



*Tulsa Community College*

**Student Learning Outcomes Assessment  
Handbook and Resources**

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## The How-To's of Assessment

This portion of the Outcomes Assessment Handbook is a “how-to” manual of sorts, taking you through the steps of creating an Outcomes Assessment Plan. Each section is designed to give you some basic guidelines for each aspect of an Outcomes Assessment Plan. Although the suggestions below represent best practices in Outcomes Assessment, as well as the experiences of faculty workgroups from previous years, we know that some disciplines have specific needs which may conflict with these recommendations, so use the Handbook as only a beginning point.

### Faculty consensus

In the sections that follow, we provide tips and guidance to help you get the most out of your assessment effort. But no matter how you go about the process it ***is absolutely crucial that you take the time to work collaboratively to get consensus from all colleagues at each stage of the process.*** Remember, all faculty members teaching the course will be required to participate in the full-scale assessment, so getting them on board now will make the process easier later. If faculty can work together to create good outcomes now, assessment of the outcomes will be more meaningful.

### Student Learning Outcomes

Students who know what is expected of them in terms of their learning have a framework for learning and are more successful. Faculty who have a clear idea of what they want their students to learn are able to align their instructional activities to these outcomes. While outcomes identify several of the most important things students will be learning, students can learn and professors can emphasize other skills, concepts, etc. Outcomes Assessment allows us to systematically examine the alignment between student learning, instructional or institutional expectations, and instructional activities. To this end, we begin planning for Outcomes Assessment with Student Learning Outcomes.

### Where do we start?

Every course should have a set of college-wide common core expectations for student learning. These expectations are the most important things a student who passes the course should take away from any section of the course. While individual instructors may add to this course, there should be a shared understanding of the core skills and knowledge upon which the course is based. It is these expectations which should be reflected on each course syllabus and which should be used to determine Student Learning Outcomes for the Outcomes Assessment process.

**Note:** If the discipline does not have a set of articulated Student Learning Outcomes for the course, the development of college-wide common core Student Learning Outcomes may be one of the first outcomes of this process. The outcomes should become a standard part of the syllabus.

### What makes a good learning outcome?

Generally speaking, good learning outcomes are:

- learner centered
- key to the course's mission
- meaningful for faculty and students
- representative of a range of thinking skills
- measurable

First, and most importantly, good learning outcomes focus on **what students can do** instead of the effort we put into teaching them. Second, college-wide outcomes must be **essential to the course's mission**, something that everyone teaching the course agrees is important. Avoid outcomes that are idiosyncratic or tied to a particular instructor's approach to a course. Third, design outcomes that are **meaningful for faculty and students**. If you cannot explain *why* a certain outcome is important, it probably isn't very meaningful. Finally, outcomes often reflect a **range of thinking skills**, from low level identification to higher level application of knowledge

or skills. Good outcomes **are measurable** in some way; they communicate what student learning will be evaluated in the course. Often courses will have two levels of outcomes: some broader based outcomes which reflect higher order thinking skills and broad topics, and some more narrow, lower level thinking skills outcomes which are essential to reaching the broader outcomes.

The Student Learning Outcomes should be included as a standard part of the course syllabus.

Student Learning Outcomes should:

- be written in terms of what the student will be able to do at the end of the course
- use active verbs
- reflect measurable standards or reflect the basic knowledge and skills that the student will be held accountable for
- reflect a combination of higher order thinking skills and supporting or enabling skills (see Bloom's Taxonomy in Appendix)

### **Discipline Example Student Learning Outcomes**

**ART** Students will be able to distinguish form and content in 2-dimensional and 3-dimensional works of art.

**BIOL** Students will be able to explain the key elements in the theory of organic evolution, cite major evidence that supports Darwin's theory of natural selection, and explain the role of natural selection in the development of chemical resistance in microbes, viruses, plants and animals.

**ENGL** Students will be able to apply principles of logical argument and persuasion in their writing.

**MATH** Students will be able to demonstrate an understanding of the Central Limit Theorem and sampling distributions and use these to estimate a population parameter.

When defining Student Learning Outcomes to assess, it is tempting to take the easy route and think only in terms of learning outcomes that represent lower order skills because they will be simpler to evaluate. Instead, concentrate on the skills and knowledge which are essential for a student to be considered competent at the end of the semester. While some lower order types of learning outcomes may be essential to reaching higher level outcomes, make sure that you define a range of outcomes which reflect higher order, complex application tasks in addition to any essential supporting learning outcomes which may reflect lower order thinking skills.

### **Lower Order vs. Higher Order Thinking Skills**

While basic recall of facts is important to any course, your assessment results will be more meaningful if you have chosen a more complex skill. Moreover, it will likely reflect what is truly important in your course. Often facts are important because we want students to be able to do something with that information.

Student Learning Outcomes (SLO), which reflect higher order thinking skills, use action verbs that are observable and measurable, as well as ones that reflect higher order skills. Examples of such verbs are solve, design, write, compare, apply, decide, draw, persuade, investigate, and evaluate.

Refer to the following possible outcomes for an information technology course:

- Students will be able to correctly summarize the key differences between open and closed source software development models.
- Students will be able to evaluate the strengths and weaknesses of open and closed source software development models.

While the first outcome is certainly easier to achieve, the second one better represents what students would have to do with the information in the real world. You will get more useful information about student learning with the second SLO.

### **How do we choose which Student Learning Outcomes to assess?**

To select Student Learning Outcomes to assess for this process, consider the following questions:

1. What are the 3 or 4 most crucial outcomes for the course?

2. Are there topic areas where students struggle on a regular basis?
3. Do you have questions about a particular area of student achievement?
4. Are there outcomes which reflect skills or knowledge students will need in future courses or careers?
5. Are there outcomes which reflect General Education and discipline or program goals?

Identifying outcomes which reflect any of these characteristics would be a place to start.

Ultimately the outcomes you select:

- should reflect higher order thinking skills (**application of knowledge or skills**);
- be agreed upon as essential and core to the course (addressed in **every section** of the course); and
- **be meaningful** to the discipline.

### **How do we include a General Education competency in our Student Learning Outcomes?**

One or two of your outcomes must reflect the assigned General Education goals and objective. Your first step will be taking the General Education goals and objective and choosing an outcome that is aligned to it, but is also more specific to how students are expected to use that skill in your course.

Many outcomes reflect one or more of the goals; you will select just one for each General Education competency you are scheduled to assess. The General education goals are extremely broad, expressing very general skills students are expected to have after taking General Education courses. The outcome you use will be specific to the course.

Each of the following ENG 1103 Student Learning Outcomes reflects the General Education Critical Thinking competency:

- Students will be able to critically evaluate a selected argument using the formal elements of argument.
- Students will be able to find and identify any flaws in logic and reasoning that weaken a given argument text.
- Students will be able to analyze and evaluate an author's use of rhetorical techniques and their effects on readers.

**Note:** Courses that are not part of the General Education Outcomes Assessment process, but are recognized as General Education, or naturally support any of the General education goals, are encouraged to assess Student Learning Outcomes that reflect General education goals as part of the Academic Area Outcomes Assessment.

### **Five Key Things to Remember About College-wide Common Core Student Learning Outcomes for a Course**

1. Select outcomes to assess because they're meaningful, not because they're easy to measure.
2. Make sure your outcomes are expressed in terms of how students are impacted by your course.
3. Make sure that your common core outcomes reflect a faculty consensus in your discipline and not just the views of a few individuals.
4. Where possible, have your outcomes reflect higher order thinking skills.
5. Make sure that all faculty and students involved with the course are familiar with the outcomes.

### **Supporting Student Activities**

To get the most meaningful results, students should be given opportunities to practice achieving an outcome before it is assessed. If faculty believe that a stated outcome is important, then logically they should have supporting activities in their course that help students achieve the outcome. For example, if the science faculty believes that writing effectively is an important skill in their courses, it should include writing assignments. As the American Association for Higher Education points out in number four of its "Nine Principles of Good Practice for Assessing Student Learning," Assessment requires attention to outcomes but also and equally to the experiences that lead to those 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. These supporting activities allow students opportunities to practice the outcome and receive feedback on their performance.

Supporting activities will likely vary from instructor to instructor, and that's as it should be. What is essential is that every instructor is able to point to academic experiences that adequately prepare his or her students to successfully achieve the desired outcome.

### **How do we align Student Learning Outcomes and supporting student activities?**

For this part of the Plan, you should identify class activities that help students achieve the Student Learning Outcome, according to faculty who teach the course. If this list is limited, you should have a discipline discussion to brainstorm ways in which the Student Learning Outcome could be supported instructionally.

The following are examples of activities that might be used to support an Information Literacy outcome:

- "Students will critically evaluate websites for possible use in an academic research paper."
- Students take Tulsa Community College LRC's tutorial "Evaluating Information on the World Wide Web" and submit their quiz results to the instructor.
- In a computer classroom the instructor demonstrates the process of finding websites for a given research topic, then has students work in pairs to find one credible site. After independent work time, instructor pulls up selected sites from the student pairs, asking them to justify their choices. Instructor provides feedback on the chosen sites. Instructor opens a discussion with the class about their previous experiences using the Internet for research, guiding the class to general principles about what makes a good site for academic research.

This is not an exhaustive list; it is merely a list of possible instructional activities faculty might realistically use as part of regular instruction to facilitate student achievement of the Student Learning Outcome.

### **Assessment Methods and Instruments**

Choose an activity to assess and develop a common means of assessing the activity. The assessment method is the general type of tool you will use to assess the Student Learning Outcome. The instrument is the actual assignment, quiz, exam, or project you will use to complete the assessment. First, you should determine what method you want to use, and then, you will develop the actual tool.

### **How do we choose an assessment method and develop an assessment instrument?**

Common assessment methods include test questions (multiple choice, short answer, essay), formal writing assignments (essays, research papers, reaction/review papers), performances, and portfolios. You will need to consider a variety of factors as you choose your method, including alignment with the outcome, ability to get faculty consensus, and ease of scoring. Sometimes, it is difficult to separate the method from the instrument; however, it is useful to step back at this point and consider the method separately from the actual assignment. Considering the general approach to the assessment will allow you to determine the most useful method and develop a useful assessment instrument. For example, a method for assessment could be a portfolio, and within the portfolio, there may be an instrument for measurement such as an assigned essay, the method and instrument are different.

### **Alignment**

Probably the most important consideration when choosing or developing an assessment method is whether it is aligned with the Student Learning Outcome. In other words, is what you're asking the students to do in your assessment going to provide you with solid evidence about whether or not they have achieved the desired outcome? If your outcome deals with a student's ability to make a persuasive speech, a research paper is not a good instrument to measure this outcome. If you are assessing a quantitative reasoning outcome which speaks to students' ability to interpret some particular statistical information, simply asking them to calculate something correctly will not tell you whether they've achieved that outcome.

Aligning outcomes with methods may seem like an obvious recommendation, but it's not uncommon to see a disconnect between the outcome and the assessment instrument when workgroups are in the early stages of

writing their Outcomes Assessment Plans. In some instances, workgroups end up revising their outcomes after working on their assessment instrument. That's okay, as long as everything aligns before you pilot.

### **Ease of scoring**

We all know that writing good multiple choice questions takes a lot of time, but scoring them is fast. Writing a good essay question is less time-consuming than grading a stack of student essays. With everything we do, we need to consider how much time it will take; you should consider the time involved in scoring the instrument and reporting the data. When choosing an assessment method you must weigh time against meaningful results. It may be challenging to find the balance, but the efforts of going through an Outcomes Assessment Plan won't be worth much if you cannot use the results to make decisions about the strengths and weaknesses of your course. The next main section will discuss scoring in greater depth.

### **Assess two (or more) Student Learning Outcomes with one method**

One way to balance meaningful results with time spent scoring is to use one assessment instrument to measure more than one outcome. This technique has been used successfully by many of the workgroups participating in the General Education Outcomes Assessment process. This approach works especially well if you have both skill- and knowledge-based outcomes to assess. For example, the workgroup for an environmental biology course tasked with assessing the General Education Goal, "Effective Communication" and the following two course-specific outcomes:

- students will be able to critically analyze articles on environmental issues, and
- students will be able to describe major ecological principles and relate these principles to the evaluation of current environmental problems

You might choose as an **assessment instrument** a writing assignment that combines the first two outcomes. Perhaps they would design a paper assignment that asks students to analyze a given article about an environmental problem, applying major ecological principles to the problem. The paper would then be scored on three levels: how well the paper was written, how well the student analyzed the given article, and how well the student was able to relate ecological principles to the environmental problem addressed in the article. In many ways, this approach is more authentic to student learning because it asks students to integrate knowledge and skills.

Assessing each outcome alone certainly works, but combining them gives us a better picture of how students perform in a more "real world" setting. When scoring an assessment which assesses two or more outcomes, you will assign separate scores for each outcome as well as having an overall score.

### **Writing the Assessment Instrument**

Once you've chosen your assessment method (exam, paper, etc.) it's time to create the actual instrument that will be handed out to students. We all have experience with writing assessment instruments; it's one of the major tasks we have as teachers. Creating an instrument for use in multiple sections does require an extra level of scrutiny. Again, you need to make absolutely certain that the assessment instrument you use measures how well the students meet the expected outcomes, rather than how well students are meeting an objective particular to your class. Additionally, make sure the instructions to the student clearly explain the expectations for the assignment.

Here are the four easiest ways to ensure a quality instrument for Outcomes Assessment:

- Make sure the assignment or exam questions are directly aligned with the outcomes.
- Write directions that are clear to people who have never seen the instrument before and that clearly articulate the expectations for completing the assignment.
- Pilot the instrument and ask for feedback from the students and faculty who used the instrument.
- Ask the Learning Effectiveness Council for help

### **Key Things to Remember about Developing an Assessment Method and Instrument**

1. Consider the method separately from the actual instrument to find the best approach.
2. Think about the ease of scoring and alignment with the learning outcomes to help determine the best assessment approach.
3. Consider assessing two or more outcomes with one assessment method/instrument.
4. Make sure the instructions for the assessment instrument clearly lay out the expectations for the student and faculty who will use the assessment instrument.

### **Scoring Tools**

“Consistency, consistency, consistency” is the mantra when multiple individuals are being asked to score a common assessment, as is the case in the College’s Student Learning Outcomes Assessment process. If the assessment instrument consists of a set of objective questions each with only one right or wrong response, e.g., multiple choice, then a simple answer key distributed to all faculty who will be administering the exam will do the trick. If, on the other hand, the instrument involves open-ended types of questions or assignments, such as essays, research papers or student performances, which by nature require some subjectivity in their scoring, there are some things you can do to structure a scoring scheme that will maximize consistency among faculty administering the assessment.

## **How do we score the assessment?**

### **Identify the dimensions of the outcome**

The first step in setting up scoring procedures for non-objective assessments is to identify the dimensions for each outcome; i.e., the key broad aspects or areas of student performance on which the assessment will be scored. Here are two examples from previous cycles of the General Education Goals Assessment process that show how outcomes’ dimensions can be defined. In the following example, the General Education goal is effective communication and the dimensions used by the workgroups follow.

### **Communicating effectively**

- Mechanics
- Development
- Style

### **Short answer assessments**

In the case of assessments made up of open-ended short answer questions, it is critical that a clear answer key of acceptable right answers for each question be developed. During the full implementation of the assessment, all instructors must then score their students based on this common answer key, though they are free to grade additional answers as correct in determining their own course grades.

### **Longer, open-ended assessment instruments**

For scoring consistency with longer open-ended assignments such as essays, research papers, or performances, a rubric should be developed. A rubric is a criterion based scoring tool that specifies levels of achievement (e.g. exemplary, satisfactory, unsatisfactory) for each dimension of the outcome. As part of the rubric, criteria are provided that describe what constitutes the different levels of achievement. For example, the rubric that is being



used to score effective writing with dimensions of mechanics, style, and development would provide the criteria that describe what constitutes exemplary, satisfactory, and unsatisfactory student work in the areas of for writing mechanics, for writing style, and for writing development. Although only three levels of achievement are specified in the above example, rubrics can have any number of levels that is manageable and makes sense for the given assessment instrument. However, from three and five levels generally make the most sense. There are many websites that provide rubrics. The following website at Winona State University offers a varied selection of rubrics: <http://www.winona.edu/AIR/rubrics.htm>.

### **More about rubrics**

There are two major types of rubrics: holistic and dimensional. Dimensional is also known as a primary trait rubric. Both detail the particular qualities that separate excellent from poor student work along a spectrum, but the first groups the dimensions together, while the second keeps them separate.

The holistic rubric looks at the instrument as a whole; students receive one overall score based on a pre-determined scheme used by everyone. The dimensional rubric yields sub-scores for each dimension, as well as a cumulative score which is the sum, either weighted or un-weighted, of the dimensional scores.

Each type of rubric has its strengths and weaknesses. Holistic rubrics allow you to look at a student's overall performance and often correspond better to the grade that pops into our heads immediately after you finish looking at the student work. The dimensional rubric provides more information about what's working and what's not. For example, perhaps students are doing a good job with learning the mechanics of writing, but not so well with learning writing development. A dimensional rubric will provide information with this level of detail, whereas a holistic rubric will not. Regardless of the type of rubric, it is important that it be shared with students well before the assessment is administered. It is unreasonable to expect students to perform well on an assessment if they don't have a clear understanding of the standards being used to evaluate it.

### **Assessments based on objective questions**

Even if you are using a set of objective questions you may find it helpful to group subsets of these questions together that reflect an assessment of a specific dimension of your outcome. Doing so might be particularly useful in situations where the assessment includes a large number of objective questions. Without grouping the questions to reflect key dimensions of the outcome being assessed, faculty participating in the assessment will have to enter a score for each question in the assessment on a scoring spreadsheet, potentially creating a significant data entry burden. By grouping, say, five questions within a dimension, faculty could enter one number for the dimension, i.e., the number correct out of the 5 questions, instead of entering a separate student score for each of the five questions. There is, of course, a tradeoff in doing this: the discipline will get back less information from the data analysis, so this is a consideration that needs to be carefully thought out.

### **5 Key Things to Remember about Scoring Tools**

1. It is imperative that the discipline talk about the assessment instrument and determine what kind of student performance qualifies as successful.
2. When using objective measures (e.g. multiple choice tests), consider grouping questions which reflect a specific aspect of the outcome.
3. When using rubrics, be sure that students see the rubric which will be used to evaluate the assignment before they complete it.
4. When using rubrics, norming is really important.
5. Be sure to get feedback after the pilot on how well the scoring tool worked with the assignment and whether faculty feel that it reflects successful performance effectively.

## Assessment Glossary

**Action Plans:** Specific changes that a given instructor or program plans to implement based on assessment results. (MUAP)

**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. (HLC/NCA)  
Assessment is an ongoing process aimed at understanding and improving student learning. It involves making our expectations explicit and public; setting appropriate criteria and standards for learning quality; systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards; and using the resulting information to document, explain, and improve performance. (Angelo, 1995)

**Assessment Process:**

- Measurement: The systematic collection of data on student achievement.
- Assessment: The analysis of data to determine results
- Evaluation: Using results to make recommendations for change.

**Benchmark:** A detailed description of a specific level of student performance expected of students at particular ages, grades, or development levels. Benchmarks are often represented by samples of student work. A set of benchmarks can be used as "checkpoints" to monitor progress toward meeting performance goals. (CRESST)

**Course Level of Assessment:** Vantage point of the assessment plan that inquires into the quality of learning within a course.

**Course Performance Objectives:** Specific behaviors that demonstrate students have met course requirements.

**Criteria:** Guidelines, rules, characteristics, or dimensions that are used to judge the quality of student performance. Criteria indicate what we value in student responses, products or performances. They may be holistic, analytic, general, or specific. Scoring rubrics are based on criteria and define what the criteria mean and how they are used. (CRESST); Performance criteria help assessors maintain objectivity and provide students with important information about expectations, giving them a target or goal to strive for. (New Horizons for Learning)

**Criterion-referenced assessment:** An assessment where an individual's performance is compared to a specific learning objective or performance standard and not to the performance of other students. Criterion-referenced assessment tells us how well students are performing on specific goals or standards rather than just telling how their performance compares to a norm group of students nationally or locally. In criterion-referenced assessments, it is possible that none, or all, of the examinees will reach a particular goal or performance standard. (CRESST)

**Developmental Education:** Curricular programs designed to prepare students for college-level work in reading, writing and math.

**Direct Measures of Learning:** Evidence about student learning based on student performance that demonstrates the learning itself. Can be value added, related to standards, qualitative or quantitative, embedded or not, using local or external criteria. Examples are written assignments, classroom assignments, presentations, test results, projects, logs portfolios, and direct observations. (Leskes, 2002)

**Discipline:** A branch of knowledge, especially one studied in higher education.

**Evaluation:** The setting, or appraisal, of a value. Evaluation has to do with the rendering of a value judgment. Measurement merely positions something along a continuum, whereas evaluation posits a judgment based on a given position. (MUAP)

**Formative Assessment:** The gathering of information about student learning during the progression of a course or program to improve the learning of those students. Example: reading the first lab reports of a class to assess whether some or all student in the group need a lesson on how to make them succinct and informative. (Leskes, 2002) – contrast with summative assessment.

**Gateway Courses:** Those courses that address the General Education Goals

- Critical Thinking: Mathematics--College Algebra??
- Effective Communication: Composition II, Speech??
- Engaged Learning: Social science course(s)
- Technological Proficiency: Exam/CSCI 1203 Computer Concepts and Applications/Equivalent or advanced computer course

**General Education Assessment:** Assessment that measures the institution-wide, general education goals agreed upon by the faculty. General education assessment is more holistic in nature than program outcomes assessment because general education goals are measured across disciplines, rather than just within a single discipline. (MUAP) – TCC’s general education goals include critical thinking, effective communication, engaged learning and technological proficiency.

**General Education Goals:** Four expectations required of all TCC students, which are tied to the College’s mission and goals. They include Critical Thinking, Effective Communication, Engaged Learning, and Technological Proficiency.

**General Education Level of Assessment:** Vantage point of the assessment plan that inquires into the learning expectations of all TCC students.

**Indirect Measures of Learning:** Evidence about how students feel about learning and their learning environment rather than actual demonstrations of outcome achievement. Examples include surveys, questionnaires, interviews, focus groups, and reflective essays. (Eder, 2004)

**Institutional Effectiveness:** Planning and Institutional Research Office/Department?? process to review program viability.

**Learning Effectiveness Council:** Faculty-controlled process to investigate the quality of student learning at TCC

**Norm-referenced assessment:** An assessment where student performance is 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. Students, schools, districts, and even states are compared or rank-ordered in relation to the norm group. The purpose of a norm-referenced assessment is usually to sort students and not to measure achievement towards some criterion of performance. Most standardized achievement tests are referred to as norm-referenced. (CRESST)

**Outcomes:** Operational statements describing specific student behaviors that evidence the acquisition of desired knowledge, skills, abilities, capacities, attitudes or dispositions. Learning outcomes can be usefully thought of as behavioral criteria for determining whether students are achieving the educational objectives of a program, and, ultimately, whether overall program goals are being successfully met. (Allen, Noel, Rienzi & McMillin, 2002)

**Portfolio Assessment:** A portfolio becomes a portfolio assessment when (1) the assessment purpose is defined; (2) criteria or methods are made clear for determining what is put into the portfolio, by whom, and when; and (3) criteria for assessing either the collection or individual pieces of work are identified and used to make judgments about performance. (CRESST)

**Program:** A program leads to a certificate or degree.

**Program Goals:** Student learning expectations for curricular programs.

**Program Level of Assessment:** Vantage point of assessment plan that inquires into the quality of learning within programs as well as application of the appropriate general education goals.

**Program Objectives:** Specific behaviors that demonstrate students have met program goals.

**Qualitative measurement:** Collecting information that is not numeric in nature. Qualitative data typically consist of words while quantitative data consist of numbers. These words are often assigned to categories, which can then be manipulated to help achieve greater insight into the meaning of the data and to help examine specific hypotheses. Some sources of qualitative data may include written documents [e.g., student assignments], interviews [e.g., focus groups], case studies [e.g., portfolios] and open-ended survey questions and/or questionnaires. (Trochim, 2000); The only numerical operation that can be conducted on qualitative variables is calculation of the frequency or percentage in each category. (Bailey, 1994) – In student learning assessment, qualitative data are often represented by a quantitative value by comparing the data to a scoring rubric in which the value is assigned based on a standard set of performance criteria.

**Quantitative measurement:** Collecting information that is numeric in nature. Quantitative data is that in which the values of a variable differ in amount [in numeric terms] rather than in kind [in descriptive terms]. (Bordens, 1997); This data can be analyzed using quantitative methods and generalized to a larger population. (Leskes, 2002)

**Rubric:** Specific sets of criteria that clearly define for both student and teacher what a range of acceptable and unacceptable performance looks like. Criteria define descriptors of ability at each level of performance and assign values to each level. Levels referred to are proficiency levels which describe a continuum from excellent to unacceptable product. (System for Adult Based Education Support)

**Student Learning Institute:** Annual forum in which Faculty present on assessment or share assessment successes.

**Summative assessment:** The gathering of information at the conclusion of a course, program or undergraduate career to improve learning or to meet accountability demands. When used for improvement, impacts the next cohort of students taking the course or program. Example: examining student final exams in a course to see if certain specific areas of the curriculum were understood less well than others. (Leskes, 2002) – contrast with formative assessment.

**Value-added:** The increase in learning that occurs during a course, program, or undergraduate education. Can either focus on the individual student (how much better a student can write, for example, at the end than at the beginning) or on a cohort of students (whether senior papers demonstrate more sophisticated writing skills – in the aggregate – than freshman papers). Requires a baseline measurement for comparison. (Leskes, 2002)

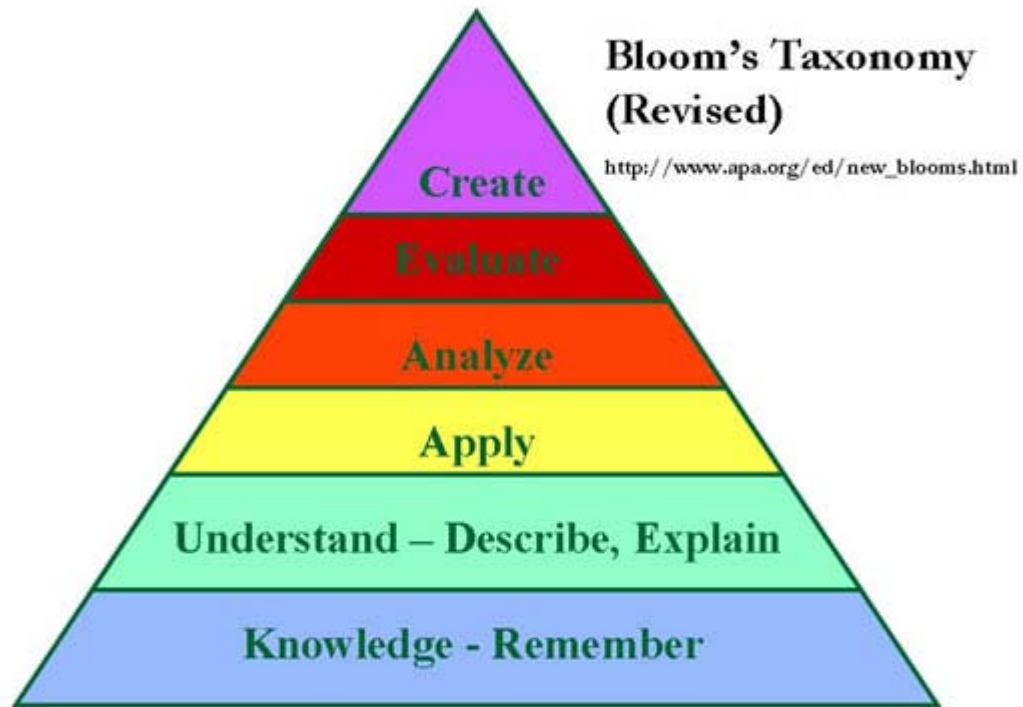
## AAHE's 9 Principles of Good Practice for Assessing Student Learning

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 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 -- 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 experience 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 may mean tracking the process 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 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 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.

## Assessment of Student Learning: Introduction to Bloom's Taxonomy

Historically, discussions about student learning have been guided by a taxonomy of learning that has come to be known as **Bloom's taxonomy** (Bloom & Krathwohl, 1956). This taxonomy is a hierarchical structure representing six levels of thinking and learning skills that range from basic learning objectives such as knowledge of content through higher-order learning such as synthesis, evaluation, and creativity. Bloom's taxonomy formed the basis for early work on the development of instructional objectives for classes and curricula.



Based on an APA adaptation of Anderson, L.W. & Krathwohl, D.R. (Eds.) (2001)

More recently, emphasis has shifted from **instructional objectives**, which describe what instructors do and the content of material presented during classroom instruction, to **student learning outcomes**, which describe what students can do as a result of their educational experiences. This change in emphasis is associated with changes in the language used and changes in expectations about instructional style. Instructional objectives were typically described as things (knowledge, understanding, content, facts) that could be delivered during a lecture or presented in written text. In contrast, student learning outcomes are described using concrete verbs (behaviors that can be observed in the student) rather than nouns. Along with this change in language is a change in emphasis on classroom instructional activity. Although passive activities such as lecturing can be efficient methods for transmitting basic facts and knowledge, active learning strategies that engage students in learning are expected to encourage the development of higher-order thinking skills.

<b>Comparison of Bloom's Taxonomy for Learning Objectives and Student Learning Outcomes</b>	
<b>Learning Objective Nouns</b>	<b>Learning Outcome Active Verbs</b>
Knowledge	Memorize Recite Name Identify
Understanding	Describe Explain Classify Discuss
Application	Apply Choose Employ Operate Practice
Analysis	Compare Contrast Calculate Test Analyze
Synthesis	Construct Compose Create Design Propose
Evaluation	Argue Assess Defend Judge Evaluate

Note: A useful collection of action words for Bloom's taxonomy can be found at <http://uwf.edu/cutla/SLO/ActionWords.doc>. The careful reader will note that the same action words appear at multiple levels in the Bloom taxonomy. The sophistication of learning represented by a given action word can depend on the context of the task as well as the action word used. For example, although the student learning outcomes *Compute the average of ten values* uses the same action word as *Compute the expected utility for a decision*, the context of the tasks clearly represent differing levels of expertise.

In a well-designed curriculum, students will develop basic learning skills and acquire foundation knowledge in their earliest courses. As they move to more advanced courses, they develop higher-order learning skills and more advanced understanding of the discipline. This developmental change can be described in terms of the increasingly sophisticated behaviors represented at higher levels in Bloom's taxonomy.



An important consequence created when Bloom's taxonomy based on nouns is revised to describe student learning outcomes in terms of concrete actions is that these new descriptions can be used to create direct measures for curriculum assessment. The nouns used in the original taxonomy were frequently abstract concepts such as *understanding* that were not directly measurable. Similarly, passive verbs such as *be exposed to* are not helpful when developing direct measures. However, concrete action words such as *remember* and *design* can be used to operationally define direct measures that might be useful in an assessment plan.

## Oral Communication Skills Rubric Example

Student \_\_\_\_\_ Course \_\_\_\_\_ Date \_\_\_\_\_

**Intended Outcome: the student will use clear and concise communication in the oral form.**

Performance Area	Rating = 4	Rating = 3	Rating = 2	Rating = 1	Score
Organization	Presenter follows logical sequence and provides explanations/elaboration.	Presenter follows logical sequence, but fails to elaborate.	Presenter does not follow logical sequence (jumps around in presentation).	There is no logical sequence of information.	
Eye Contact	Presenter seldom returns to notes, maintaining eye contact with audience throughout the presentation.	Presenter maintains eye contact with audience most of the time, but frequently returns to notes.	Presenter reads most of report, but occasionally makes eye contact with audience.	Presenter reads entire report, making no eye contact with audience.	
Delivery	Presenter speaks clearly and loud enough for all in audience to hear, makes no grammatical errors, and pronounces all terms correctly and precisely.	Presenter speaks clearly and loud enough to be heard by most in audience, makes relatively few grammatical errors, and pronounces most terms correctly.	Presenter's voice is relatively clear, but too low to be heard by those in the back of the room. Presenter makes several major grammatical errors, and mispronounces some terms.	Presenter mumbles, mispronounces terms, and makes serious and persistent grammatical errors throughout presentation. Presenter speaks too quietly to be heard by many in audience.	
Total					
Overall Score = Total/3					

## FORMS AND EXAMPLES

## Form A

### Program/Discipline Status

Assessment Cycle: 2010-2011

Program/Discipline Name:

Program/Discipline Goal:

Program/Discipline Outcomes (measurable/observable):

#1.

#2.

#3.

Program/Discipline outcome measurement tool: (portfolio, assignment, test question, service learning experience, etc.)

#1.

#2.

#3.

Explain which of the following general education goals this outcome supports:

1. Critical Thinking--insert appropriate # above or other outcome
2. Effective Communication-- insert appropriate # above or other outcome
3. Engaged Learning--insert appropriate # above or other outcome
4. Technological Proficiency--insert appropriate # above or other outcome

**For information about currently available data, contact the AtD Data Team or the Office of Planning and Research**

## Form A

### Program/Discipline Status

Assessment Cycle: 2010-2011

Program/Discipline Name: Physical Therapist Assistant Program

Program Goal:

Program/Discipline Outcomes (measurable/observable):

- #1. Ninety percent of the students completing the program will pass the computerized national licensure examination .
- #2. Ninety-five percent of Tulsa area employers will rate TCC PTA graduates as safe and ethically sound with a score of 4/5 or higher on the Employer Survey.
- #3. Ninety percent of physical therapist assistant students will be scored by area clinical instructors at entry level on the clinical performance instrument by the conclusion of Clinical Practice III.

Program/Discipline outcome measurement tool (portfolio, assignment, test question, service learning experience, etc.):

- #1. National Licensure Examination sponsored by the Federation of State Boards of Physical Therapy
- #2. Employer Survey (Questions #1-6, 8 & 9) which is sent to employers of graduates every other year.
- #3. APTA Clinical Performance Instrument which is completed by area clinical instructors at the conclusion of each clinical education experience.

Program/Discipline Outcome(s) that address TCC General Education Goals:

1. Critical Thinking—Outcome #1
2. Effective Communication—Outcome #2
3. Engaged Learning—Outcome #3
4. Technological Proficiency—Outcome #1

**For information about current available data, contact the AtD Data Team or the Office of Planning and Institutional Research**

**Form B**

**Program/Discipline Assessment Summary**

Assessment Cycle:

Program/Discipline:

Associate Dean:

Examples are given below for program assessment in the Marketing Program:

<b>Program Goal</b>	<b>Common Criteria and Scoring Method</b>	<b>Classes Selected to Assess</b>	<b>Number of Students Assessed</b>	<b>Common Assessment Activity</b>	<b>Data Gathering Process</b>	<b>Results</b>

**Form B**

**Program Assessment Summary Example**

Assessment Cycle: 2010-2011

Program: Marketing

Associate Dean:

Examples are given below for program assessment in the Marketing Program:

<b>Program Goal</b>	<b>Common Criteria and Scoring Method</b>	<b>Classes Selected to Assess</b>	<b>Number of Students Assessed</b>	<b>Common Assessment Activity</b>	<b>Data Gathering Process</b>	<b>Results</b>
Students will demonstrate mastery of web design and marketing principles on the Internet	Faculty-developed Criterion-referenced rubric with mastery level at 80%	MKTG 1433: Marketing Internship III	25	Portfolio of self-selected, best work addressing each criterion	Upon entry into the program, students will be given the program outcomes criteria which align assignments in courses required in the program that could meet the criteria. Students may select their best work which demonstrates their mastery of the criterion.	Students scoring at mastery level:  Criterion One—98%;  Criterion Two—78%  Criterion Three—85%
Students will demonstrate mastery of negotiation skills	Presentation skills with 80% mastery level	MKTG 1313: Sales and Negotiations	20	Verbal case study	MKTG 1313-Sales and Negotiations develops sales presentations and closing strategies with special emphasis on developing negotiation skills.	Students scoring at mastery level:  Criterion One—75% Criterion Two—88%

**Form C**  
**Outcomes Recommendation Form**

Assessment Cycle: 2010-2011

Program:

Associate Dean:

Results/Recommendations:

Provided to:

- Curriculum Committee *for curricular change(s)*
- Academic Council *for inter-divisional change(s)*
- Faculty Development Sub-Council *for instructional change(s)*
- Other
- No action required



**Form C**  
**Outcomes Recommendation Form**

Assessment Cycle: 2007-2008

Program: Physical Therapist Assistant Program

Associate Dean: Jim Pickens

Results/Recommendations:

Criterion: Physical therapist assistant students will rate TCC student services at or above 4/5 on the graduate survey, questions #15 & 16.

Results: #15 M=4.04  
#16 M=3.78

Action Taken: Had the current group of students participate in a Focus group to tease out which of the students services were problematic. The two areas that created the most dissatisfaction was the cafeteria and financial aid. The Dean of Student Services was given the results of the Focus Group to use for quality improvement.

Criterion: Ninety percent of students will pass the computerized national licensure examination.

Results:	Class of 2004	88%
	Class of 2005	89%

Actions Taken: We examined the academic profiles of the students who have struggled with the examination over the last several years. The most common issue was that these students had routinely made C's throughout the program in the non-clinical courses. Even those who had to repeat a course, tended to make a C the second time around. The old policy only required a 2.0 GPA in all PTA classes and only a minimum grade of C on courses being repeated. As a result, two changes will be recommended:

1. If a course is repeated, the student must earn a B the second time
2. Students must maintain a GPA of 2.75 on all PTA classes every semester.

Provided to:

Curriculum Committee *for curricular change(s)*

Academic Council *for inter-divisional change(s)*

Faculty Development Sub-Council *for instructional change(s)*

Other

No action required

**FORM D**  
**Course Outline**

Course Name and Number:

Department/Division:

Semester(s) Offered:

Contact/Credit Hours:

Delivery Method(s):

Course Description:

CEP Description:

*Link to OSRHE Course Equivalency Project course descriptions: <http://www.okhighered.org/student-center/transfer-stdnts/2009-10/cep-appendix09-10.pdf>*

Common course outcomes (measurable/observable):

Outcome(s) within course that addresses:

Critical Thinking--

Effective Communication--

Engaged Learning--

Technological Proficiency--

Assessment methods:

## FORM D

### Course Outline Example

**Course Name and Number:** *Speech 1113*

**Department/Division:** *Communications*

**Semester(s) Offered:** *All*

**Contact/Credit Hours:** *3 credit hours*

**Delivery Method(s):** *classroom, blended, and on line*

**Course Description:** *An introductory course in oral communications; emphasis is on improving applied communication skills. Special attention is given to critical thinking skills and the anatomy of the communication process: audience analysis, research, organization, logic, ethical use of evidence, delivery, and listening. Required for B.A. and B.S. degrees in most professional majors; i.e., Business, Law, Education, Medicine, English. Lecture 3 hours, no laboratory.*

**CEP Description:** *SP 020 Introduction to Communication (Performance). Principles and techniques of preparing for, participating in, and evaluating communication behavior at the interpersonal and public levels.*

**Common course outcomes (measurable/observable):**

1. *Students will effectively demonstrate skills in organizing and preparing extemporaneous oral presentations.*
2. *Students will demonstrate appropriate skills in delivering extemporaneous oral presentations.*
3. *Students will demonstrate critical thinking skills by applying knowledge and understanding in the development of oral assignments for different contexts, situations and/or specific endeavors.*

**Outcome(s) within course that address:**

- *Critical Thinking—(See #3 above)*
- *Effective Communication—(See #s 1 -3 above)*
- *Engaged Learning—(See #2 above)*
- *Technological Proficiency—not required by all instructors*

**List of Learning Assessment Methods Used:**

- *Oral presentations*
- *Powerpoint presentations*
- *Written assignments*
- *Exams*
- *Small-stakes written exams*
- *Graded group activities*
- *Peer critiques*
- *Video performance feedback*
- *Self-assessment*

**Assessment Forms Due Dates  
Academic Year 2010-2011**

<b>Form</b>	<b>Recipient(s)</b>	<b><u>Form Due Dates</u></b>	<b>Actions</b>
Form A Discipline/ Program Outline	UT and WD Deans	August- December 2010	Fall 2010 UT/WD Deans Convene Discipline Meeting ADs and faculty review D/P goals and outcomes
Form B Discipline/ Program Assessment Summary	UT and WD Deans	Hold for fall data results	Spring 2011 Data gathering and analysis
Form C Discipline/ Program Recommendation(s)	UT and WD Deans	Hold for fall data results	Fall 2011 ADs and faculty examine data results and conduct fall data gathering
Form D Course Outlines	UT and WD Deans	On-going	Fall 2011 UT and WD Deans work with faculty to continue developing course outlines

**Assessment Forms Due Dates  
Academic Year 2011-2012**

<b>Form</b>	<b>Recipient(s)</b>	<b><u>Form Due Dates</u></b>	<b>Actions</b>
Form A Discipline/Program Outline	UT and WD Deans	August- December 2011	Fall 2011 ADs and faculty examine data results and conduct fall data gathering
Form B Discipline/Program Assessment Summary	UT and WD Deans	February 2012	Spring 2012 Based on data gathering and analysis from Spring 2011 and Fall 2011
Form C Discipline/Program Recommendation(s)	UT and WD Deans	February 2012	Spring 2012 Based on data gathering and analysis from Spring 2011 and Fall 2011 UT and WD Deans in conjunction with IR will develop executive summary of results for the Learning Effectiveness Council Learning Effectiveness Council will report to Board of Trustees D/P prepare for any budgetary needs as a result of recommendations
Form D Course Outlines	UT and WD Deans	On-going	Spring 2012 Continue developing course outlines