WHAT IS A STUDENT LEARNING OUTCOME?

*A Student Learning Outcome (SLO) is a statement about what **a student** will **think, know, feel**, or **be able to do** as a result of **an educational experience**.*

A student can be anyone engaged in **learning**, such as:
- a Mt. SAC student
- a faculty member
- a staff member
- a parent
- a high school student

An educational experience can include the following:
- a topic/unit
- a course
- a program
- a certificate/degree

SLOs are designed and developed by the stakeholders of the course, program, or institutional unit; the assessment of SLOs within the instructional area illuminates the ways in which students learn. SLOs must be measurable so that the difference between the expected achievement and the actual achievement can be identified and narrowed. While the content of a SLO is dependent on the substance of the course, program or instructional unit, five primary traits will always be present: (1) **Alignment**, (2) **Central**, (3) **Feasible**, (4) **Meaningful**, and (5) **Measurable**. However, even though the content of courses and programs is relatively static, course and program outcomes may be fluid and revisable.

It is imperative to note here that faculty members have the responsibility for SLOs and thus, the authority on how they will be developed and assessed.

SLOs are closely connected to the planning efforts of the institution. When data from SLOs have been analyzed, the faculty and/or the department plan for improvement may or may not include the requisition of resources. Examples of improvements include, but are not limited to, the following:
- Curriculum revisions
- Increased faculty/staff
- Training for faculty/staff
- Equipment purchases
- Software modification
- Implementation of new teaching techniques
- Discuss student learning with faculty who teach in the sequence course before and after this one to align curriculum

NOTE: Students will typically perform better when they are given clear and distinct expectations of what they will be evaluated on and how they will be evaluated. In this vein, faculty are <u>strongly encouraged</u> to include course-level SLOs on their course syllabi.

Additional Resources:
SLO terms and definitions.
http://www.elcamino.edu/academics/slo/definitions.asp

The act of assessing SLOs is the formalization of the thought processes that occur to all faculty engaged in teaching; *how do I know, unequivocally, that my students understood the concept?* There is no need to reinvent the wheel; it may help to work backwards. What instruction or coursework are you already giving students that capture the important concepts, skills, or abilities of the course?

When engaging in dialogue about the creation of SLO statements, the following five attributes are essential to ensure the SLO will yield actionable information allowing for improvement:
- **Alignment:** SLOs must be aligned to department goals. Department goals are the educational outcomes departments are actively attempting to achieve (e.g., the Math department has set a goal to: *Promote in students an appreciation for the value of a mathematics education via application problems*). Additionally, goals are not to be confused with activities or tasks; goals are the outcomes you would like to achieve *as a result* of performing a task or activity. Alignment ensures the annual planning efforts of departments are supported by evidence generated through the SLO assessment process.
- **Central:** Outcomes must be central to your course, program, or institutional unit. This will ensure the greatest amount of buy-in from various individuals and thus, have the best chance of being completed. This will enable the widest impact on student learning, student success, or client experience.
- **Feasible:** Look at your resources (human, time, technological, etc.) and determine whether the outcome and its assessment is feasible. Is it likely that the process could be accomplished or not?
- **Meaningful:** How important is the outcome to the course, program, or institutional unit? It is recommended that you select something that your group is curious about, something that will make a positive impact for your students or clients, and something you will be interested in starting *and* completing.
- **Measurable:** SLOs must be measurable to yield actionable data. To help ensure the SLO is measurable, it may be helpful to refer to the actions verbs within Bloom's Taxonomy.

If your group is stalled, consider trying something (anything) and learning from the experience. After all, SLOs are an iterative, collegial process designed for collaborative dialogue. Dialogue about a struggle can be very productive.

Typical SLO syntax: Students will <action verb: Bloom's Taxonomy> <concept, skill, ability, attitude>.

Hypothetical Example:
Course: History of Rock
Dept Goal: Students will understand how music influences culture.
SLO: Students will critically appraise the influence George Harrison had on the Rock genre.

Measurable Objective or Student Learning Outcome
At Mt. SAC, SLOs are similar to Measurable Objectives (MOs). MOs encompass the content of a course. Often, they are expressed in statements about the material that will be taught in a course. SLOs build on the MOs of a course; rather than focus on course content, SLOs focus on the learning that will occur *as a result* of taking the course. It may help to think of a MO as an assignment in and of itself while a SLO is the educational goal an instructor hopes to achieve as a result of giving the assignment to students.

Hypothetical Example:

Course: History of Rock

MO: Students will be assigned selected readings from the text book, "The Silent Beatle: A History of George Harrison"

SLO: Students will critically appraise the influence George Harrison had on the Rock genre.

More often than not, MOs at Mt. SAC are written and framed identically to SLOs. If this is the case, MOs can be used as SLOs.

Additional Resources:

How to write a SLO.

http://www.k-state.edu/assessment/slo/instructions.htm

HOW TO WRITE AN ADMINISTRATIVE UNIT OBJECTIVE (AUO)

AUOs statements concern the fundamental functions of an administrative unit and the resulting services provided to clients.

Five core attributes are essential to ensure the AUO statement will yield actionable data allowing for improvement.
- **Alignment:** AUOs must be aligned to the goals of the unit (e.g., the Counseling unit might have an AUO such that: *Students will be satisfied with on-line counseling services* which ties directly to their goal that the Counseling department will: *Develop and implement counseling interventions to enhance retention and student success*). Additionally, goals are not to be confused with activities or tasks; goals are the outcomes you would like to achieve *as a result* of performing a task or activity. Alignment ensures the annual planning efforts of departments are supported by evidence generated through the SLO assessment process.
- **Central:** AUOs must be central to your unit. This will ensure the greatest amount of buy-in from various individuals and thus, have the best chance of being completed and will enable the widest impact on the client experience.
- **Feasible:** Look at your resources (human, time, technological, etc.) and determine whether the AUO and its assessment is feasible. Is it likely that the process could be accomplished or not?
- **Meaningful:** How important is the AUO to the unit? It is recommended that you select something that your unit is curious about, something that will make a positive impact for your students or clients, and something you will be interested in starting *and* completing.
- **Measurable:** AUOs must be measurable to yield actionable data. To help ensure the AUO is measurable, it may be helpful to refer to the actions verbs.

Typical AUO syntax:

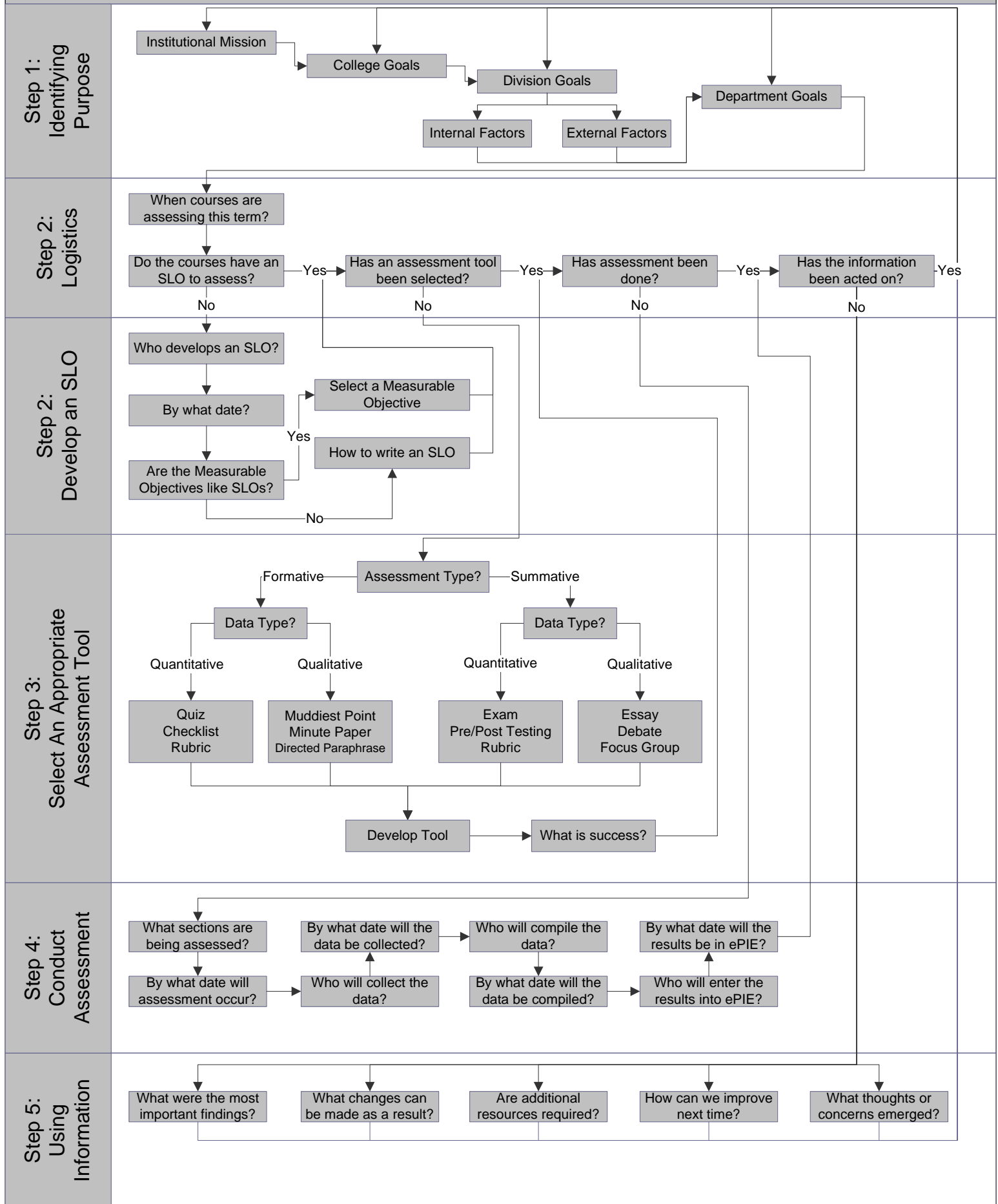Clients will <experience, receive, understand> <satisfaction, service, process>.

Hypothetical Example:
Unit: Counseling
Unit Goal: Develop and implement counseling interventions to enhance retention and student success
Unit AUO: Students will experience satisfaction with on-line counseling services.

Achieving actionable outcomes information for the improvement of teaching and learning

Step 1: Identifying Purpose

Institutional Mission → College Goals → Division Goals → Department Goals

Division Goals → Internal Factors, External Factors

Step 2: Logistics

When courses are assessing this term?

Do the courses have an SLO to assess? — Yes → Has an assessment tool been selected? — Yes → Has assessment been done? — Yes → Has the information been acted on? — Yes

No (Do the courses have an SLO to assess?)
No (Has an assessment tool been selected?)
No (Has assessment been done?)
No (Has the information been acted on?)

Step 2: Develop an SLO

Who develops an SLO?

By what date?

Are the Measurable Objectives like SLOs? — Yes → Select a Measurable Objective

Are the Measurable Objectives like SLOs? — No → How to write an SLO

Step 3: Select An Appropriate Assessment Tool

Assessment Type?

Formative → Data Type?
Summative → Data Type?

Data Type? (Formative):
- Quantitative → Quiz / Checklist / Rubric
- Qualitative → Muddiest Point / Minute Paper / Directed Paraphrase

Data Type? (Summative):
- Quantitative → Exam / Pre/Post Testing / Rubric
- Qualitative → Essay / Debate / Focus Group

Develop Tool → What is success?

Step 4: Conduct Assessment

What sections are being assessed? → By what date will assessment occur? → Who will collect the data? → By what date will the data be collected? → Who will compile the data? → By what date will the data be compiled? → Who will enter the results into ePIE? → By what date will the results be in ePIE?

Step 5: Using Information

What were the most important findings?

What changes can be made as a result?

Are additional resources required?

How can we improve next time?

What thoughts or concerns emerged?

RUBRICS

Rubrics are effective tools to measure Authentic Assessment for SLOs. A rubric is a scale designed for scoring student work against a pre-defined set of criteria. Rubrics are useful for scoring a variety of products (see Assessment Tools) and are appropriate for developmental, as well as mastery-oriented assessments. Rubrics clearly define expectations and provide consistency in grading.

Holistic rubrics measure performance across multiple factors as a complete product.

1 - Poor Researcher	2 - Average Researcher	3 - Excellent Researcher
included 1-4 sources	included 5-9 sources	included 10-12 sources
lots of historical inaccuracies	few historical inaccuracies	no apparent historical inaccuracies
cannot tell from which source information came	can tell with difficulty where information came from	can easily tell which sources information was drawn from
bibliography contains very little information	bibliography contains most relevant information	all relevant information is included

Analytical rubrics specify individual criteria and evaluate these standards independent of one another. An analytical rubric is in table format with three or more criteria and three or more levels of performance to be measured. Using descriptors for each cell in the matrix will clearly document expectations for the assignment. If desired, weighting can be used to emphasize the significance of a particular criterion. The standard for success is then set for each benchmark based on the total score of the rubric.

Criteria	Weight	Poor (1)	Average (2)	Good (3)
Number of Sources	x1	1-4	5-9	10-12
Historical Accuracy	x2	Lots of historical inaccuracies	Few inaccuracies	No apparent inaccuracies
Organization	x1	Cannot tell from which source information came	Can tell with difficulty where information came from	Can easily tell which sources info was drawn from
Bibliography	x1	Bibliography contains very little information	Bibliography contains most relevant information	All relevant information is included

Out of the possible 15 points a student might score on the above rubric, a student must score between 13 and 15 to be classified as a *Good Researcher*, 10-12 to be an Average Researcher, and 8 or below to be a *Poor Researcher*.

Checklists are helpful for determining if certain criteria are simply met or not met. The degree of quality to which a task was completed is not examined but rather, whether or not the task was completed. The typical design of a checklist has the criteria stated, numbered, and accompanied by a short description.

Example[1]:

Bibliography Checklist

☐ 1. **Sources are authoritative**. Articles come from journals whose standards for publication include conscientious editorial review or peer review. Books cited are authored by individuals with appropriate credentials. Web sites are attributed to organizations or individuals with expertise on the topic at hand.

☐ 2. **Sources are current** (Older articles are justified).

☐ 3. **Sources are varied**. Citations represent various media (book, journal, website, etc.) where appropriate, diverse points of view are represented. Sources represent a range of publication dates to show the spectrum of thought on the topic, as appropriate.

☐ 4. **Sources are of an appropriate number**. At least [five] different sources are included. No single source provides the primary substance for the final product.

☐ 5. **Sources represent appropriate scope for the assignment**. Books and journal articles are not too highly specialized for the scope of the paper. General reference citations are used as background material.

☐ 6. **Special-interest web resources are acknowledged as such in the text of the document.** Biases are explained.

☐ 7. **Popular literature is included only when appropriate and is acknowledged as such in the text**.

☐ 8. **Citations follow APA citation style both in the text and in the list of references.**

☐ 9. **Information from sources is integrated into a cohesive text.**

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[1] Source: http://www.anselm.edu/Documents/Library/info-lit-tool-05.pdf

MUDDIEST POINT

Based on the premise that most lectures can be improved, this method is to allow students no more than two minutes at the end of an instructional period to write down the concepts that were least clear to them during instruction. This gives faculty the ability to get rapid feedback on a particular segment of a lecture or the lecture as a whole. Those least understood concepts that total a pre-determined threshold would be addressed by the professor in the next lecture to ensure learning.

Example:

Please take no more than two minutes to write down the concepts you felt were confusing in this lecture?

Guidelines[2]:
1. What part of the lecture do you want feedback on?
2. Allow students no more than two minutes at the end of the instructional session to respond.
3. Include the time limits in the prompt to the students.
4. Give the students materials (e.g., post-it, index card) to write answer the prompt.
5. Collect the responses to the prompt as the students exit the classroom.
6. Respond to the feedback students provided in the next instructional session.

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[2] Source: http://www2.honolulu.hawaii.edu/facdev/guidebk/teachtip/assess-2.htm

MINUTE PAPER

Despite the name of the assessment tool, students are asked to a few minutes writing the main idea of a topic or class. The Minute Paper is commonly used to determine if the main idea of a lecture is captured by the students. An instructor may request the inclusion of a question students may have on the course material or ask students to comment on interesting, disturbing, or surprising aspects of a lecture or class. The benefit to the instructor is that Minute Papers take little time to construct and evaluate. The evaluation of the papers allows for rapid feedback and to address any concerns the instructor may have if the students have not responded with the key concepts that were taught in the instructional session.

Example:

What is the most important thing you learned in this session? How might you apply what you learned today in your everyday life? What questions remain unanswered?

Guidelines[3]:
1. Decide first what you want to focus on and, as a consequence, when to administer the *Minute Paper.* If you want to focus on students' understanding of a lecture, the last few minutes of class may be the best time. If your focus is on a prior homework assignment, however, the first few minutes may be more appropriate.
2. Plan to set aside five to ten minutes of your next class to use the technique, as well as time later to discuss the results.
3. Give the students materials (e.g., post-it, index card) to write answer the prompt.
4. Let the students know how much time they will have (two to five minutes per question is usually enough) and what kinds of answers you want (words, phrases, or short sentences).
5. Feedback should be provided in the very next instructional session.

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[3] Source: http://www2.honolulu.hawaii.edu/facdev/guidebk/teachtip/assess-2.htm

DIRECTED PARAPHRASE

This assessment tool promotes simulation of actual work or life-related experiences. Students are asked to summarize the key concepts from a class or lecture and formulate a written discussion of those concepts to an imagined, specific recipient. The difference between this method and a simple summarization is use of role play by the students.

Examples:
1. A nursing student might be directed to paraphrase the concept of drug clearance by the kidneys to a worried patient.
2. An economics student might be directed to paraphrase a point of tax policy to a corporate CEO.
3. A philosophy student might be directed to paraphrase an ethics concept so that it is readily understood by a teenager.