply stated, an effective assessment system is designed to provide answers to the following questions:

- 1. What are you trying to do?**
- 2. How well are you doing it?**
- 3. Using the answers to the first two questions, how can you improve what you are doing?**
- 4. What and how does a program contribute to the development and growth of its students?**
- 5. How can student learning be improved?**

Levels of Assessment

Assessment activities occur at many levels and in many arenas and are usually under the direction of the appropriate faculty and staff. Levels of assessment begin at the college-level and flow downward to program level, course level and finally culminating with classroom-level assessment. The following figure is an illustration of the different levels of assessment and their relationship to each other.



Levels of Assessment

The overall curriculum of a postsecondary institution can be considered to consist of a number of levels: college, academic program, course, lesson/learning experience. For a quality focused institution, the curriculum is designed by concentrating on the mission, vision and goals of the institution and then insuring that the purpose of each subsequent level is aligned with the level above it. As learning outcomes are established for each subsequent level, a logical relationship develops between the learning outcomes at one level with the level above it. For academic programs, we would expect to see a connection to both the college and the academic discipline. We would also expect the specificity of the learning outcomes to increase as we move from the institutional to the classroom level. While curriculum is designed from the macro to the micro level, students experience it in the opposite direction. (See the figure above.)

Levels of Assessment

Academic assessment may occur at a variety of levels within the curriculum and is related to the level of the student learning outcomes the assessment is intended to

address. The relationship between the levels of academic assessment and student learning outcomes is depicted in the above figure.

For institutions accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools, assessment is organized at the institutional level, encompassing curricular and co-curricular activities. The information below describes how students experience assessment at Stark State College.

Classroom Assessment: All student work embedded in the course can provide evidence of classroom assessment. Examples of classroom assessment measures include quizzes, exams, papers, projects, presentations, exercises, case studies, and lab assignments. This is the level of assessment where instructor's assigned grades are typically used to provide students with feedback on their progress and success. The focus is on individual performance with the intent being to help students know how well they performed. Assessment data gathered can be used by the instructor to modify subsequent lessons and assignments within the course.

Course Assessment: This level of assessment addresses the achievements of an entire class, as in a capstone course, as well as the effectiveness of multiple-section courses. Although this level of assessment includes measures identified in classroom assessment, additional measures include capstone experiences or projects, portfolios, and common course assignments. Course assessment provides the opportunity for faculty to discuss course content; and, based on the results, faculty can consider how they can improve student learning in all sections of the course. Although instructors can use the data gathered to improve learning in their own courses, the data is also used to determine how well multiple sections of a course are achieving the desired learning outcomes or the purpose of the course in a learning sequence.

Academic Program Assessment and Review

Program outcomes describe what each academic program intends for its students to know, value, and do when they graduate from the program. At Stark State College, we developed program learning outcomes (PLOs) for each of the degree programs and identified assessment measures for each learning outcome to help us measure program assessment. The assessment measures include results of common assignments, capstone projects, portfolios, licensure exams, and certifications. The data gained from program assessment allows us to align the program design with program outcomes. The data help us determine how well the program fosters learning of the desired outcomes as well as curricular and co-curricular elements that are missing in the program. Please see your department chair to obtain a copy of the "Program Learning Outcomes and Assessment Methods" template and the "Institutional General Learning Outcomes" template for your academic program(s). Every three years each program/option/certificate will be reviewed, using the Academic Program Review electronic template, which will reflect currency and relevance of courses and programs.

In order to have a common reporting method in support of our assessment policy and procedure, the College developed course and program assessment templates. These templates must be completed for all courses and all academic programs. The assessment criteria are consistent for all departments at the college.

Department Assessment

The reporting process begins at the course level and continues at the department level. Because some departments contain more than one academic program, a summary of program assessment within the department is completed via an electronic reporting template. The summary provides an overview of assessment and addresses the plan-do-check-act cycle. The summary also links the findings of the department assessment to their division, as well as to the College's strategic plan. The department chairs forward the department summary to their respective dean.

Division Assessment

The academic deans compile the summaries from their departments into a division summary report via an electronic reporting template. The division summary addresses the plan-do-check-act cycle from a division perspective and links the findings to the Academic Affairs Division, as well as to the College's strategic plan. The deans forward their division summaries to the Provost. The summary reports from each of the deans are used to assist in developing an Academic Affairs' assessment report, which in turn is linked to the institutional assessment report and the Strategic Plan.

Institutional Assessment

General education provides students with a breadth of knowledge and capacity for lifelong learning. It stretches students' minds and broadens their experiences. General education prepares students with the skills to communicate effectively, problem solve, locate and gather information, and think critically and logically. It teaches students to understand and appreciate diversity and its interrelationships as well as community engagement and informed citizenship.

Our general education philosophy is embedded in our vision and mission and is supported by our core values. These core values serve to emphasize our commitment to our students, to learning, to shared responsibility, and to the continuous improvement of the education we offer. We work collaboratively to create a campus culture which is academically challenging and emotionally supportive.

Stark State College has identified six general learning outcomes (GLOs). These learning outcomes are considered integral to providing opportunities for lifelong learning, preparing people for successful transfer, and preparing people for competence in the

workplace. The general learning outcomes are the six primary goals and desired learning outcomes to be achieved by all Stark State College graduates.

These cross curriculum general learning outcomes are also reinforced in all degree programs. The General Learning Outcomes (GLOs) are:

EFFECTIVE COMMUNICATION (WRITTEN, ORAL, READING, AND LISTENING)

1. Organize and develop ideas effectively.
2. Present ideas in an appropriate, mechanically and grammatically correct, professional style.
3. Follow a standardized documentation format.

QUANTITATIVE LITERACY (INCLUDES COMPUTATIONAL SKILLS)

1. Determine a solution strategy and set up the problem with the pertinent information.
2. Solve the problem using the appropriate data, the mathematical operations (symbols and formulas), and the appropriate technology (such as calculators and computers) as needed.
3. Analyze and interpret the results for accuracy and reasonableness and explain the results using such tools as graphs, charts, and tables as needed.

INFORMATION LITERACY SKILLS

1. Locate, evaluate, and use effectively the needed information.
2. Manipulate current software and hardware to access and communicate information appropriately.
3. Understand copyright rules and the ethics of extracting, sharing and citing source information.

CRITICAL THINKING SKILLS

1. Understand and interpret data by analyzing and synthesizing information.
2. Challenge assumptions and draw informed and logical conclusions.
3. Test conclusions against relevant criteria and standards while considering practical and ethical implications.

GLOBAL AND DIVERSITY AWARENESS

1. Demonstrate appreciation and respect for individuals and groups and use effective interpersonal and collaboration skills.
2. Demonstrate awareness of the interdependence of factors of diversity: culture, history, sexual orientation, psychological functioning, education, economics, environment, geography, language, politics, age, gender, ethnic heritage, physical challenges, social class, social skills and religion.

CIVIC, PROFESSIONAL, AND ETHICAL RESPONSIBILITY

1. Demonstrate personal integrity and social responsibility consistent with ethics, individual rights, and civility in a democratic society.
2. Accept responsibility for and act in a manner that reflects the values of the communities and organizations.
3. Relate to others in a respectful, courteous, and professional manner.

Each of the academic programs use a course assessment template to list each of the general learning outcomes and how they are measured in each of their courses and a program assessment template to list each of the program learning outcomes and how they are measured. An institutional student learning outcomes template is completed, which requires that each of the academic programs identify the courses in which the general learning outcomes and the program learning outcomes are presented, practiced, and mastered.

The templates described in the academic program assessment section above are used to compile an institutional assessment report. The reporting process begins at the department chair level and progresses through the chain of command, culminating in an institutional assessment report. The information gained throughout the reporting process is used to improve student learning.

**SSC GENERAL LEARNING OUTCOMES (GLOs)
COURSE ASSESSMENT MATRIX**

Course Name/Number _____ Semester _____ Instructor _____ FT Adjunct

Modality: F2F Web 2 Web 3 Web 4 Campus: Main Satellite Dual Enrollment Early College

The general education component of all degrees and programs at SSC is based on six primary general learning outcomes. The faculty members at SSC through the coordination of the Academic Assessment Committee have agreed on these six outcomes and feel that every graduate at SSC should exhibit these behaviors and have achieved SSC's desired level of performance prior to their graduation and employment or matriculation to another institution.

Each course at SSC contributes to a graduate's successful performance in one or more of the general learning outcomes. The purpose of this form is to allow instructors to document how their course(s), instructional strategies/activities, and evaluation methods contribute to the general learning outcomes achievement.

General Learning Outcomes (GLOs)	I. Identify course objectives that support the GLO (from the course's approved syllabus). If any GLO was not identified for the course, mark NA. (Attach Master Syllabus)	III. Identify evaluation method(s) used to measure and evaluate student success of this outcome. * (List all methods)	IV. Report the achievement level [number of students earning a 70% or higher out of the total number of student completers (i.e., 25/50 = 50%)] (Report for each evaluation method in III.)	V. If actual percentage of completers falls below the college-wide minimum standard (70% or higher), identify course change(s) planned to improve student learning in this GLO.**
Effective Communication (written, oral, reading, listening)				
Quantitative Literacy				
Information Literacy				
Critical Thinking				
Global and Diversity Awareness				
Civic, Professional and Ethical Responsibility				

***Legend: II. Evaluation Methods (from SSC Handbook of Assessment)**

Pre- and post-testing	Capstone experiences	Oral examinations/presentations
Written products/essays	Performance in supervised internships	Portfolio assessments
Research papers/theses/dissertations	Standardized exams	Locally developed tests
Performance on licensure, certification, or professional exams	Performance-based assessments	Juried reviews and performances
Exhibitions/demonstrations	Practical exams	Surveys
Graduation rates data	Retention rates data	Transfer studies
Graduate follow-up studies	Job placement data	Quizzes
Rubrics	Answer keys	Checklist

****Legend: IV. Examples of Planned Improvements**

Revision of content of existing courses	Modification of delivery methods	Modification of learning activities
Addition or elimination of courses	Sequencing courses differently	Revise the course outcomes to include more higher-order thinking and greater intellectual rigor
Obtain more consistency in large multi-section courses	Reduce grade inflation by linking test and course grades to mastery of all outcomes	Increase contact with adjunct faculty
Explore active learning strategies and other testing methods	Explore other ways of assessing outcomes	Explore technological enhancements (labs, equipment, CD tutorial, etc.), using the assessment evidence to support a request for increased funding
Conduct a retreat or workshop for instructors	Develop a rubric for more consistent evaluation	

**SSC GENERAL LEARNING OUTCOMES (GLOs)
COURSE ASSESSMENT TEMPLATE**

Course Name/Number Sociology Semester Spring 2010 Instructor Dr. Staff FT Adjunct

Modality: F2F Web 2 Web 3 Web 4 Campus: Main Satellite Dual Enrollment Early College
Time: Day Evening Weekend ***ALL course sections should be assessed. However, for those courses that have multiple offerings,

please strive to assess a representative sample (i.e., a minimum of one per category), including both full-time and adjunct faculty, each type of modality and campus location and times the course is offered.

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Effective Communication (written, oral, reading, listening)	Correctly use basic sociological terminology to intelligently discuss, analyze, and critical major social issues.	Exam/answer key	20/30 = 67%	Explore active learning strategies and other testing methods
Quantitative Literacy	NA	NA	NA	NA

Last date of completion/revision:

Information Literacy	Describe how the group influences or is influenced by culture, society, social institutions and social change.	Research Paper Exam/Answer key	25/30 = 83% 22/30 = 73%	
Critical Thinking	Demonstrate rational thinking through application of social scientific principles and methods.	Exercises Exam/Answer key	20/30 = 67% 26/30 = 87%	Modification of learning activities
Global and Diversity Awareness	Demonstrate the development of an historical perspective and understanding of the development of different types of societies, along with an increased sensitivity toward the varieties of cultures/society.	Video assignments Exam/Answer key	21/30 = 70% 28/30 = 93%	
Civic, Professional and Ethical Responsibility	Demonstrate increased awareness of social issues and their impact on society.	Class presentation Exam/Answer key	19/30 = 63% 30/30 = 100%	Develop a rubric for more consistent evaluation Although goal was met, increase contact with faculty to ensure there isn't grade inflation

*Legend: II. Evaluation Methods (from SSC Handbook of Assessment)		
Pre- and post-testing	Capstone experiences	Oral examinations/presentations
Written products/essays	Performance in supervised internships	Portfolio assessments
Research papers/theses/dissertations	Standardized exams	Locally developed tests
Performance on licensure, certification, or professional exams	Performance-based assessments	Juried reviews and performances
Exhibitions/demonstrations	Practical exams	Surveys
Graduation rates data	Retention rates data	Transfer studies
Graduate follow-up studies	Job placement data	Quizzes
Rubrics	Answer keys	Checklist

**Legend: IV. Examples of Planned Improvements		
Revision of content of existing courses	Modification of delivery methods	Modification of learning activities
Addition or elimination of courses	Sequencing courses differently	Revise the course outcomes to include more higher-order thinking and greater intellectual rigor
Obtain more consistency in large multi-section courses	Reduce grade inflation by linking test and course grades to mastery of all outcomes	Increase contact with adjunct faculty
Explore active learning strategies and other testing methods	Explore other ways of assessing outcomes	Explore technological enhancements (labs, equipment, CD tutorial, etc.), using the assessment evidence to support a request for increased funding
Conduct a retreat or workshop for instructors	Develop a rubric for more consistent evaluation	

SSC PROGRAM LEARNING OUTCOMES (PLOs) ASSESSMENT

Program Name _____ Program Chair/Coordinator _____ Division _____

Planning		Analysis	
Program Learning Outcomes (PLOs) Upon completion of the program, the student should be able to:	I. Identify all assessment measures/instruments that address this outcome.	II. Report the achievement level [number of students earning a 70% or higher out of the total number of student completers (i.e., 25/50 = 50%)] (Report for each evaluation method in III.)	III. If actual percentage of completers falls below the college-wide minimum standard (70% or higher), identify program change(s) planned to improve student learning in this program/option/certificate.

Assessment Notes:

SSC PROGRAM LEARNING OUTCOMES (PLOs) ASSESSMENT

DRAFT EXAMPLE

Program Name Administrative Office Professional, 2120 Program Chair/Coordinator Cindy Close, Chair Division Bus. And Entrepreneurial Studies

Planning		Analysis	
Program Learning Outcomes (PLOs) Upon completion of the program, the student should be able to:	I. Identify all assessment measures/instruments that address this outcome.	II. Report the achievement level [number of students earning a 70% or higher out of the total number of student completers (i.e., 25/50 = 50%)] (Report for each evaluation method in III.)	III. If actual percentage of completers falls below the college-wide minimum standard (70% or higher), identify program change(s) planned to improve student learning in this program/option/certificate.
Students will be able to use resources, make decisions and exhibit proficiency in the use of office procedures and information systems used in automated office environments.	Scores of 70% on the Office Proficiency Assessment & Certification (OPAC) automated test package.	30/50 = 60% (overall % for the entire test)	Revision of content in technical courses, especially in those courses where the achievement level in that skill was below 70%
Students will be able to acquire, organize and evaluate information for making decisions and solving problems in business environments.	Performance evaluations completed by practicum supervisors. Ratings of 2, 3, 4 on a scale of 0-4.	50/50 = 100%	
Students will be able to demonstrate employability skills and professionalism through sound work habits, ethics and responsibility, and work in individual, team and group settings.	Performance evaluations completed by practicum supervisors. Ratings of 2, 3, 4 on a scale of 0-4.	50/50 = 100%	

Assessment Notes:

The Administration Office Technology Department utilizes the Office Proficiency Assessment & Certification (OPAC) automated testing package for the assessment process. The students registered in the Administrative Information Practicum (OAD 232) classes are the test group. The standards of 70% on the various skill tests in the test package was adopted by the department and are representative of the certification standards specified by the International Association of Administrative Professionals (IAAP).

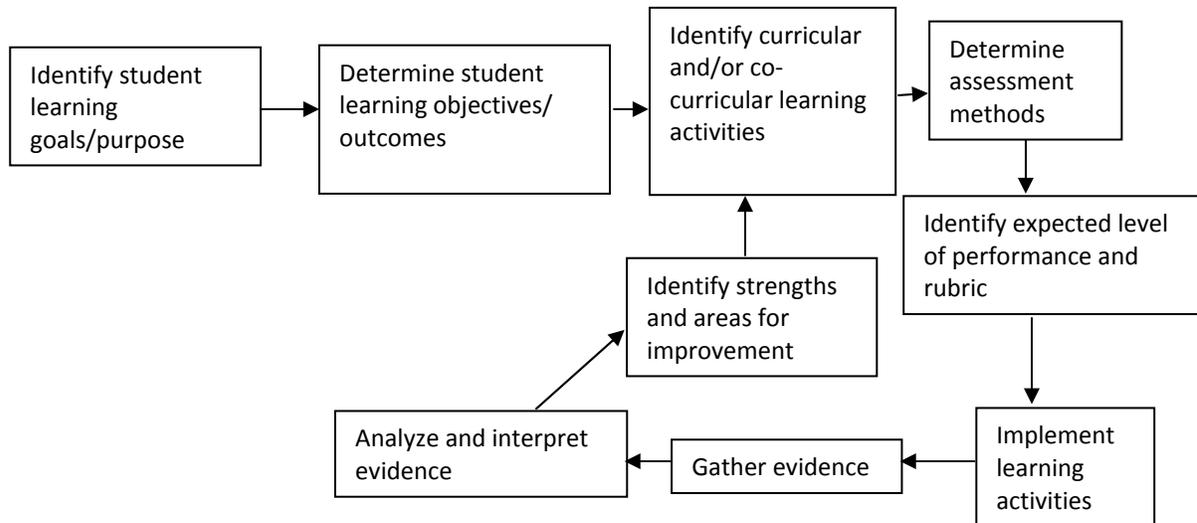
Practicum Performance Rating Definitions:

- 4 Outstanding – Performance exceeds requirements
- 3 Favorable – Performs all aspects of the job in a completely acceptable manner
- 2 Satisfactory - Meets the requirement

- 1 Improvement Needed - Meets some job requirements, but needs improvement in some areas
- 0 Unsatisfactory – Performance below minimum acceptable standards

Academic Assessment Process

Although levels of assessment are related to the different levels of curriculum, the assessment process is consistent across all these levels. The figure below provides an illustration of that process.



While assessment results could indicate improvement is needed in the learning activity, it could also indicate that improvements are necessary in the goals, outcomes, and/or assessment methods used to gather the necessary evidence. These changes are implemented and the assessment process begins again.

In establishing an assessment plan, it is also necessary to establish an acceptable timeline for the gathering of evidence. A timeline of assessment has been established, which begins with a minimum of two courses being assessed each semester. The summary report is completed on an annual basis. The academic program review is completed every three years. See below for SSC's timeline.

SSCT Academic Assessment Process Timeline

Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013
Complete Systems Portfolio.	Systems Portfolio due May 2010	Systems Appraisal report returned	Work on Feedback report.	Submit Feedback report.	Implement Appraisal Feedback.	Quality checkup visit	Quality checkup visit	Reaffirmation of Accreditation
Begin group training with dept chairs and faculty. (Individual training and support will also begin.)	Begin course assessment (minimum 2 courses)	Course assessment continues (minimum 2 courses)	Course assessment continues (minimum 2 courses)	Course assessment continues (minimum 2 courses)	Course assessment continues (minimum 2 courses)	Course assessment continues (minimum 2 courses)	Course assessment continues (minimum 2 courses)	Academic Program Review begins.
	Academic programs complete summary report (dept chair to dean to Provost to Strategic Planning); this will be completed on an annual basis each summer.	Course intervention/Improvement introduced (Spring 2010 courses)	Assessment of improvements in courses from Spring 2010. Annual summary report completed.	Assessment of improvements in courses from Fall 2010	Assessment of improvements in courses from Spring 2011. Annual summary report completed.	Assessment of improvements in courses from Fall 2011	Assessment of improvements in courses from Spring 2012. Annual summary report completed.	Assessment of improvements in courses from Fall 2012
			Course intervention/Improvement introduced (Fall 2010 courses)	Course intervention/Improvement introduced (Spring 2011 courses)	Course intervention/Improvement introduced (Fall 2011 courses)	Course intervention/Improvement introduced (Spring 2012 courses)	Course intervention/Improvement introduced (Fall 2012 courses)	Course intervention/Improvement introduced (Spring 2013 courses)

Evaluation

<i>Outcome</i>	<i>Strategies</i>	<i>Indicators of Success</i>
Establish clearly stated, meaningful, and measurable student learning outcomes at the institution-wide level.	Identify general learning outcomes	All master syllabi include general learning outcomes
Establish clearly stated, meaningful, and measurable student learning outcomes at the course level.	Identify learning outcomes for each course.	All syllabi include course learning outcomes.
Establish clearly stated, meaningful and measurable student learning outcomes at the program level.	Identify program learning outcomes.	All program reports include program learning outcomes.
Develop a shared commitment to assessment across the entire institution.	A. Tie outcomes in program courses to program learning outcomes. B. Tie outcomes in general education courses to general learning outcomes. C. Tie outcomes in program courses to general learning outcomes.	1. All programs/areas submit an assessment plan linking program learning outcomes to course outcomes. 2. Develop assessment plan linking general learning outcomes to course outcomes.
Determine ways to assess and evaluate student learning.	Identify assessment and evaluation instruments for all course-level outcomes.	All courses include common assessment for learning outcomes on syllabi.
Make information on student learning outcomes available to the SSC community via the web.	Develop reporting template for course outcomes assessment and program outcomes assessment.	<ol style="list-style-type: none"> 1. All faculty members submit outcome reports for courses. 2. All chairs submit summary a report for their department. 3. Each dean submits a summary report for the division. 4. The Provost provides an institution-wide summary report and makes it available on the web.

Designing an Assessment Program Plan

This chapter will serve as a tutorial providing guidelines and suggestions for developing a workable plan. Designing an assessment plan that works for all levels of assessment and all aspects of the college is not an easy task. Therefore, an assessment plan should be tailored to match the learning outcomes of the institution and its programs.

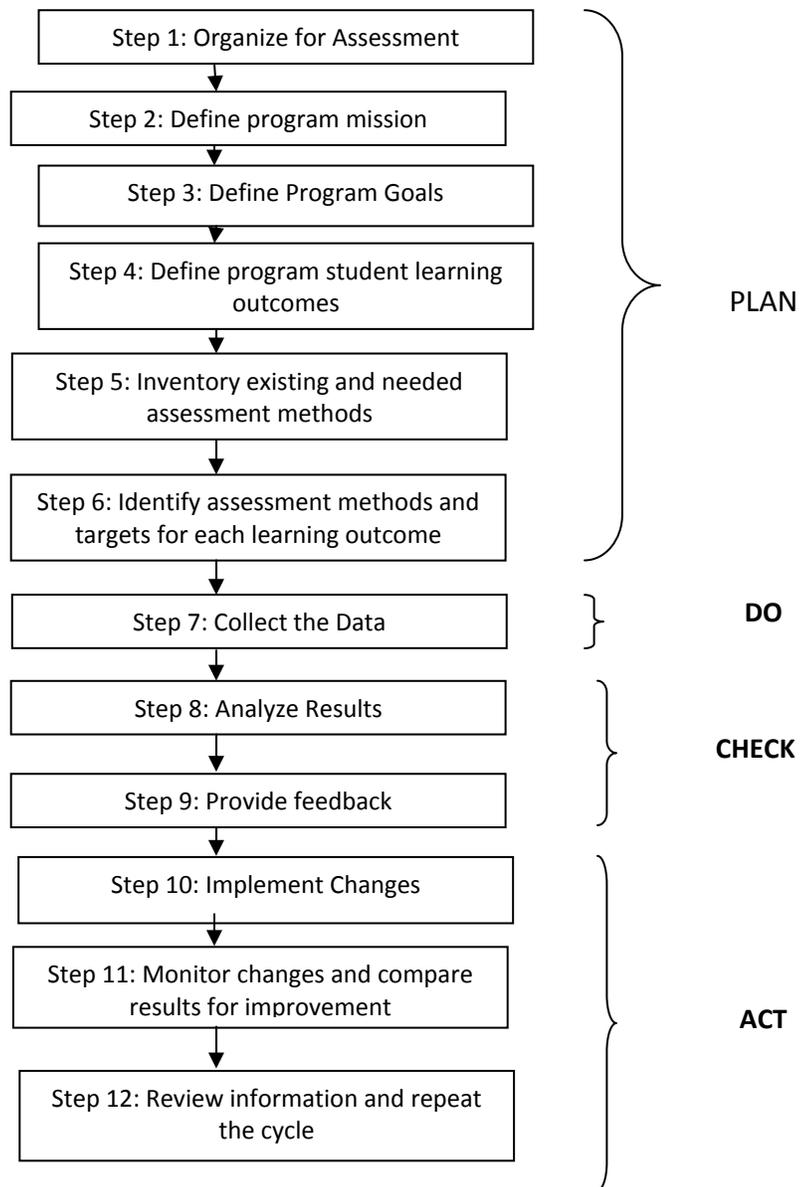
First, an assessment plan should be manageable, meaningful, and sustainable; it should flow from the mission statement of the college. Second, a plan should be perceived as a continuous improvement process; a cycle of plan-do-check-act fitting program needs.

The assessment plan for Stark State College of Technology is a formal plan reviewed by the internal college community and multiple external stakeholders, least among them is the Higher Learning Commission and the Ohio Board of Regents.

Plan—Organizing for Assessment

In designing a program plan, there are five fundamental questions which can act as guides:

1. What are we trying to do?
2. How well are we doing it?
3. Using the answers to the first two questions, how can we improve in what we are doing?
4. What and how does a program contribute to the development and growth of its students?
5. How can student learning be improved?



The flowchart above illustrates the Plan-Do-Check-Act cycle.

In developing an assessment plan, one of the frequently asked questions is “Where do we begin our assessment?” The best place to start is to determine where you are today and where you want to be tomorrow. Are the key stakeholders in place? It is also wise for a program or department to determine the most immediate need—is there an upcoming accreditation or

state review forthcoming? If not, then begin by examining the program or department mission, goals or objectives. What are the intended outcomes? What is the best method to determine if these outcomes are being achieved?

Next, examine the current assessment practices of the program or department. What additional methods are needed? It is worthy to note here that relying upon one measure could result in misleading perceptions. Multiple measures allow you to examine what students know, what they can do with what they know, and what they think about the whole process. And although students are the obvious source for information, data from surveys of faculty, alumni, and employers of program graduates can be combined with student input to provide a 360-degree view of a program or department.

In addition to assessment methods, what will be the standards or targets for each learning outcome within what time frame (e.g. 10% improvement in student performance within two years)? Then, determine what proportion of students would be desired to meet this outcome.

After data have been collected, it is important to analyze these data. At this point in the continuous improvement cycle, faculty will need to review the results and determine what actions are necessary to make improvements. Some changes can be made immediately while others will require change to take place over a period of time, involving multiple steps.

Many programs and departments develop excellent plans, but fail to implement them. It is vital to determine how the data will be collected, who will collect the data, and where and how the data will be securely archived.

The implementation of changes becomes the starting point for the next cycle of assessment.

Developing Learning Outcomes

Course outcomes need to be written as assessable outcomes. Those outcomes are based on what students do rather than what the instructor does. Realistically, the course outcomes should be limited to the three to nine things that all students completing the course successfully should be able to do (performance), know (cognitive), or feel (affective). Outcomes that students are not expected to master during the course or that they are expected to have mastered before coming into the course should not be listed as course outcomes. Additionally, in developing student outcomes, many programs and departments use the SMART model.

S=Specific

Enough detail is provided so that there is no question in students' minds as to what they need to do in order to be successful.

M=Measurable

Tangible evidence exists at the end of the course to evaluate students' success in reaching the outcome.

A=Attainable and active

The behavior expected of the student should be observable. "To understand," "to be aware of," "to feel" are not observable, and, therefore, are not acceptable in course outcomes. The verbs used in writing course outcomes should indicate student action.

R=Results-oriented and relevant

Extraneous or pet topics should not be part of course outcomes. The course assessment team should keep outcomes to those everyone completing the course successfully should be able to do and know.

T=Time-bound

Even though faculty may have many goals for their students, the goals expressed in the course outcomes should only be those that can be attained within the time-frame of the course.

An example of course outcomes for General Psychology that follow the SMART model might be the following:

Students who successfully complete General Psychology will:

1. Outline the scientific foundations of psychology.
2. Identify states of consciousness.
3. Explain how people learn.
4. List basic human motivations.
5. Describe how emotions, stress, and health influence human behavior.
6. Define personality.
7. Compare and contrast common psychological disorders.
8. Detail how society influences the psychology of the individual.

Writing outcomes according to the SMART model requires using active verbs as does writing outcomes that address the array of Bloom's taxonomy.

Bloom's Classification of Cognitive Skills

Bloom’s classification of cognitive skills is widely used in instruction planning. The six levels are arranged by level of complexity. Use of this or other classification systems is recommended to safeguard against a tendency to focus on content coverage and to ignore what the students should learn to do with content.

Category	Definition	Related Behaviors
Knowledge	recalling or remembering something without necessarily understanding, using, or changing it	define, describe, identify, label, list, match, memorize, point to, recall, select, state
Comprehension	understanding something that has been communicated without necessarily relating it to anything else	alter, account for, annotate, calculate, change, convert, group, explain, generalize, give examples, infer, interpret, paraphrase, predict, review, summarize, translate
Application	using a general concept to solve problems in a particular situation; using learned material in new and concrete situations	apply, adopt, collect, construct, demonstrate, discover, illustrate, interview, make use of, manipulate, relate, show, solve, use
Analysis	breaking something down into its parts; may focus on identification of parts or analysis of relationships between parts, or recognition of organizational principles	analyze, compare, contrast, diagram, differentiate, dissect, distinguish, identify, illustrate, infer, outline, point out, select, separate, sort, subdivide
Synthesis	creating something new by putting parts of different ideas together to make a whole	blend, build, change, combine, compile, compose, conceive, create, design, formulate, generate, hypothesize, plan, predict, produce, reorder, revise, tell, write
Evaluation	judging the value of material or methods as they might be applied in a particular situation; judging with the use of definite criteria	accept, appraise, assess, arbitrate, award, choose, conclude, criticize, defend, evaluate, grade, judge, prioritize, recommend, referee, reject, select, support

Examples of Verbs for Student Learning Outcome

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Add	Account for	Act	Anticipate	Adapt	Align
Arrange	Articulate	Administer	Break down	Blend	Appraise
Calculate	Cite	Change	Categorize	Combine	Argue
Circle	Clarify	Chart	Characterize	Compile	Assess
Complete	Convert	Choose	Classify	Compose	Choose
Define	Convey	Collect	Compare	Create	Contend
Divide	Describe	Compute	Contrast	Design	Conclude
Draw	Designate	Construct	Correlate	Devise	Consider
Duplicate	Detail	Contribute	Debate	Facilitate	Construe
Enumerate	Discuss	Control	Deduce	Formulate	Criticize
Express	Explain	Demonstrate	Diagram	Generate	Critique
Find	Figure out	Determine	Differentiate	Graph	Decide
Identify	Generalize	Develop	Discriminate	Incorporate	Defend
Inform	Give examples	Discover	Distinguish	Individualize	Deliberate
Label	Illustrate	Dramatize	Dissect	Initiate	Dispute
List	Indicate	Employ	Examine	Integrate	Estimate
Match	Interpret	Establish	Focus	Invent	Evaluate
Multiply	Locate	Extend	Group	Make up	Judge
Name	Make sense of	Imitate	Illustrate	Mix	Justify
Point	Order	Implement	Infer	Model	Make a case
Quote	Paraphrase	Interview	Limit	Modify	Predict
Recall	Portray	Include	Outline	Plan	Prioritize
Recite	Predict	Instruct	Point out	Pretend	Prove
Record	Report	Manipulate	Prioritize	Propose	Rank
Repeat	Restate	Operate	Recognize	Rearrange	Rate
Reproduce	Review	Participate	Research	Reconstruct	Rationalize
Select	Sequence	Perform	Relate	Revise	Reflect
State	Specify	Produce	Separate	Rewrite	Reframe
Subtract	Summarize	Provide	Subdivide	Structure	Refute
Tell	Trace	Show	Transfer	Substitute	Resolve
Write	Understand	Use	Translate	Validate	Support

Assessment vs. Evaluation

Sinclair Community College has developed the following definitions and chart illustrating the difference between assessment and evaluation. **Assessment** is the analysis and use of data by students, faculty, and/or departments to make decisions about improvements in teaching and student learning. **Evaluation** is the analysis and use of data by faculty to make judgments about student performance. Evaluation includes the determination of a grade or a decision regarding pass/fail for an individual assignment or a course.

<i>Assessment</i>	<i>Evaluation</i>
A faculty member provides feedback to a student regarding performance on an examination. The student uses that feedback to study differently in order to improve learning and performance.	A faculty member corrects an examination and assigns a grade of 82% to a student.
A team of faculty members analyzes examination results of all students in a course and discovers that 65% of the students did not demonstrate understanding of an important concept. Faculty members investigate possible causes and plan changes in teaching/learning strategies to improve student understanding.	Pop quizzes are given in a class to determine if students have read sections of the text that cover important concepts. Simple Pass/Fail grades are assigned and tallied at the end of the quarter. The quizzes count for 5% of the total course grade.
A student delivers an oral presentation in class. The faculty member provides a critique of delivery and content so that improvements may be made in the student's subsequent presentations.	A student delivers an oral presentation in class. The faculty member provides a critique of delivery and content accompanied by a grade for the assignment.
A faculty member analyzes the results of oral communication checklists completed for all students in the course section who delivered oral presentations in class in order to determine opportunities for improving teaching and learning.	A faculty member in health uses a rating scale to assign numbers (1-4) that indicate the level of achievement of clinical criteria based on observation of a student's performance of patient care.
The class attendance record indicates that a student has been absent multiple times. The faculty member advises the student in order to facilitate improved attendance, as studies suggest that regular class attendance contributes to student success.	Points are deducted from a student's grade for each class absence, in accordance with a department policy.
Students are videotaped interacting with the children in an Early Childhood Education Center. They view their videotapes and develop self-assessment narratives in which they describe and evaluate their performances. They then develop specific plans for improvement.	Students are videotaped interacting with children in an Early Childhood Education Center. A faculty member evaluates each videotaped performance based upon course criteria and assigns a letter grade.

A student reads another student's essay and gives feedback on the content and correctness of the essay as a way to improve the writing.	A faculty member reviews a student peer reader's feedback and assigns a point value to the documentation to indicate satisfactory completion of the assignment.
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Assessment Instruments and Resources

After determining what students need to know, be able to do, or think as a result of taking the course and writing student learning outcomes covering multiple levels of Bloom's taxonomy and based on the SMART model, instructors will select ways to evaluate if students have achieved those outcomes. The first step in evaluating if students have met an outcome is to select or develop an assessment instrument. Not everything must be measured. And faculty can use a variety of direct and indirect measurements. Faculty should realize that they do not necessarily need to add to what they are already doing in the course to assess students' mastery of the material. Performances, presentations, assignments, test questions and similar class activities can be used to assess student learning on the established outcomes. Traditional testing methods alone are not always the most effective in evaluating course outcomes. Examples of assignments that could serve as assessment instruments to measure student learning on course outcomes appear below:

Basic Algebra

1. Outcome: Recognize and apply different methods of factoring.
2. Assessment: Examination asking students to factor several expressions

English Composition

1. Outcome: Write research utilizing library facilities and research techniques.
2. Assessment: Research paper

Art Appreciation

1. Outcome: Analyze works of art using the language of visual experience.
2. Assessment: Student's participation in group presentation critiquing works of art

Although the majority of student learning occurs in the classroom, student learning occurs in other areas of the college. Listed below are samples of learning outcomes from other arenas than the classroom developed at Paradise Valley Community College, AZ.

Office of Service-Learning: Learning Outcomes for Students:

- Students will be able to exhibit a deep understanding of self and their involvement in the community.

- Students will be able to utilize problem-solving and critical-thinking skills.
- Students will develop leadership values.
- Students will be able to utilize effective oral and written communication skills.

Office of Service-Learning: Program Outcomes:

- Establish and maintain partnerships between the college and community agencies.
- Design and implement professional development programs on service learning theory and practice for college faculty and staff.
- Provide technical assistance and consultation service to faculty who are deploying service-learning in their courses.
- Assist faculty and staff in curriculum development projects with special emphasis on service-learning in the disciplines and the use of reflective practice to connect service and academic study.

Admissions and Records:

1. Students will demonstrate an understanding of the rules and procedures necessary to register for class.
2. Perspective students will demonstrate an understanding of enrollment procedures before registering.

Below are listed additional direct and indirect measurement instruments. Direct assessors of learning specifically evaluate the competence of students in the program. Indirect assessors differ in that they are concerned with students' experiences, opinions, or perceptions, rather than their knowledge and skills. These two methods rely on feedback from diverse populations (e.g., internships, supervisors, student self-reports, etc.).

Examples of Direct Indicators

- Pre- and post-testing
- Capstone experiences
- Oral examinations/presentations
- Written products/essays
- Performance in supervised internships
- Portfolio assessments
- Research papers/theses/dissertations
- Standardized exams

Examples of Indirect Indicators

- Information gathered from students
- Information gathered from alumni
- Information gathered from employers
- Graduation rates
- Retention rates
- Transfer studies
- Graduate follow-up studies
- Job placement data

- Locally developed tests
- Performance on licensure, certification or professional exams
- Performance-based assessments
- Juried reviews and performances
- Exhibitions/demonstrations
- Practical exams
- Curriculum and syllabus analysis

Assessment Methods

In determining assessment methods, faculty should discuss guidelines and criteria for selecting appropriate assessment methods. The following passage (edited) written by Trudy Banta and Catherine Palomba gives a general overview of some of the important issues to consider when selecting an assessment methodology or instrument.

To select among assessment instruments, faculty must discuss and establish their selection criteria and become familiar with various assessment methods. The most important selection criteria is whether the method will provide useful information that indicates whether students are learning and developing in ways faculty have agreed are important.

Assessment methods must be linked to goals and objectives for learning and to the instructional activities that support these goals. For example, future teachers should be observed interacting with students, not simply examined with a multiple-choice test.

Assessment methods (also called techniques or instruments) include both direct and indirect approaches. Direct measures of learning require students to display their knowledge and skills as they respond to the instrument itself. Objective tests, essays, presentations, and classroom assignments all meet this criterion. Indirect methods such as surveys and interviews ask students to reflect on their learning rather than demonstrate it.

A further distinction that may be made is between quantitative methods that rely on numerical scores or ratings and qualitative methods that rely on descriptions rather than numbers. The goal of qualitative methods is to provide a narration or description about what is occurring with emphasis on illuminating the meaning of behavior. Because of the rich information they provide, current trends in assessment include increased use of performance measures and qualitative approaches. Educators increasingly believe that assessment itself should contribute to learning. Over time, educational research has identified conditions that are beneficial to student learning. The premise of assessment is that all educators, not just educational researchers, care about whether their students learn. Based on that premise, faculty and staff who select and design assessment strategies need to consider what is known about learning.

Because learning is enhanced by doing, it makes sense to design assessment strategies that actively engage students. Such methods should also allow students the chance to receive feedback and respond to it. All assessment practitioners need not be educational researchers, but they should ask focused questions about each assessment strategy. Will it, by itself, enhance student learning? Will it provide students with opportunities for self-evaluation? In addition to the methods chosen, faculty must decide when information will be collected. Will information be collected from students at entry, midpoint, or exit? Will it be collected from alumni one, two, or five years after graduation? If students are the source, faculty must decide how the information will affect student progress. Will it be required or graded? The site of data collection must also be determined. One possibility is to create (or take advantage of) data-collection opportunities outside the classroom. The current trend is to collect assessment information within the classroom, not simply for convenience but because of the opportunity this provides to use already in-place assignments and coursework for assessment purposes. The specific approach that is used needs to reflect the overall purposes of the assessment program.

(Palomba, C and Banta, T, "The Essentials of Successful Assessment" in *Assessment Essentials: Planning, Implementing, and Improving Assessment in Higher Education*, Jossey-Bass. 1999.)

Palomba and Banta also offer criteria to consider when selecting an assessment method.

1. Relationship to assessment

According to the Department of Education (1998), you should consider the ability of an assessment method to address specific assessment questions, as well as its relevance and utility. Make certain that the selected assessment method satisfy the objectives of the assessment questions. That is, the methods you choose should be able to provide you with

information about what you are trying to assess. As an example, while surveys can be a great tool to assess students' perception of a certain process, they are not useful in determining students' knowledge or understanding of a subject.

2. Reliability

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 1) the respondents, 2) the instrument (assessment method) and 3) the administration of the instrument. The method selected should be one that provides dependable, consistent results time after time. The instrument should not be unambiguous and should be clearly worded. The time available to complete the instrument should be consistent with its length. The instructions and time allocated for completion should be consistent across programs or departments.

3. Validity

Validity refers to determining whether the selected assessment method is appropriate for measuring what you want to measure. It is often a time-consuming and challenging task to provide evidence supporting the validity of the selected method. According to the Joint Committee on Standards for Educational Evaluation (1993), it is necessary to gather evidence to support the interpretation and appropriateness of a survey or test for a specific purpose. It is also recommended to use multiple data sources. Achieving high-quality assessment requires addressing issues identified by Linn and Baker (1996) and Herman, Aschbacher, and Winters (1992) such as:

- Does the selected method cover the curriculum objectives?
- Does it match the desired level of complexity?
- Can the results be generalized, and to what extent?
- Will we gain information that will be useful in improving programs?

4. Timeliness and cost

The time and costs involved in assessing programs may be a concern for faculty and administrators. It is necessary to estimate the time required to develop, administer and evaluate various assessment methods. Angelo and Cross (1993) utilize a rating system of low, medium, or high to help faculty select classroom assessment methods. Each method is evaluated on preparation time, students' response time, and analysis time. Each of these factors is given a rating. A similar approach can be used for program assessment methods. Also, evaluating the costs associated with administering assessment methods is imperative. Costs can range from opportunity costs (e.g., faculty working on assessment and not on teaching-related activities or research) to the tangible costs associated with the method (e.g., the financial cost of using and analyzing a nationally developed instrument).

5. Motivation

Assessment methods should be selected with a focus on whether or not they provide value to students and encourage their participation in the assessment effort. Course-embedded assessment methods are highly valuable because they take advantage of current classroom activities. When alumni and employers are the focus of assessment methods, one should select instruments that would elicit their participation without requiring them to come to campus (surveys, phone interviews).

6. Other

There are other considerations that are pertinent to selecting the appropriate assessment method. The following is a list of questions to consider:

- Will the instrument or method provide results that are easy to understand and interpret?
- Are the fluctuations in the results representative of changes in the program or something else?

There are also challenges that may be encountered during the process of selecting assessment methods. The University of Florida (UCF) Academic Program Assessment Handbook offers these solutions to challenges:

1. Acknowledge differences between programs that reside within a department. Some methods may work well for one program, but not another.
2. When selecting a particular assessment method, start small and test it. If it turns out to not be a meaningful instrument, not too much time and effort has been wasted.
3. For ensuring better success when choosing a method, encourage feedback and communication.
4. Match the assessment method chosen to the goal or already intended outcome. Don't develop an assessment method and hope the outcome fits.

Assessment Results

The final task in good program assessment is "closing the loop." This is the *act* step in the plan-do-check-act cycle. In this step faculty analyze the assessment results, develop recommendations, and develop an action plan.

Using data from measures associated with student learning outcomes to compare actual student performance with intended student performance allows faculty to identify areas of strength and weakness for students. Determining weak areas allows a program to target those areas for improvement. Faculty can be certain that the knowledge, skills, or values that are intended are adequately addressed in the courses students take as they progress through the program

Use of data from direct assessments

- **Cognitive:** What does the student know versus what the program intends the student to know?
- **Performance and skills:** What can the student do versus what the program expects the student to be able to do?
- **Affective:** What does the student care about versus what the program intends the student to care about?

Use of data from indirect assessments

- **Cognitive:** What does the student report that he knows (i.e. his perception of his knowledge, understanding, etc.)? Does it match what you planned students' perception to be of the discipline or a specific aspect of the discipline?
- **Performance and skills:** What does the student report that he can do (i.e., his perception of his ability or skills)? Does it match what you intended students in your program to do?
- **Affective:** How does the student respond to questions dealing with program impact on the student's values? Does it match your intended values and beliefs?

Faculty members are encouraged to use the results of assessment to improve student learning. If outcomes are lower than the performance expectations, changes may be needed in curriculum or instruction such as:

- Revision of content of existing courses
- Modification of delivery methods
- Modification of learning activities
- Addition or elimination of courses
- Sequencing courses differently

If student outcomes meet or exceed performance expectations, faculty may need to reevaluate the learning objectives, assessment measures, or performance standards to ensure that they are appropriate.

Results of assessment also should be integrated into the planning and budgeting processes including identifying and allocating resources needed to improve student learning and designating individuals or groups responsible for affecting changes.

At the course level, the chief purpose of assessing course outcomes is (a) to improve learning by promoting a dialogue among instructors about improving student learning in the course and (b) make improvements in the course as needed. A well-done assessment provides evidence of students' strengths and weaknesses in mastering the various course outcomes. Ideally, the assessment was planned and implemented well and produced data about areas where students

have difficulty mastering some of the course outcomes. For faculty members in the department, interpreting the data is mostly a matter of intuition, experience, and sound judgment.

The first time a course is assessed might uncover ways to improve the assessment process the second time around. The data might show some obvious areas to revise a course, or the data might show that the course is satisfactory as currently taught. Using assessment results as evidence, instructors might decide to:

- Revise the course outcomes to include more higher-order thinking and greater intellectual rigor
- Obtain more consistency in large multi-section courses
- Reduce grade inflation by linking test and course grades to mastery of all outcomes
- Increase contact with adjunct faculty
- Explore active learning strategies and other teaching methods
- Explore other ways of assessing outcomes
- Explore technological enhancements (labs, equipment, CD tutorial, etc.), using the assessment evidence to support a request for increased funding
- Conduct a retreat or workshop for instructors

Prince George Community College constructed the following chart to provide examples of each action taken as a result of assessment:

Action a department may take after assessment	How specific courses planned to change their courses after assessment
Change syllabi to prepare students for the rigor of the course.	Children’s Literature professors decided to emphasize the intellectual rigor and copious reading in the class in the syllabus to make students “aware” that the assignments and papers would be difficult.
Revise the course outcomes to include more higher-order thinking, greater intellectual rigor, and/or sufficiency.	Many courses have merged similar outcomes, omitted outcomes based on their lack of intellectual rigor, and/or added language to outcomes based on Bloom’s Taxonomy of high-order thinking.
Based on results from assessment, add or reduce certain elements of the classroom exercises.	Using the equivalent of an item analysis, the faculty members noticed that many of the questions answered incorrectly on their assessment test were answered so because

	students could not “unlock meaning of unknown words” based on prefixes and suffixes. Hence, the faculty will investigate how to emphasize word parts in classes.
Obtain more consistency in large multi-section courses.	Faculty members noticed that consistency in multi-section courses is difficult, given that satellite campuses do not have the same resources. Although this analysis delivers a negative truth, it also is one worth noting.
Reduce grade inflation by linking test and course grades to mastery of all outcomes.	Assessment and analysis of a math course showed that students’ scores on the portion of the exam that was common among all students were not predictive of their final grade. This portion, however, did not count toward the final exam grade. Thus, it was speculated that some students did not take that part of the exam as seriously as the weighted part.
Increase contact with adjunct faculty.	Math instructors also suggested that the master syllabus may not communicate the timing in which certain skills ought to be taught and this would present problems, especially to adjunct instructors who are not in contact with faculty as much as full time instructors.
Explore active learning strategies and other teaching methods.	In Physical Sciences, the instructor has: <ul style="list-style-type: none"> ➤ Changed the sequence of course topics for better flow ➤ Introduced additional worksheets for practice on skills ➤ Spent more time discussing processes ➤ De-emphasized memorization
Explore other ways of assessing outcomes.	The Developmental Reading faculty decided that since they encourage students to annotate their texts, the same strategy ought to be applied when students are being assessed. Because they were not aware of this possibility, the faculty hypothesized, students did not perform to their potential.
Explore technological enhancements	Management faculty members discussed

(labs, equipment, CD tutorial, etc.), using the assessment evidence to support a request for increased funding.	organizing and cataloguing a library or videos relevant to the course to better support visual learners.
Conduct a retreat or workshop for instructors.	Biology faculty examined their course and came up with a plethora of questions. Based on this analysis, the faculty desires to contact an expert in assessment to find where and how to proceed. The faculty emphasizes that their desire to seek further help is linked to their belief in assessment and its ability to enhance student learning.

As a member of the Higher Learning Commission, each college is obligated to make public the results of assessment of student learning. Each college is encouraged to consider the most effective approach to disseminating the results of assessment. There are many options including an executive summary and presentations to the public through news releases or the college website.

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Glossary

1. **Assessment:** The systematic collection, examination, and interpretation of qualitative and quantitative data about student learning and the use of that information to document and to improve student learning.
2. **Authentic Assessment:** (*also known as Performance-Based Assessment*) To accurately evaluate what a person has learned, an assessment method must examine his or her collective abilities. This is what is meant by authentic assessment. Authentic assessment presents students with real-world challenges that require them to apply their relevant skills and knowledge. Student performance on a task is typically scored on a rubric to determine how successfully the student has met specific standards.
3. **Benchmark:** A description or example of student or institutional performance that serves as a standard of comparison for evaluation and judging quality.
4. **Bloom's Taxonomy:** Six levels arranged in order of increasing complexity: knowledge, comprehension, application, analysis, synthesis, evaluation.
5. **Capstone Course:** A capstone could be a designated assessment course. Program learning outcomes can be integrated into assignments.
6. **CATs:** Classroom assessment techniques; usually non-graded methods used in the classroom (little class time is taken) to ascertain whether or not students have achieved a course objective or how much prior knowledge students have of a concept. These methods include a minute paper, muddiest point, confidence survey, and a paper prospectus. They can only be used in an assessment program if the method used directly addresses a program or general education outcome (not course objective) and a detailed observation can be made or quantified for future reference and comparison. (Refer to Angelo and Cross, *Classroom Assessment Techniques*, 1993.)
7. **Classroom Assessment:** A process of assessment techniques customized to the specific needs of the students and curriculum, and guided by the professional judgment and knowledge of the teacher.
8. **Closing the Loop/Feedback Loop:** The process by which assessment results are used in programmatic and campus-wide decisions to impact student learning.
9. **Competency:** Statements that describe skills or knowledge students are expected to possess as a result of completing the course successfully.
10. **Competency-Based Assessment:** An assessment of a student's performance as compared to a specific learning objective or performance standard.
11. **Direct Measurement:** A measurement of student learning outcomes showing what they have learned. Examples of such measures include but are not limited to: licensure test results, capstone courses, portfolios, and entry and exit test results.
12. **Evaluate/Evaluation:** *Definition 1:* Evaluation uses assessment information to make an informed judgment on such things as whether students have achieved the learning goals we've established for them, the relative strengths and weaknesses of our teaching/learning strategies, or what changes in our goals and teaching/ learning

strategies might be appropriate. Assessment results alone guide us; evaluation informs our decisions. *Definition 2:* Evaluation is used to investigate and judge the quality or worth of a program, project, or other entity, rather than student learning. Under this definition, evaluation is broader than assessment.

13. **Formative Assessment:** Refers to assessments that provide information to students and teachers that are used to improve teaching and learning. These are often informal and ongoing, though they need not be. Data from summative assessments can be used in a formative way. (*see also Summative Assessment*).
14. **Grading:** a process of faculty review and evaluation of student learning that is used as a basis for rating performance.
15. **Indirect Measurement:** A measurement of program outputs using student performance information. Examples of such measures include but are not limited to the number of students successfully transferring, graduation rates, placement data, advisory committee evaluation, and feedback from students, graduates, or employers.
16. **Institutional Effectiveness:** The measure of what an institution actually achieves, done for the purpose of continual improvement.
17. **Learning Outcomes:** Statements that specify what learners will know or be able to do as a result of a learning activity. Outcomes are usually expressed as knowledge, skills or attitudes. In addition, three distinguishing characteristics of learning outcomes are that the specified action of the learner must be observable, measurable, and done by the learner.
18. **Measurement:** A systematic process providing meaningful, understandable, and dependable information.
19. **Norm-Referenced Assessment:** An assessment of a student's performance or performances as compared to a larger group. Usually the larger group or "norm group" is a national sample representing a wide and diverse cross-section of students.
20. **Objective Test:** A correct answer test.
21. **Outcomes:** Knowledge, abilities, or attitudes that students should have as a result of instruction.
22. **Portfolio:** A representative collection of a student's work, including evidence that the student has evaluated the quality of his or her own work. It may be in a variety of formats, including electronic and hard copy.
23. **Primary Trait Analysis (PTA):** The process of identifying major traits or characteristics that are expected in student work. After the primary traits are identified, specific criteria with performance standards are defined for each trait.
24. **Program Assessment:** A combination of assessments techniques, data collection and analysis about student achievement for learning outcomes at the classroom and course levels, and leading to improvements of the academic program.
25. **Reliability:** Measure of consistency for an assessment instrument.
26. **Rubric or Scoring Guide:** A set of scoring guidelines that can be used to evaluate students' work.

27. **Subjective test:** Test in which the impression or opinion of the assessor determines the score for the performance. A test in which the answers cannot be known or prescribed in advance.
28. **Summative Assessment:** Refers to cumulative assessments, usually occurring at the end of a unit or topic coverage, that intend to capture what a student has learned, or the quality of the learning, and judge performance against some standards. Although summative assessments are often thought of as traditional objective tests, this need not be the case. For example, summative assessments could follow from an accumulation of evidence collected over time, as in a collection of student work. (*see also Formative Assessment*).
29. **Testing:** Testing is the systematic measurement of a mental trait such as an aptitude, achievement, skill, or attitude. Therefore, testing is included in the assessment process; however, testing is, in the broader sense, more than the traditional multiple-choice, essay, and true/false strategy.
30. **Validity:** Degree to which the assessment accurately reflects the learning it was designed to measure.