



Outcomes Assessment Manual for Academic Programs

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Office of
Institutional
Effectiveness

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Introduction

For those of us with a strong commitment to teaching and learning, assessing and documenting what and how much students are learning and able to do upon completion of our programs are critical to improving educational experiences offered. This guide is designed to provide an introduction to assessment of academic programs at John Tyler Community College. The guide provides information and examples on writing program and student learning outcomes and developing measures.

Assessment is a systematic, ongoing cycle of setting goals and objectives, measuring attainment of those goals and objectives, and analyzing and using the results to make informed decisions. Good assessment can promote quality enhancement by providing the necessary evidence to guide effective decision making in many areas, including programmatic changes, classroom teaching modifications, support service adjustments, policy or procedure revisions, campus climate improvements, and structural reorganizations. We need to know how we are doing before we can do better.

The concept of quality enhancement is at the heart of the Southern Association of Colleges and Schools' philosophy of accreditation. Comprehensive Standard 3.3.1.1 states that the institution identifies expected outcomes including student learning outcomes, assesses the extent to which it achieves these outcomes, and provides evidence of improvement based on analysis of the results.

Assessment

So what exactly is assessment? **Assessment is a systematic process of gathering and interpreting information to discover if a program is meeting established objectives and then using that information to enhance the program.**

A good assessment process can answer three related questions:

- What are we trying to do?—defining the most important goals/outcomes for students to achieve
- How well are we doing it?—evaluating how well students are actually achieving those goals
- How are we using what we discover to improve what we will do in the future? —using the results to improve the academic experience.

Benefits of Outcomes Assessment

For students, outcomes assessment:

- Provides clear expectations about what is important to be able to know and do upon completion of program
- Informs students about how they will be evaluated
- Reassures students that the program is accomplishing what it says it will
- Helps students make decision about programs based on outcomes results

For faculty, outcomes assessment:

- Helps to determine what is working and what is not working
- Facilitates valuable interdisciplinary and intercampus discussions
- Demonstrates a commitment to continually improve academic offerings
- Can help in gaining funding from grants and prospective donors
- Provides evidence to students, prospective students, faculty, staff, and the larger community about what the program is accomplishing

Why Aren't Grades Enough?

While grades give an indication of a student's average performance in a course, they are not consistent from instructor to instructor, and they do not provide specific information about what a student knows or can do or demonstrate upon completion of the course. Final grades represent an aggregate assessment of the student's work for a particular course and may include attendance and class participation.

The College's Commitment to Assessment

The College is committed to excellence and helping students achieve their goals. As the vision statement notes: "a success story for every student." The Office of Institutional Effectiveness (OIE) will work with units to develop outcomes assessment plans, provide help developing measurement tools, and will document programs' assessment work. The College recognizes and expects that:

1. Faculty are best suited to determine the intended educational outcomes of their academic programs and activities, how to assess these outcomes, and how to use the results for program development and improvement.
2. Every academic unit will engage in outcomes assessment.
3. Results of outcomes assessment will be used to evaluate the effectiveness of academic programs and not the performance of individual faculty or staff.
4. Information collected through outcomes assessment will be used to develop and improve academic programs. This is not intended to be merely a "compliance" exercise.
5. It is incumbent upon department heads and deans and the vice president for academic affairs to provide leadership and accountability for outcomes assessment.
6. Our goal is to make outcomes assessment part of the fabric of the College, that it is ongoing and performed on a regular basis within each academic area.

Additionally, program assessment is effective when:

1. Assessment is viewed as a comprehensive, systematic and continuous process.
2. Assessment is viewed as a means for self-improvement.
3. Assessment measures are meaningful.
4. Assessment utilizes multiple measures and multiple sources.
5. Assessment results are valued and are genuinely used to improve programs and processes.
6. Assessment involves the participation and input of all faculty and staff.
7. Assessment includes students.

Assessment Cycle

Steps in Assessment Cycle

Step 1: Articulate the mission or purpose of your academic program.

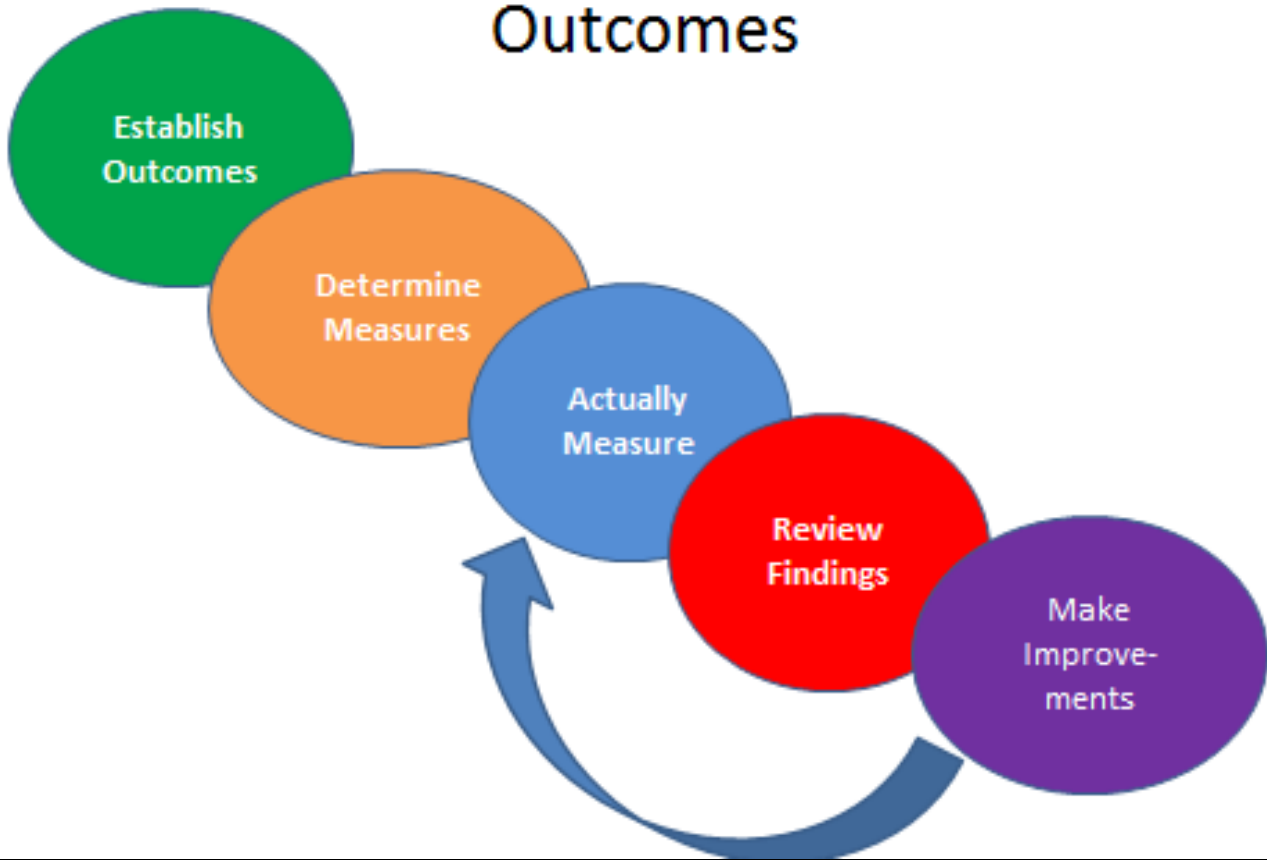
Your program's mission statement or statement of purpose links the program or department to your division and ultimately to the overall mission of the College. In formulating or revising a purpose or mission statement that is integrated into the college's mission, review the mission and identify how your academic program supports College's mission.

Step 2: Define educational and programmatic goals and objectives, including desired student learning outcomes.

If any single step is the key for assessment planning, this is it. You will assess student learning relative to the educational goals and objectives you agree upon and establish for your program or department.

A goal is a general statement about the aims or purposes of education in your program. Goals are long-range outcomes that are written in broad, sometimes vague language.

Assessment of Student Learning Outcomes



An objective is a specific statement that describes a desired learning outcome for your program.

This concept of a learning outcome seems to be the most difficult type of objective for people to understand, but it is really quite straightforward. Peter Ewell, a well-known national assessment researcher, notes:

A student learning outcome is defined in terms of the particular levels of knowledge, skills and abilities that a student has attained at the end (or as a result) of his or her engagement in a particular set of collegiate experiences.

You might choose the following objectives to assess:

Student Learning Outcomes (SLOs)

Knowledge outcomes

- major or discipline content
- modes of inquiry

General education outcomes

- oral and written communications
- critical thinking and problem solving
- library and computer use

- quantitative and scientific literacy

Skills outcomes

- those required for effective practice in the discipline or in future employment
- ability to work with others
- listening skills
- teamwork or leadership

Attitudes and values

- personal
- social
- ethical
- related to diversity

Programmatic Outcomes (SPOs)

Behavioral outcomes--Most of these are outcomes that are important to your program but do not give direct evidence of student learning:

- graduation rates
- current students persistence and choice of major
- course selection and completion
- former students' employment information
- transfer or other further education
- professional activities
- community contributions
- evaluation of satisfaction with the program's preparation

Establish Criteria for Success

Step 3: Identify and describe appropriate assessment instruments or methods.

After you have identified goals and objectives, decide on appropriate assessment approaches. What sources of evidence could you gather that would convince you (and others!) that your students are reaching the desired learning objectives? Remember the nine principles: comprehensive assessment strategies frequently require the use of more than one assessment to determine program effectiveness. Before you feel overwhelmed, here are a couple of points to keep in mind:

- Stagger assessments – not every assessment has to be conducted every semester or every year. They can be done on a biennial or triennial basis, if appropriate.
- Course grades – while a source of information about individual student achievement, these do not usually provide information about overall programmatic outcomes.

Step 4: Establish criteria for learning success.

It is important to know what level of achievement will tell you that your program helps students achieve learning success. Here are a few examples:

- At least 70% of students can solve a complex, real-world problem using skills developed in your program.
- A panel of experts rates highly the performance of students on their oral presentations in a capstone course.
- At least 75% of students can take reference materials and write an acceptable speech for a town council.
- The program advisory group reports that graduates have appropriate entry-level skills.
- At least 80% of students can pass your professional licensure exam on the first attempt.
- Panels of reviewers confirm that student portfolios reflect progressive development of critical thinking skills over time in your program.
- At least 95% of students and employers of graduates indicate satisfaction with your program.
- Interviews with graduating seniors indicate that students are overwhelmingly pleased with your program, but desire more internship possibilities.

Step 5: Conduct assessment activities.

Put your plan into action. Conducting assessment activities could include having a panel read a set of papers, taking a sample of oral presentations and reviewing the videotapes, or conducting a focus group with seniors. This time is marvelous to see what students can do, find out what they think and look more closely at your curriculum.

Think through developing the tools you will need. For example, a scoring rubric may be useful. See Appendix B for an example of a scoring rubric for oral communication.

If you plan assessments so that they are comparable over time and the sample sizes are adequate, you can gather valuable feedback on your program's effectiveness.

Step 6: Analyze the findings from your assessments.

What are the implications of the findings? How did students do compared to your expectations? What

program changes could you make to improve student knowledge and skills that did not reach criterion success levels? What can you infer from the data? What future actions should your program take?

As you discuss the assessment results and their implications with others in your program, remember to celebrate what the program has accomplished in relation to what it hoped to accomplish. Are students achieving expected outcomes? This time also is for you to revisit and improve your assessment measures.

Remember to document assessment findings. Summarize the results for reporting purposes, but be sure to retain details of documentation in your own files so that you can review performance, and progress, over time.

Step 7: Implement changes to enhance quality.

The results of this process should not sit on your shelf. To avoid having done a hollow exercise, you must “close the loop.” If you have moved through the steps of this model, you will have evidence in hand that is important to you; use it to make improvements in your academic program in order to improve student learning. How can you help students develop the outcomes you wish to see? Perhaps you need to add or modify learning opportunities, give more chances for students to develop their skills in certain areas, or improve advising so that students take courses in a sequence that helps them develop key skills.

Also review your assessment plan. Is it time to make changes in your goals and objectives? Are your assessment methods giving you the quantity and quality of information you need?

Writing Student Learning Outcomes

SLOs should describe what students should know, be able to do and/or be like (dispositions) by the end of the defined program. These types of SLOs are typically linked to domains. The common domains of learning include cognitive, affective and psychomotor. These domains are described in more detail in the following pages.

When writing SLOs, the focus should be on observable outcomes and an “action verb” can provide that focus. SLOs usually begin with something like:

By the end of the secondary education program, students will be able to *design* curriculum and instruction appropriate for the cognitive development of all learners.

Design is the “action verb” in this example.

By the end of the chemistry program, students will be able to *apply* knowledge of ions, solutions and solubility to *explain* the formation and properties of homogeneous mixtures.

Apply and *explain* are the “action verbs” in this example. Some other action verbs are listed below:

Identify	Name	Distinguish	Define
Describe	Classify	Order	Construct
Demonstrate	Translate	Predict	Interpret
Generalize	Explain	Apply	Analyze
Recognize	Specify	Create	Judge
Attend	Volunteer	Participate	Run
Hit	Communicate	Dance	Solve
Perform	Evaluate	Speak	Interview
Predict	Design	Locate	Draw
Conjugate	Others?		

Affective Taxonomy

The affective domain includes a focus on students' attitudes, values and dispositions. These outcomes are a little more difficult to measure; however, it is possible, and many disciplines are including these in their national standards

Affective (Values, Dispositions) Domain

Level	Action Verbs	Outcome Example
Receiving	Attend, accept, listen, selectively attend to	By the end of the women's studies program, students will listen attentively to alternative views on select issues.
Responding	Comply with, approve, volunteer, applaud, acclaim	By the end of the elementary education program, students will be able to comply with standards 94-142.
Valuing	Increase proficiency in, relinquish, assist, support, deny, protest, debate	By the end of the political science program, students will be able to debate numerous sides to an argument.
Organization	Balance, organize, formulate, accommodate	By the end of the environmental studies program, students will be able to organize the conservation efforts of urban, suburban and rural communities.
Characterization by a value complex	Respect, interpret, use evidence, maintain objectivity	By the end of the counseling program, students will be able to objectively interpret evidence presented by clients during a therapy session.

Bloom's Taxonomy of the Cognitive (Knowledge) Domain

Level	Action Verbs	Outcome Example
Knowledge	Recite, List	By the end of the chemistry program, students will be able to list all of the elements on the Periodic Table.
Comprehension	Translate, interpret, predict, generalize, identify examples	By the end of the French program, students will be able to translate a paragraph of text from English to French.
Application	Apply, rewrite	By the end of the BIS program, students will be able to apply basic Web development skills
Analysis	Analyze, dissect, resolve, solve, diagnose, investigate	By the end of the special education program, students will be able to diagnose learning disabilities in K-12 settings.
Synthesis	Create, synthesize, write	By the end of the art program, students will be able to create at least 12 original works in their medium.
Evaluation	Evaluate, judge, rate, appraise	By the end of the music education program, students will be able to judge student performances.

Examples of Action Verbs for Levels in Bloom's Taxonomy
(from De Anza College's AU Assessment Handbook)

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
acquire	arrange	apply	analyze	alter	appraise
attend	categorize	calculate	appraise	calculate	argue
choose	change	change	break down	categorize	assess
collect	chart	choose	categorize	change	compare
complete	cite	classify	classify	classify	conclude
copy	circle	compute	combine	combine	consider
define	classify	conduct	compare	compile	contrast
describe	compile	construct	conclude	compose	critique
detect	conclude	demonstrate	contrast	conduct	decide
differentiate	convert	develop	criticize	constitute	describe
distinguish	defend	discover	deduce	construct	discriminate
duplicate	demonstrate	employ	defend	create	explain
find	determine	generalize	detect	deduce	interpret
identify	diagram	manipulate	diagram	derive	judge
imitate	differentiate	modify	differentiate	design	justify
indicate	distinguish	operate	discriminate	devise	recommend
isolate	document	organize	distinguish	develop	relate
label	draw	predict	evaluate	discover	standardize
list	edit	prepare	formulate	discuss	summarize
mark	estimate	produce	generate	document	validate
match	explain	relate	identify	expand	
name	extend	restructure	illustrate	explain	
order	extrapolate	show	induce	formulate	
outline	fill in	solve	infer	generalize	
place	follow	transfer	outline	generate	
recall	formulate	use	paraphrase	modify	
recognize	gather		plan	organize	
reproduce	generalize		point out	originate	
select	give example		present	paraphrase	
state	give in own		question	plan	
underline	words		recognize	predict	
	illustrate		relate	produce	
	infer		save	propose	
	interpolate		select	rearrange	
	interpret		separate	reconstruct	
	itemize		shorten	relate	
	locate		structure	reorganize	
	make		subdivide	revise	
	organize			rewrite	
	paraphrase			signify	
	predict			simplify	
	prepare			specify	
	quote			summarize	
	read			synthesize	
	rearrange			systematize	
	record			tell	
	relate			transmit	
	reorder			write	
	rephrase				
	represent				
	restate				
	rewrite				
	summarize				
	translate				
	update				

Psychomotor Taxonomy

Psychomotor (Skills) Domain The Psychomotor Taxonomy focuses on the development of students' physical abilities and skills. These SLOs may include performances, skill in a sport, typing skills, painting, playing an instrument, manipulating another person's limbs during physical therapy and demonstrating a dissection.

Level	Action Verbs	Outcome Example
Perception	Chooses, describes, detects, differentiates, distinguishes, isolates, relates, selects, separates	By the end of the music theatre program, students will be able to relate types of music to particular dance steps.
Set	Begins, displays, explains, moves, proceeds, reacts, responds, shows, starts, volunteers	By the end of the physical education program, students will be able to demonstrate the proper stance for batting a ball.
Guided Response	Assembles, builds, calibrates, constructs, dismantles, displays, dissects, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, sketches	By the end of the physical education program, students will be able to perform a golf swing as demonstrated by the instructor.
Mechanical Response	Assembles, builds, calibrates, constructs, dismantles, displays, dissects, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, sketches	By the end of the biology program, students will be able to assemble laboratory equipment appropriate for experiments.
Complex Response	Assembles, builds, calibrates, constructs, dismantles, displays, dissects, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, sketches, demonstrate	By the end of the industrial education program, students will be able to demonstrate proper use of woodworking tools to high school students.
Adaptation	Adapts, alters, changes, rearranges, reorganizes, revises, varies	By the end of the industrial education program, students will be able to adapt their lessons on woodworking skills for disabled students.
Origination	Arranges, combines, composes, constructs, creates, designs, originates	By the end of the dance program, students will be able to create a dance step.

Reference:

Gronlund, N.E. (2000). *How to Write and Use Instructional Objectives*. Upper Saddle River, NJ: Prentice-Hall, Inc.

Measures

Traditionally, assessment methods have been categorized as either direct or indirect. These two classifications are based on the distinction between assessing student learning outcomes (SLOs) and student experience. 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.). *(Adapted from Concordia College)*

Multiple assessment measures or triangulation are required for each learning outcome. The use of multiple methods provides richer data and benefits students, faculty and other stakeholders in the following ways: 1) different components of one outcome can be assessed, and 2) an acceptable level of accuracy and authority can be achieved. If a nationally normed measure or standardized test is used a second measure is not normally required. Consider using both **qualitative and quantitative** assessment methods.

Direct Indicators of Learning

Direct indicators of student learning allow students to demonstrate what they know or can do. Some direct measures of student learning include:

- assessments in a capstone course that gauge students' total learning
- course-embedded assessments
- tests and examinations (locally or commercially produced) – be careful since what is tested needs to match well with your desired learning outcomes
- portfolios of work over time
- pre-test/post-test comparisons
- exhibitions
- clinical evaluations
- products such as papers or oral presentations
- videotaped or audiotaped performances or simulations • observations of students in case studies or other problem-solving situations

Indirect Indicators of Learning

Indirect indicators of student learning reflect what students or others report on student learning.

Examples of indirect measures of student learning include:

- supported opinions of external reviewers
- surveying and exit interviewing of students
- surveying of alumni
- surveying of employers (about learning demonstrated on the job)
- analysis of curriculum and syllabi
- success of students in graduate school
- success in careers or employment

Reporting Timeline

The best time to update objectives is in August/September of each annual reporting cycle. We will start the year with goals and objectives in place, assess how well we are doing through the year, and then report results of assessment activities and implications for future actions in April through June, modifying objectives for the following year.

Annual cycle of conducting assessment of student learning and program outcomes

	April and May	June and July	August	September through December	January through April	May
Assessment Activities	Complete assessment plan	Plans reviewed	Plans returned to programs	Conduct some assessments	Review and analyze results from fall Conduct additional assessments	Report results

Additional Resources

Assessment manuals from the University of Wisconsin and from Texas A&M were helpful in developing this guide.

The Departmental Guide and Record Book for Student Outcomes Assessment and Institutional Effectiveness by Karen W. Nichols and James O. Nichols (Agathon Press, 2000) provides many examples and more in-depth discussion of the elements in this guide. Copies can be ordered at www.agathonpress.com.

The Department Head's Guide to Assessment Implementation in Administrative and Educational Support Units by Karen W. Nichols and James O. Nichols (Agathon Press, 2000) has more detail and provides many examples. Copies can be ordered at www.agathonpress.com.

Learner-Centered Assessment on College Campuses by Mary E. Huba and Jann E. Freed (Allyn and Bacon, 2000) has a number of real university examples of learning outcome statements and of rubrics or criteria defining success. Copies can be ordered at www.ablongman.com.

Assessment Essentials by Catherine A. Palomba and Trudy W. Banta (Jossey-Bass Publishers, 1999) is an excellent introduction to the assessment process in higher education. Copies can be ordered at www.josseybass.com.

Finally, **Effective Grading** by Barbara Walvoord and Virginia Johnson Anderson (Jossey-Bass Publishers, 1998) “discusses how the grading process may be made more effective in individual classrooms and how the information about student learning that the grading process yields may be used within an institution’s assessment plan.” (Preface, xvii). Copies can be ordered at www.josseybass.com.

Appendix A

Definitions

Assessment—Assessment is a systematic process of gathering and interpreting information to discover if a program is meeting established objectives and then using that information to enhance the program.

Direct Measure—A direct measure is a method that examines student work or performance.

General Education—Core curricular offerings, often equating to the first two years of a baccalaureate degree. These offerings include foundational knowledge, skills, and perspectives to cultivate a broadly educated person.

Goal—A goal is a broad statement about desired ends.

Indirect Measure/Indicator—An indirect measure is a method that gathers perceptions of student work or performance.

Measure—A measure is a method to gauge achievement of expected results.

Mission/Purpose—The highest aims, intentions, and activities of a program compose its mission.

Objective—An objective is an active-verb description of specific point or task that will be accomplished or reached and can be assessed.

Outcome—An outcome is an active-verb description of a desired end result related to the program's mission. It can be assessed

Student Learning Outcome (SLO) —A student learning outcome is what students must gain in terms of knowledge, skills, or ability by the end of a specified time period (e.g., end of semester, end of course of study).

Student Program Outcome (SPO) — An outcome that is important to the program but does not give direct evidence of student learning. Examples include persistence, completion of gatekeeper courses, graduation, transfer, employment, and satisfaction.

Appendix B
Assessment Plan for Academic Programs
John Tyler Community College

Title of Program: _____

Level of Award (e.g. AA, C, CSC) _____

Purpose/Mission of Program

Type	Objective/outcome of student learning evaluated (please number)	Measure(s)	Target Performance Level	Frequency/timeline	Findings (completed at the end of assessment cycle)	Action Plan (completed at the end of assessment cycle)
SLO						
SLO						
SLO						
SLO						

Type-Student Progress Outcome	Program Progress/outcome	Measure(s)	Target Performance Level	Frequency/timeline	Findings	Action Plan
SPO						
SPO						
SPO						

Appendix C General Education

According to VCCS policy 5.0.2.2 VCCS General Education Goals and Student Learning Outcomes, VCCS degree graduates will demonstrate competency in the following general education areas:

The College also assesses general education outcomes as described by VCCS policy and by SCHEV. SCHEV Reporting Cycle

General Education Outcome	Year to be Assessed
Scientific Reasoning	2010-11
Information Technology Literacy	2011-12
Oral Communication	2012-13
Critical Thinking	2013-14
Quantitative Reasoning	2014-15
Written Communication	2015-16

1. **Communication:** A competent communicator can interact with others using all forms of communication, resulting in understanding and being understood. Degree graduates will demonstrate the ability to:
 - a. understand and interpret complex materials;
 - b. assimilate, organize, develop, and present an idea formally and informally;
 - c. use standard English;
 - d. use appropriate verbal and non-verbal responses in interpersonal relations and group discussions;
 - e. use listening skills;
 - f. recognize the role of culture in communication.

2. **Critical Thinking:** A competent critical thinker evaluates evidence carefully and applies reasoning to decide what to believe and how to act. Degree graduates will demonstrate the ability to:
 - a. discriminate among degrees of credibility, accuracy, and reliability of inferences drawn from given data;
 - b. recognize parallels, assumptions, or presuppositions in any given source of information;
 - c. evaluate the strengths and relevance of arguments on a particular question or issue;
 - d. weigh evidence and decide if generalizations or conclusions based on the given data are warranted;
 - e. determine whether certain conclusions or consequences are supported by the information provided,
 - f. use problem solving skills.

3. **Cultural and Social Understanding:** A culturally and socially competent person possesses an awareness, understanding, and appreciation of the interconnectedness of the social and cultural

dimensions within and across local, regional, state, national, and global communities. Degree graduates will demonstrate the ability to:

- a. assess the impact that social institutions have on individuals and culture-past, present, and future;
- b. describe their own as well as others' personal ethical systems and values within social institutions;
- c. recognize the impact that arts and humanities have upon individuals and cultures;
- d. recognize the role of language in social and cultural contexts;
- e. recognize the interdependence of distinctive world-wide social, economic, geo-political, and cultural systems.

4. **Information Literacy:** A person who is competent in information literacy recognizes when information is needed and has the ability to locate, evaluate, and use it effectively. (adapted from the American Library Association definition) Degree graduates will demonstrate the ability to:

- a. determine the nature and extent of the information needed;
- b. access needed information effectively and efficiently;
- c. evaluate information and its sources critically and incorporate selected information into his or her knowledge base;
- d. use information effectively, individually or as a member of a group, to accomplish a specific purpose;
- e. understand many of the economic, legal, and social issues surrounding the use of information and access and use information ethically and legally.

5. **Personal Development:** An individual engaged in personal development strives for physical well-being and emotional maturity. Degree graduates will demonstrate the ability to:

- a. develop and/or refine personal wellness goals;
- b. develop and/or enhance the knowledge, skills, and understanding to make informed academic, social, personal, career, and interpersonal decisions.

6. **Quantitative Reasoning:** A person who is *competent* in quantitative reasoning possesses the skills and knowledge necessary to apply the use of logic, numbers, and mathematics to deal effectively with common problems and issues. A person who is quantitatively *literate* can use numerical, geometric, and measurement data and concepts, mathematical skills, and principles of mathematical reasoning to draw logical conclusions and to make well-reasoned decisions. Degree graduates will demonstrate the ability to:

- a. use logical and mathematical reasoning within the context of various disciplines;
- b. interpret and use mathematical formulas;
- c. interpret mathematical models such as graphs, tables and schematics and draw inferences from them;
- d. use graphical, symbolic, and numerical methods to analyze, organize, and interpret data;
- e. estimate and consider answers to mathematical problems in order to determine reasonableness;
- f. represent mathematical information numerically, symbolically, and visually, using graphs and charts.

7. **Scientific Reasoning:** A person who is competent in scientific reasoning adheres to a self-correcting system of inquiry (the scientific method) and relies on empirical evidence to describe, understand, predict, and control natural phenomena. Degree graduates will demonstrate the ability to:

- a. generate an empirically evidenced and logical argument;

- b. distinguish a scientific argument from a non-scientific argument;
- c. reason by deduction, induction and analogy;
- d. distinguish between causal and correlational relationships;
- e. recognize methods of inquiry that lead to scientific knowledge.

Appendix D

Nine Principles of Good Practice for Assessing Student Learning

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 multidimensional, 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, a firmer basis 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 — those 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 experiences along the way — about the curricula, teaching and kind of student effort that lead 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 is best fostered when assessment entails a linked series of activities undertaken over time. This linked series may mean tracking the progress of individual students, or 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 play an especially important role, but assessment's 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 principle 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 continually worked. 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 publics that support or depend on us to provide information about the ways in which our students meet goals and expectations. But that responsibility goes beyond the reporting of such information; our deeper obligation to ourselves, our students and society is to improve. Those to whom educators are accountable have a corresponding obligation to support such attempts at improvement.

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Appendix E

Examples of Scoring Rubrics

Example 1: A scoring rubric for a speech

	Outstanding	Very Good	Adequate	Needs Improvement
Opening Statement Does the opening statement grab the attention of the audience?				
Content of Speech Is the speech written in a logical order? Did you develop good sentences? Are ideas presented clearly?				
Persuasiveness Did you include three reasons to persuade? Was your persuasiveness effective?				
Closing Statement Do you have a closing statement? Was it an effective summing of speech?				
Posture Are you standing up straight during your speech?				
Eye Contact Are you looking at the audience occasionally?				
Voice Projection Are you speaking clearly and loudly?				

From Linda Suskie. When Coordinator of Assessment, Towson University

Example 2. A Rubric for a Research Paper

	Novice	Intermediate	Proficient	Distinguished
Voice and tone	Limited awareness of audience	An attempt to communicate with the audience	Evidence of voice and/or suitable tone	Evidence of distinguished voice and/or appropriate tone
Purpose	Limited awareness of purpose	An attempt to establish and maintain purpose	Focuses on a purpose	Establishes and maintains clear focus
Development of ideas	Minimal idea development, limited and/or unrelated details	Unelaborated idea development; unelaborated and/or repetitious details		Deep and complex ideas supported by rich, engaging and pertinent details; evidence of analysis, reflection and insight
References	Few references	Some references	Use of references indicates ample research	Use of references indicates substantial research
Organization	Random or weak organization	Lapses in focus and/or coherence	Logical organization	Careful and/or suitable organization
Wording and sentence structure	Incorrect and/or ineffective wording and/or sentence structure	Simplistic and/or awkward sentence structure	Controlled and varied sentence structure	Variety of sentence structure and length
Language	Incorrect or lack of topic and/or transition sentences	Simplistic and/or imprecise language	Acceptable, effective language	Precise and/or rich language
Grammar and format	Errors in grammar and format (e.g., spelling, punctuation, capitalization, headings)	Some errors in grammar and/or format that do not interfere with communication	Few errors in grammar or format relative to length and complexity	Control of surface features

Program: _____

Annual Assessment Report Template **Spring through Fall Year _____**

Instructions

- Report your findings below by placing the cursor in the box and typing. The box will expand as needed. You can also cut and paste your response from other documents.
- Include any supporting documentation at the end of this document, including your completed assessment templates for spring and fall semesters of prior year.
- Be sure to discuss your report with your dean.
- Please submit final report via email to OIE by February 15

Summary of Assessment Results

Please summarize the findings from your program assessments.

Implications of Your Assessment Results

As a result of your assessments, what recommendations do you have for changes or what changes in the program are you making? Program changes may refer to curriculum revision, faculty development, changes in pedagogy, student services, resource management, etc.

What changes in your future assessment plans or methods are you considering?

Supporting Documentation

Please include materials that illustrate your assessment work, these may include rubrics, memos, graphs, analyses, interim reports, survey results, etc. List below which documents you are submitting and then attach to this document or to email when submitting to OIE.

Exemplary Assessment

What, if any, aspects of your assessment that was especially illuminating, effective, surprising, or worth sharing with others?

Budget Considerations

Based on assessment findings, what additional resources are needed to implement changes to your program?