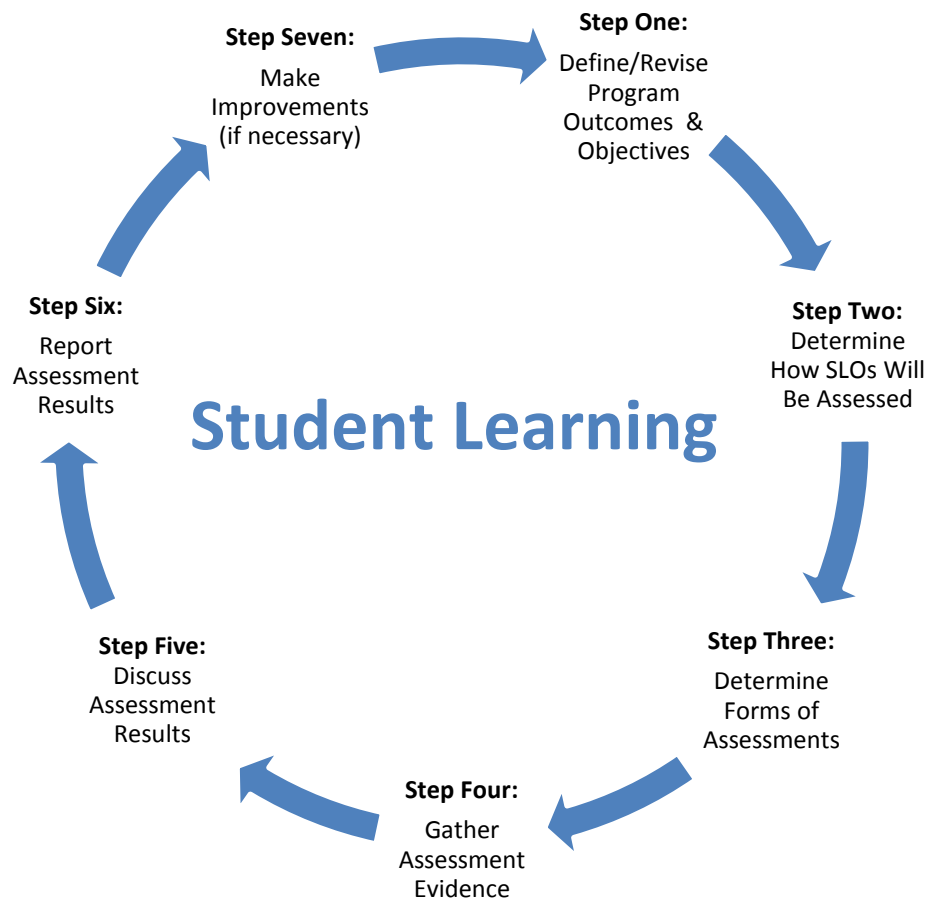


Somerset Community College SLO Assessment Handbook

Answers to questions about assessing student learning outcomes



"To begin with the end in mind means to start with a clear understanding of your destination... to know where you're going so that you better understand where you are now so that the steps you take are always in the right direction."

Stephen Covey, from *The Seven Habits of Highly Effective People*

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Section One: History and Rationale

The *Somerset Community College SLO Assessment Handbook* provides information about assessing student performance, and includes strategies to help faculty address critical questions: “Does my instruction have the desired effect on learners’ knowledge and skills?” (Smith and Ragan, 2005) and “Are my assessment strategies/practices aligned to the American Association for Higher Education *Nine Principles of Good Practice for Assessing Student Learning?*” (2003). If these questions can be answered by providing student performance data that show improved learning, the strategies being employed to address the critical questions are successful.

In 2006, Secretary of Education Margaret Spellings appointed the Commission on the Future of Higher Education. This Commission determined that a simple way to compare institutions was needed. Spelling’s impetus to the appointment of this commission was simply a reflection of the existing process of higher education accreditation in general. Doug Lederman, Co-editor of *Inside Higher Ed*, identified that Secretary Spellings wants to move the college accreditation system away from its emphasis on inputs “toward measures that place more emphasis on learning.” He quotes Spellings in stating that “currently, institutions are asked ‘Are you measuring student learning?’ and they check yes or no. That must change. Whether students are learning is not a yes or no question—it’s how? How much? And to what effect?”(2006).

In *Our Students’ Best Work*, the 2008 statement from the Board of Directors of the American Association of Colleges and Universities (AAC&U), a framework for accountability for colleges and universities was provided. In this publication, the AAC&U stated that the focus of higher education accountability should be on “key educational outcomes.” These *Essential Learning Outcomes* included: knowledge of human cultures and the physical and natural world; intellectual and practical skills; personal and social responsibility; and integrative and applied learning which were also known as the *Liberal Education and America’s Promise* or *LEAP Outcomes*.

The emphasis on higher education accountability resulted in expanding this notion of outcomes assessment to include the need for a clear plan at every college and university that would focus on assessing student learning at all levels of the system. Somerset Community College underwent a change in focusing on assessment with the creation of the Curriculum Assessment Teams in 2006. These teams took a look at the status of student learning within the College and laid the groundwork for imbedding assessment and accountability within our system of learning.

The change process is slow and painful for any entity, and Somerset Community College is no different. This change that is being brought about is an evolutionary shift in the culture of the College. Evolutionary change involves engaging and committing campus stakeholders, working through committees, and through sitting down with individuals and groups to build a shared vision and a shared plan to implement (Senge, 1994).

Strides are being made in shifting this culture to one that is focused on accountability; faculty have met, are talking about student learning outcomes, and are building informal plans to assess student learning. During 2013-14 faculty began focused discussions about student learning, including how and when. General Education courses piloted common assessments in courses in

both the Humanities, Fine Arts and Social Science Division and the Mathematical and Natural Science Division. Beginning in 2015-16, all SCC Programs and Divisions will develop formalized Curriculum Assessment Plans that will include the review and analysis of 2-3 student learning outcomes annually and as part of their Program Review, a focused review of all learning outcomes every five years. Following a review and analysis of the data is the expectation of reporting about the changes so that all are informed. This shift that is occurring represents a shift in the culture of the College to a focus on educational accountability and reporting to stakeholders—making data transparent to all.

In July 2013, national higher education associations and regional accrediting bodies endorsed *Principles for Effective Assessment of Student Achievement* that was intended to help colleges and universities better define assessment policies and evaluate their own assessment standards. This collaborative statement explains that Federal law requires a higher education institution undergoing accreditation to provide “evidence of success with respect to student achievement in relation to the institution’s mission”. It specifically identifies that all institutions should be expected to provide evidence of success in three domains:

1. Evidence of the student learning experience. *Institutions should be able to define and evaluate how their students are learning.*

For SCC, this means that programs should *identify all assessments being used to provide evidence of student learning and provide actual student assessment artifacts with personally identifiable information removed.* While the *Program Review Process* is done annually, *SLO Assessment* will only require that programs report on student learning related to 2-3 learning outcomes. Every program will not conduct a complete review of the entire program except during the years of in-depth CPE Program Review. All *SLO Assessment* analysis will be reported annually.

2. Evaluation of student academic performance. *Institutions should be able to define meaningful curricular goals, and they must have defensible standards for evaluating whether students are achieving those goals.*

For SCC, this means identifying student learning outcomes for both programs and courses, and general education learning outcomes, as well. It also means determining objectives by which outcomes will be measured, and setting threshold levels that identify the lowest performance indicating program/course mastery level and benchmark levels identifying mastery levels where the program desires students to be upon completion of course or program degree. Assessments, rubrics, and sample student work serve as evidence and exemplars should be collected and analyzed annually.

3. Post-graduation outcomes. *Institutions should be able to articulate how they prepare students consistently with their mission for successful careers, meaningful lives, and where appropriate, further education.*

For SCC, this means indirect assessment measures should be included in Curriculum Assessment Plans and evaluated during the annual Program Review process. These measures can include accrediting agency/certification exam performance, employer surveys, post-secondary transfer information and subsequent baccalaureate or higher graduation information. All of these measures are important to validate that programs are successful in preparing students for the workforce, but they are NOT a direct measure to which you assign a performance score relative to learning that is occurring in a classroom. These assessment measures are important in completing the “loop” as we state: “not only was Susie able to complete the NATEF Level 3 task lists at benchmark level for all content, she was also able to score in the top five percent on her ASE Certification Exam for Automotive Technology.”

The *Principles for Effective Assessment of Student Achievement* statement further identifies that “measures of all kinds will work best if they are integrated into the teaching and administration of colleges and universities, analyzed on a regular basis, and summarized in the accreditation process. Improving both instruction and student learning are the driving forces behind the Program Review Process at Somerset Community College, with the ultimate end goal of improving the quality of students graduating with degrees from our institution.

While the accreditation process allows institutions flexibility to determine the methods for measuring progress toward goals, these measures must be integrated into teaching, they must be analyzed on a regular basis and summarized in the Program Planning and Program Review Process.

The *Program Review Process* will enable SCC to provide the information required for accreditation, but most importantly, it will provide accountability in terms of key outcomes, ensuring that efficient, effective learning programs are in place for all students at the College, and that information regarding the student learning assessment process is available for stakeholders and easily accessible on the SCC website.

Analyzing programs and courses relative to learning outcomes represents a culture shift toward data transparency that is accountability-focused. While assessing student learning is being mandated by regional accreditation agencies and by stakeholders, this is not a phenomena that is just attached to education. The public expects that entities using tax dollars be accountable and able to answer “how is my money being spent and what evidence do you have that my money facilitating improvement or change?”

The focus on educational accountability and assessing learning outcomes is slowly bringing a cultural change to Somerset Community College. Division faculty are meeting to discuss student learning and to determine a strategy and plan within their discipline to build a framework for assessing student learning outcomes through measures that are a result of planned and focused instruction. Faculty are engaged in collecting, analyzing, and reporting assessment results as they are engaged in their annual Program Review process. Data are emerging that are resulting in changes to instructional delivery and assessment.

This Handbook is simply a result of the questions faculty have about designing and using measures that effectively assess student learning in the most authentic ways. Everyone realizes

that this process is going to be slow, but it is a necessity that everyone take part in assessing and reporting student learning as we make their education relevant, and become accountable for our actions. Business and industry are demanding that colleges and universities exit graduates who are prepared for the workforce. Assessing student learning is ONE step in the improvement of institutional assessment and accountability.

Over the next couple of years, you will see changes occurring around the College as all academic and support units begin looking critically at how they engage students and how they perform as a result of that engagement. Professional development will be offered on assessment strategies, as well as on the technology tools used to facilitate efficient data analysis. Stay tuned for those sessions.

Margaret Meade has often been credited, but not actually documented with stating: “Never doubt that a small group of thoughtful committed citizens can change the world; indeed, it’s the only thing that ever has.” Our small groups of teams collaborating on curriculum and assessment are making change happen at Somerset Community College.

Section Two: What Do You Need to Know Before You Begin?

Before you begin doing any task you need to understand the language and components required to complete that task. This section outlines the *basics* faculty need to understand in order to develop a comprehensive program assessment plan that provides an in-depth view of how well students are performing in your program.

What is Outcome-Based Assessment?

The American Association for Higher Education (AAHE) defines *assessment* as “an ongoing process aimed at understanding and improving student learning. It involves: making our expectations explicit and public; setting criteria and high standards for learning quality; systematically gathering, analyzing, and interpreting evidence; and, using the evidence to document, explain and improve student learning/performance.” (1995) *Outcome-based assessment* (OBA) focuses on measuring learning related to performance and is a term coined by William Spady, among others, that became widely used in public education during the 1980’s and 1990’s. In the words of Spady, “Outcome-based education means clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experience. This means starting with a clear picture of what is important for all students to be able to do, then organizing curriculum, instruction, and assessment to make sure this learning ultimately happens” (1997). Spady indicates that often the “outcomes of traditional school curricula were self-limiting and not preparing learners for the complex and dynamic future they faced.”

Fast forward thirty-five years to the technological society in which today’s students will become part of a workforce where it is even more important to ensure that each nurse can not only use the technology but appropriately calculate the medication dosage; where the aviation maintenance technician is competent and checking all of the items required for a safety check; where the cosmetologist can mix chemicals in the appropriate proportions for bleach or color for a client’s hair; or where the student transferring to a university as an engineering major is able to correctly use computer-based software to design and develop specifications, and create “to scale” 3-D building models. Education is no longer done in the confines of the single classroom; it must engage everyone working together as a group to achieve the final outcome—students who can demonstrate that they learned what they were taught, and as a result have demonstrated that they have a quality education.

In her speech to the New England Faculty Development Consortium, national assessment expert Barbara Wolvoord (2009) indicates that the outcome of assessment is action. As part of their *program review process*, academic faculty will determine the degree to which students are mastering the content they are teaching. Academic programs and general education disciplines need to collaborate to design, develop and implement comprehensive assessment plans that involve all faculty in administering targeted assessments, collecting and reporting assessment results, analyzing student learning data, and designing a plan for improving student learning, when needed.

Speaking Assessment Language

Before we talk about the SLO Assessment Process, we need to understand the terminology; everyone must know what they are being accountable for if they are expected to offer opportunities for students to demonstrate success. The following represent terminology that will be used regularly as academic programs work toward building an effective *Curriculum Assessment Plan* (CAP) for analyzing student performance and providing data to drive course and program improvement across Somerset Community College.

Some terms are similar and can be confusing, for example, *Competencies* and *Outcomes*. *Competencies* and *Outcomes* are both sets of *Student Learning Outcomes* (SLOs). *KCTCS Competencies* for your program and all of its courses are SLOs that can be used exactly as they are. But, if your program or individual course competencies have not been updated in the past couple of years, they may be more specific than you will want to use. Program or Course SLOs are typically broader sets of outcomes that address multiple competencies.

The KCTCS Curriculum Review Committee, composed of representatives from all 16 institutions, determines the curriculum for the System based on recommendations from academic program committees—these are your *KCTCS Program Competencies* or *KCTCS Course Competencies*. Faculty can view all of these materials on the KCTCS Faculty Senate Sharepoint site. As each semester begins, a visit to this site is critical in determining that the latest course competencies are used on course syllabi. If this Handbook is being viewed as an electronic document, this is a link to the *Sharepoint site for [KCTCS Faculty Senate Approved Curriculum](#)*. Note that non-KCTCS employees will not have the required login access to view this information.

Faculty from each program will determine Program and Course SLOs. Choice of SLOs for your Program is critical. Choosing broader SLOs that are not so specific that they require revision every time the CRC approves changes to your program or course competencies is a wise move; SACS Accreditation is about *Program Assessment* and data comparisons is difficult if SLOs are not consistent.

The distinction between *Course* SLOs and *Program* SLOs is also often confusing. *Course* SLOs are what students know and are able to do as a result of learning in a single course that includes content-based research, theory, and practice. Improving Course SLOs will result in improving Program SLOs. Course SLOs “feed” into Program SLOs; meeting Program SLOs is dependent on meeting Course SLOs.

Another type of SLO, *General Education or Gen Ed SLOs* are different from Course and Program SLOs. These are broader SLOs that are related to a student’s entire college experience. Gen Ed SLOs are what students know and are able to do as a result of their entire college experience that correlates to skills such as critical thinking and written or oral communication. In the [Supplementary Section # 1](#) you will find *General Education Learning Outcomes* that includes a complete list of the Liberal Education and America’s Promise or LEAP Outcomes. These outcomes are defined by the American Association of Colleges and Universities (AAC&U) as critical outcomes of a student’s whole college learning experience.

Program coordinators and their faculty should meet to revisit their Program and Course SLOs to determine if the overall program will benefit from any changes in SLOs. In the [Supplementary Section #2](#) you will find the *Curriculum Map “CLUMPING” Activity* that program coordinators might use with their faculty, either to verify/refine the program’s existing SLOs, or to develop SLOs if your program currently uses KCTCS Competencies or does not have any existing SLOs.

Is it an Outcome or an Objective?

The language of assessment is often confusing because different authors use different terminology interchangeably, and the meanings of both outcomes and objectives are so similar that one word is often used in place of the other. *Learning Objective* is best defined by Smith and Ragan (1999) as a “statement that tells what learners should be able to do when they have completed instruction” (p. 84).

Learning Outcomes tell students what they are going to be able to do, such as “Students will be able to explain the process of photosynthesis”, while the learning objective gets specific and identifies exactly how the learner will demonstrate the outcome, including the type of assessment and the level to which the learner is expected to perform. For example, one learning objective related to the photosynthesis outcome above might be: “On a 10 question quiz, the learner will correctly answer 8 out of 10 questions about the Calvin cycle.” An easy way to relate the difference between the two terms is that the objective involves a specific action at a specific level (taking a quiz and getting 8 correct). The outcome is broad and includes multiple objectives to assess the outcome (the Calvin Cycle is only a part of the process of photosynthesis). The [Supplementary Section #3](#) includes a sample MAT 206 *Course SLO* and *Learning Objectives* related to the SLO.

Writing outcomes and objectives is often a problematic task for faculty because of the difficulty in leaving their “role” as a teacher and thinking like a student. To write effective outcomes and objectives, approach the writing from the perspective of the student, thinking “what will the student be able to do as a result of the instruction?” or “If I am a student in this course/program what will I be able to demonstrate that I can do when I am finished with the course or program?” Remember that not only do SLOs tell students exactly what they are going to learn, they also tell instructors exactly what they are going to teach. For example, the *KCTCS Course Competencies* tell the instructor what needs to be mastered by students, in addition to what needs to be taught by the instructor, and provide specifics at the course level. [Supplementary Section #4-Writing Learning Objectives](#) contains an activity that can assist program coordinators in helping faculty to learn how to write Learning Objectives for your program or course SLOs, along with a [Supplemental Section #5-Outcome, Objective and Assessment Blueprint Template](#) to guide during development of various course or program assessments. Note that these documents will be discussed more in-depth during specific sections of the *Handbook*.

Is the SLO Matrix the Same as the SLO Table?

The SLO Matrix is a summary of your Comprehensive Assessment Plan—it lists each course in your program and correlates your Program SLOs to the course(s) in which SLO assessments take place. [Supplemental Section #6-Sample Program SLO Matrix](#) and [Supplemental Section #7-](#)

Blank SLO Matrix Template that can be used if your program does not currently have a Matrix. Note that the *SLO Matrix* is covered in-depth later in the handbook.

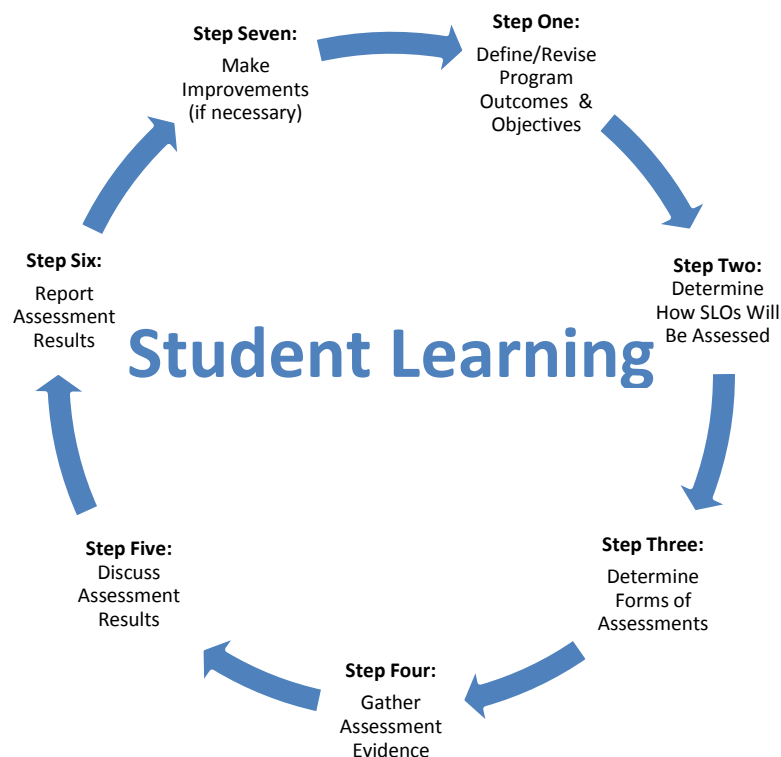
The SLO Table is a summary that shows how students in your program are performing on the identified SLO assessments. For each SLO, the table identifies program thresholds (lowest acceptable performance) and benchmarks (desired performance) for each assessment used to determine the degree to which students are meeting your Program SLOs. In addition, the table includes a brief summary of how students actually performed on the identified assessments, along with the analysis of student performance and information about changes that will be made to the program based on how students are performing. The table will also typically identify any resources related to both personnel and equipment/materials that are needed to implement the desired program changes. *Supplemental Section #8-Sample Completed Program SLO Table* and *Supplemental Section #9-Blank SLO Table Template*. The SLO Matrix and the SLO Table will be discussed in later sections of the *Handbook*.

Section Three: The SLO Assessment Process—How Everything “Fits” Together

An Overview of the Process

The SLO Assessment Process includes the following seven steps that when formalized in a document specifically identify your program’s Curriculum Assessment Plan. The SLO Assessment Process is a component of the Program Review Process at Somerset Community College and can be articulated in the graphic below:

The following graphic was modified from Walvoord’s *Assessment Clear and Simple* (2009) and represents a brief summary of each step of the SLO Assessment process:



Step One: Define/Revise Program Outcomes and Objectives. Programs need to either revisit or develop their Program SLOs. This is important in the process because some programs have used GenEd SLOs as program SLOs. While Programs need to assess GenEd SLOs, programs must assess content specific knowledge related specifically to each course. Programs can use the activity in Supplemental Section # 2 called *Curriculum Map “CLUMPING”* Activity on to ensure that outcomes that have been identified as Program SLOs indeed focus on the research, theory and practice related to the Program/Course. Programs must understand where they want to be before they can determine a path to “get there”.

Step Two: Determine How SLOs Will Be Assessed. Programs need to determine the courses where SLOs are taught and assessed in order to design their Curriculum Assessment Plan. Faculty must be able to identify baseline student performance relative to each SLO. This means that the program must statistically analyze student performance data, determine the students who are meeting and exceeding both thresholds and benchmarks, and identify changes that need to occur in classroom instruction in order to increase the number of students performing at the desired levels. Using the process to create a *Program SLO Matrix* outlined in [Supplemental Section #6-Sample Completed SLO Matrix](#) and [Supplemental Section #7 Blank SLO Matrix](#) can help programs develop a better understanding of where each SLO is taught and assessed so faculty can determine a path to move student performance toward thresholds and benchmarks for student learning.

Step Three: Determine Forms of Assessments. Programs need to determine the types/forms of assessments that will be appropriate for documenting student progress for each SLO. [Supplemental Section #10-About Assessments](#) includes a list of the various types of assessments and what types of learning they most often are used to assess. Programs must determine which courses and which assessments will be used to determine how well a student can demonstrate the degree of understanding relative to each SLO. If assessments don't exist that will provide the data needed for the Program Review Process and SLO Assessment, faculty must develop these assessments. Often, faculty develop a series of questions relative to each SLO that can be added to faculty designed assessments for the purpose of gathering consistent evidence that will ensure consistent analysis of assessment information related to student learning.

Step Four: Gather Assessment Evidence. Programs need to provide evidence of student learning using student work. Copies of all assessments that are administered in a Program or Course should be provided as part of the SLO Assessment Process. In addition, copies of threshold and benchmark performances on those assessments should be provided. Evidence of student learning includes actual student performance data on specific assessments. This information MUST be provided for all assessments that are reported in the SLO Assessment Process. Numerical information regarding programs/courses cannot be used for Curriculum or Program Review unless it is documented with supporting evidence that includes electronic data files.

Step Five: Discuss Assessment Results. Program faculty need to meet to discuss the SLO assessment findings to determine any changes that need to be made to the Curriculum Assessment Plan. During the SLO Assessment Process, faculty often discover gaps in the existing curriculum which can then be taken to the KCTCS Program Curriculum Committees along with recommendations for changes to the KCTCS Program/Course Competencies.

Step Six: Report Assessment Results. Program Coordinators will report data provided by program faculty relative to each Program SLO in the SLO Table. Reporting should “close the loop” and make connections between resource requests and student performance. [Supplemental Section #7-Blank SLO Matrix Template](#) contains a template that can be used to create the Program SLO Table or Course SLO Table. [Supplemental Section #9-Blank SLO Table](#) contains a template that can be used to report Program results. All data reported to Program Coordinators must be in electronic format and include raw data, total numbers of students, as opposed to the percentage of students.

Step Seven: Make Improvements (if necessary). After data have been analyzed, faculty should determine where changes should be made either to the instructional delivery, common assessments, common assessment questions, or the assessment process in order to obtain reliable and consistent information. Based on student performance, recommendations for future resource requests can be identified.

The Program Review Process

Each year every program will identify 1-3 Program SLOs that will undergo an in-depth faculty review. For years when the Program engages in a review of the entire curriculum, every SLO must be analyzed and student learning relative to each SLO must be documented. By the end of 2015-16, faculty in all programs should have conducted a review of student performance for every program SLO. This baseline information will be used at the end of the ten year cycle to determine the status of student performance in each program area and to highlight any improvements that have occurred since the mid cycle review at the end of 2012-13.

Section Four: Define/Revise Program Outcomes and Objectives— Step One of the SLO Assessment Process

Designing program SLOs are another critical component of the SCC SLO Assessment Process. This section includes information that can assist faculty in SLO design or refinement.

Competencies, Outcomes, and Objectives—Making them Work for Programs

Everything works together in a program. KCTCS Program Competencies determine broader categories or Program SLOs. KCTCS Course Competencies “fit” under Program SLOs. The competencies help to determine what types of learning objectives are needed for each SLO. For example, if a Program SLO has a Course Competency from BAS 110, then a learning objective to measure how students are performing relative to this SLO should correlate to the BAS 110 Course Competency. Note that using the *Supplemental Section #2-“Clumping”* Activity could be useful to better understand these differences.

Designing SLOs—Backward Design

The task of designing and determining student learning outcomes, SLOs, can best be understood “backwards.” Work backwards from the KCTCS Program Competencies. Start with the list of Program Competencies. Categorize these competencies in “clumps” that make sense and are broader statements related to what students should know and be able to do when they complete their program degree. Each Program SLO should correlate to a group of KCTCS Competencies. Ideally, a program will probably have 6-8 broad Program SLOs, but there is NO set number—the number has to address all of the content within the individual program. *Supplemental Section #11-MAT 206 Correlation of KCTCS Course Competencies and Course SLOs* provides an example of how KCTCS Course Competencies and Course SLOs correlate for MAT 206, Mathematics for Elementary and Middle School Teachers. Both program competencies and program SLOs can be developed/correlated in a similar manner.

Bloom’s Taxonomy of Educational Objectives—How It Can Assist

SLOs, learning objectives, and assessing those outcomes and objectives are the foundation for all learning, and for the design of instruction for all Somerset Community College courses. Outcomes and objectives involve student performance or action in which the student engages (Verb). An objective is different in that it identifies the action the student will engage in (Verb); it answers the question “what will the learner know or do?” (Performance); it defines how well the student should know or do the performance (Criterion that is measurable); and is clear about when the student will perform (Conditions).

In defining course or program learning outcomes and learning objectives, a revisit to the Bloom (1956) taxonomy of educational objectives may be helpful. *Supplemental Section #12-Bloom’s Taxonomy: A Review* may be useful as SLOs and performance objectives are written. This is a useful structure to help faculty categorize test questions which follow as a result of determining an SLO. For a program, SLOs should range through the six levels of Bloom’s, with most outcomes falling in the first three levels for introductory courses, and the mastery level program

courses having outcomes at the higher taxonomy levels. As a reminder the Bloom's taxonomy levels are *knowledge, comprehension, analysis, synthesis, and evaluation*. This section also includes a list of categories of questions and what type of response would be expected of the student who answers those questions which should be helpful in designing new assessment questions or refining existing questions.

Section Five: Determine How SLOs Will Be Assessed—Step Two of the *Process*

Ideally, after Program SLOs are determined, faculty should meet to determine a plan for assessing student learning in the program. This plan, called the *Curriculum Assessment Plan (CAP)* will include a Program SLO Matrix that correlates Program courses and SLOs.

Supplemental Section #7—*Blank SLO Matrix* will be helpful with this task. The Program SLO Matrix, either a common final or common final blueprint, when (date/range) and where (which course) Program SLOs will be assessed, a schedule of dates for submitting assessment information, and a schedule of meetings to collect, review and analyze program data will guide program SLO assessment. Faculty will collaborate and identify which SLOs will be assessed in which courses, and further, what the assessments should look like that will be used to measure student learning.

Guidelines for Selecting Assessments and Assessment Methods

The first thing you will want to consider when determining how SLOs will be assessed is to determine what type of questions you want to answer with the student assessment results that you collect. You may be looking at ways to determine how well your students performed related to a standard, or you might be interested in comparing a program at your institution to those in other KCTCS institutions. You might also wonder how well your program prepares your students for the workforce. You may also want to look at answering the question “How can we improve upon the learning experience we provide students?” Determining the questions you want to answer with your assessment results will guide the types of assessments you use in your program.

You will also want to make certain that you don’t use a single assessment to measure each SLO. In other words, don’t try to design a super one-size-fits-all assessment for each SLO. The assessment should make sense. For example, in Automotive Technology students are assessed on their actual performance relative to completing NATEF Task lists for lab courses and on a final written assessment for lecture courses for each SLO, two different types of student performance are used. A variety of measures that yield the same level of student performance validates program data.

Both direct and indirect measures should be considered when measuring student performance in your program. Direct measures are those that are used within your program courses to which a student’s grade in a course is directly linked, such as a lab performance, a written final exam, a final speech presentation, or a final essay. Indirect measures often involve students having to reflect on their performance, complete a survey responding to specific aspects of their course or program, or complete a certification exam which is not part of your program coursework, but validates that what you are teaching in your program is what is important by business and industry related to your program degree.

Both qualitative and quantitative assessments should be used to obtain a broad measure of student learning. Qualitative assessments require a subjective assessment of student performance, such as using a rubric to score a music recital or oral presentation, or determining where a student’s written performance lies relative to a benchmark or anchor paper. Quantitative

assessments are those that have right or wrong answers, such as a written math test, a single answer multiple choice test, or a fill-in-the-blank vocabulary test. A word of caution, use qualitative means to assess where it makes sense to do so; do not try to make a qualitative assessment “fit” when the course naturally lends itself toward quantitative assessment strategies.

Choose assessments that allow you to assess both strengths and weaknesses of programs. No matter how effective your program is, weaknesses still exist. Identify ways to determine how you can assess student learning that can not only identify things you are doing well, but also those where improvement can be made.

Use both active and passive methods of assessment. An active type of assessment method involves instructors and students having direct contact in order to gather information, such as a final exam. Teachers administer the exam to the students. A passive type of assessment involves no interaction with students, such as using a database to analyze grades.

Be selective about what you are measuring. Choose assessable indicators of effective assessment; complex measures are not necessarily the best choice for assessing student learning. Select a manageable means to assess student performance so that energy and resources are not drained.

If your program has a capstone course, you should be able to assess all program SLOs in this course. These courses should allow the demonstration of the depth and breadth of student learning in your program.

If you need assistance during the process, the Office of Institutional Effectiveness and Research is available to guide you as changes and improvements are made for your assessing student learning in your program.

More about Direct vs. Indirect Measures

For programs (or courses) having common exit exams, this has already been determined, but it would still be beneficial for faculty to revisit these common finals or common performances within courses to ensure that they are truly assessing the program/course student learning outcomes. Note that the use of a national certification exam or a nationally normed test, such as NOCTI is typically not an appropriate measure for assessing learning in a course, unless your course SLOs were used to design the NOCTI Program assessment, as in the case for the Criminal Justice Program. NOCTI or other certification assessments will typically be indirect measures because they have not been used to design the instruction for a course, nor do they impact the student’s overall performance in a course. These types of indirect measures of student learning are valuable for programs because high performance on these measures validates (1) that the material being taught in courses aligns to what is considered appropriate for industry standard and (2) that what is being learned inside the classroom aligns with business and industry expectations of student graduates.

The Assessment Blueprint or Common Final Exam

For those courses that do not use common final exams, an assessment “blueprint” needs to be determined to ensure the quality of student assessments within each course and the faculty consistency of expectations. An assessment blueprint outlines the specifics of the assessment and frequently indicates the types of questions that should be asked, the number of questions for each content “category”, the use of specific tools or electronics that should be employed, and often the time it should take the student to complete the assessment. *Supplemental Section #3-Sample MAT 206 Course SLOs and Learning Objectives* also includes a sample assessment blueprint and *Supplemental Section #5-Outcome, Objective and Assessment Blueprint Template* provides a template for your use as you develop your SLOs, objectives and align assessments.

Section Six: Determine Forms of Assessments—Step Three of the SLO Assessment Process

It is sometimes helpful to work concurrently on determining when and how students will be assessed. Once it has been determined during which course(s) SLOs will be assessed, program faculty must determine the types of assessments that will be used. In this section, different types of assessments are identified that may be helpful in your quest.

AAHE defines *Assessment* as “an ongoing process aimed at understanding and improving student learning.” (1995). It is also the ways instructors gather data about their teaching and students’ learning. Student data provide a “snapshot” of a range of activities using different forms of assessment such as: pre-tests, observations, practice problems, quizzes, and unit examinations. Once data is gathered, faculty can then evaluate student performance.

Evaluation, then, is faculty judgment to determine the overall value of an outcome and is based on the assessment data that has been gathered. Using this data to make decisions about ways to improve the weaknesses, gaps or deficiencies in instruction can then be used to guide changes made to the curriculum, instructional delivery and assessment processes.

There are three types of assessments: diagnostic, formative, and summative. Although they are all often referred to as simply assessments, there are distinct differences between the three types. These types are explained in [Supplemental Section #10-About Assessments and Question Types](#).

If assessments are created in a content management system, there typically exists the ability to obtain raw test data so that information can be exported into Excel. This provides the instructor with the ability to complete a test item analysis in a relatively painless manner.

Using a Final Exam to Determine SLO Performance

One of the most common ways to assess student performance on SLOs is to use a final exam item analysis. It sounds much more difficult than it is. A note for those of you who do your final exams in Blackboard or using some other type of content management system (CMS): you can do the item analysis relatively painlessly and typically if you use MyLabs or Cengage, either publisher will assist in gathering assessment information from your courses. Note that you will want access to raw data in order to get an accurate and full picture of student performance.

For faculty who test with paper and pencil, a test item analysis is still relatively painless. You will just need to create an Excel spreadsheet and simply enter a “1” if the student correctly answered the question, and a “0” if the student incorrectly answered the question. OIER staff will be providing professional development to assist faculty in better understanding how to use a test item analysis to analyze student performance related to each SLO.

Section Seven: Gather Assessment Evidence—Step Four of the SLO Assessment Process

Part of your Curriculum Assessment Plan (CAP) should be a clear and concise method for gathering SLO student performance data that aligns with Program Review deadlines. Program Coordinators should meet with faculty to determine a timeline for submitting assessment scores (raw data). The process involves each faculty member providing the results on student assessments that were determined to be used to assess student performance relative to each SLO. Clear dates must be established that will permit your program to complete its Program Review in a manner aligned with institutional deadlines.

Organization is a key to systematic analysis of data. Print off a list of faculty members in your program. Use a “check off” system to record when data is received from each faculty member. Depending on your level of comfort with technology, you may choose to use either an electronic filing system or a paper filing system (or both) as data is being collected. Many faculty use a notebook with tabs to organize assessment data from faculty. Just remember that you cannot analyze data that you cannot locate, so stay organized.

Section Eight: Discuss and Analyze Assessment Results— Step Five of the SLO Assessment Process

Your program should meet regularly to discuss and analyze student performance in order to make decisions that will result in program improvement. As your program faculty meet to discuss student results, a clear plan should be devised that is based on that data and all results should be reported in the SLO Table. *Supplemental Section #8-Sample Completed SLO Table* and *Supplemental Section #9-Blank SLO Table* can be used during the analysis and reporting phase of the SLO Assessment process. All programs should have an SLO table in Compliance Assist were data was reported for the 13-14 academic year. You will simply need to update the last two columns of the table and then report your analysis of student performance and the plan you will use to make program improvements.

Some guidelines will make analyzing student performance much easier:

- (1) If you are meeting at the end of the year to discuss student performance, make certain you have completed calculations of students performing at or above each benchmark and threshold levels.
- (2) Your program's CAP should identify how often the faculty will meet to discuss and analyze student performance. For example, you will need to determine if faculty will meet at the end of each semester or at the end of the year to analyze student data.

Section Nine: Report Assessment Results— Step Six of the SLO Assessment Process

Upon completion of the SLO student performance analysis, report results in the format desired by our institution, the SLO Table. *Supplemental Section #8-Sample Completed SLO Table* shows a sample from Construction Technology and *Supplemental Section # 9-Blank SLO Table* provides a blank template that can be used to report data. Coordinators should have results from the previous year's student performance in an SLO Table that can simply be updated in subsequent years.

Guidelines for reporting assessment results in the SLO Table, include:

- Column 1: List all program SLOs and identify those being assessed for the current year.
- Column 2: List all assessments and identify the type, what course(s) the assessments are administered within, any benchmark/threshold performance expected, and provide a rationale for those levels.
- Column 3: Provide the percentage of students performing at each level. Where multiple years of data are provided, be certain to clearly label each year's information.
- Evidence of Improvement (bottom of SLO Table): Be sure to include information about lowest, highest performing areas. Indicate any data that is baseline information. If multiple-year comparisons are made, indicate the amount of increase or decrease in student performance and provide a rationale for that performance.
- Use of Results/Plan for Improvement (bottom of SLO Table): Explain the process your Program uses for planning, gathering, and analyzing data. Identify any strategies your faculty are using to improve student performance. Close the Loop between planning and program review. Identify funded or non-funded resource requests and tie them to student performance. (ie. "X" happened as a result of purchasing, or not purchasing, "Y").
- Samples of all assessments that were used to analyze student performance should be filed to support your student performance data presented in the SLO Table
- Both the SLO Table and the supporting student performance data will be uploaded to Compliance-Assist during the Program Review process.

Section Ten: Make Improvements—Step Seven of the SLO Assessment Process

This is where the *rubber meets the road* and the loop closes on Program Review and Planning. We have all of this data and plans for improvement completed in the SLO Table. Now we need to take the information and develop a systematic means to make improvements on existing assessments or create new ones. Modifications in instructional delivery should be made in an effort to facilitate improved student learning.

For example: In the Construction Technology SLO Table example in Supplemental Section #8, Construction Technology discusses student performance, new equipment that was purchased through Perkins funding, and identifies changes that will need to be made in curriculum and instructional delivery based on incorporating the new equipment purchase into the program. The Unit Resource Request for the previous year would show the request for the equipment, the equipment was purchased, Program Review then identified that changes would need to be made because of this new equipment addition to the program. Then the following year, they used the equipment and this is what happened to student performance on the SLO where students will use the equipment to demonstrate mastery so students can be better prepared upon employment. Then, if improvement did not happen, we identify the changes that should be made to help students get better prepared for the workforce or to transfer to a university and indicate any further resources needed to make those improvements happen

As you and your program faculty are working through the SLO Assessment Process and making use of the *Faculty SLO Assessment Handbook* and *Supplemental Information, Forms and Activities*, remember that OIER staff is available for assistance and will be conducting professional development throughout the academic year to assist you in areas where assistance is desired. This assistance will be in a small group session and totally focused on individual programs and can be scheduled on any SCC Campus as desired by contacting Jamie Foster at extension 16849 or by email at jamie.foster@kctcs.edu.

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