

# Writing Measurable Student Learning Outcomes

Workshop for UWF Faculty - Office of Institutional Effectiveness

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June 2, 2021

# Topics

- ▶ Student Learning Outcomes
  - ▶ Definition
  - ▶ The SMART model
  - ▶ Bloom's taxonomy
  - ▶ Program vs Course
  - ▶ Undergraduate vs Graduate
  - ▶ Examples and Assessment Considerations
- ▶ Important tools
  - ▶ ALCs and ALPs
  - ▶ Curriculum maps
  - ▶ Assessment plans

# Student Learning Outcomes (SLOs)

- ▶ SLOs describe the knowledge, skills, and attitudes students will possess upon completion of a course or academic program.
- ▶ SLOs should be *observable* and *measurable*.
- ▶ SLOs should be written with concrete, behavioral language that describes learning from the student perspective.  
(Hint: think direct measures)

# SMART Model

- ▶ SMART is an acronym for developing well-crafted SLOs.
  - ▶ S = Specific
  - ▶ M = Measurable
  - ▶ A = Appropriate / Attainable / Action-Oriented/Aligned
  - ▶ R = Relevant / Realistic / Results-Oriented
  - ▶ T = Time-Specific

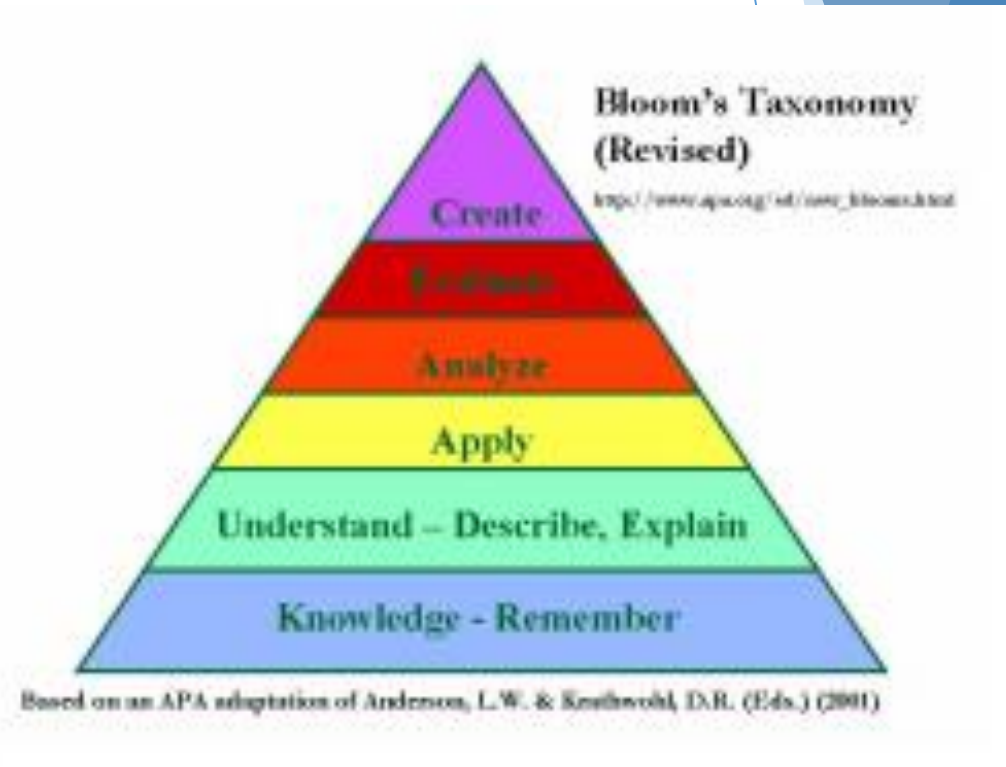
# SMART Model: Explained

## SMART Student Learning Outcomes

<b>Specific</b>	Describe a specific category of student learning. Use well-defined and clear language to describe exactly what the student will know, do, or value at the end of the learning experience. SLOs stated too broadly or too abstractly are difficult to measure.
<b>Measurable</b>	Use concrete language to describe the knowledge students will be able to articulate or explain, the skilled disciplinary behaviors they will be able to perform, the values and attitudes they will articulate, and how adherence to these values will manifest in their professional behavior.
<b>Appropriate / Attainable / Action-Oriented / Aligned</b>	Expectations for student learning describe expertise that is reasonably attainable and appropriate for the developmental level of students enrolled in the course (lower-level undergraduate / general education, upper-level undergraduate, master's-level graduate, doctoral-level graduate), given the educational experiences created in the curriculum and the resources available. SLOs should align with goals articulated for the department mission, national disciplinary standards for student learning, and the mission and goals of the college and university.
<b>Relevant / Realistic / Results-Oriented</b>	Learning outcomes should be reasonable given the resources available. Realistic SLOs should be neither too easy to attain nor impossible to attain. Relevant SLOs describe learning that reflects disciplinary goals and standards. Relevant SLOs might describe non-disciplinary skills expected of all graduates of the institution (i.e., that align with general education SLOs).
<b>Time-Specific</b>	Course-level SLOs should be appropriate for the location of a course in the curriculum (early, middle, capstone). Program-level SLOs should be appropriate for the level of expertise represented by the degree awarded (baccalaureate, master's, doctorate).

# Bloom's Taxonomy

- ▶ Framework used for describing the development of student learning from the acquisition of *foundational knowledge and skills* through the attainment of *expert level knowledge and skills*.



# Bloom's Taxonomy Verbs

## Action Words for Bloom's Taxonomy

Sample of 176 unique words identified for a level of Bloom by 4 or more lists in a sample of 30 published lists (*f* = number of lists that nominate the word for a level of Bloom).

This document reformats **Table 1**, published in Stanny, C. J. (2016). Reevaluating Bloom's Taxonomy: What Measurable Verbs Can and Cannot Say about Student Learning. *Education Sciences*, 6 (4), 37; doi:10.3390/educsci6040037, for single-page printing. Used under CC-BY, licensed under CC-BY by Claudia J. Stanny.

Knowledge	<i>f</i>	Understand	<i>f</i>	Apply	<i>f</i>	Analyze	<i>f</i>	Evaluate	<i>f</i>	Create	<i>f</i>
arrange	6	articulate	4	act	19	analyze	24	appraise	22	arrange	22
choose	4	associate	4	adapt	4	appraise	11	argue	12	assemble	14
cite	17	characterize	4	apply	22	break	8	arrange	5	categorize	7
copy	4	cite	4	back / back up	5	break down	7	assess	17	choose	7
define	21	clarify	5	calculate	10	calculate	9	attach	4	collect	9
describe	14	classify	18	change	9	categorize	19	choose	10	combine	14
draw	5	compare	11	choose	11	classify	10	compare	18	compile	7
duplicate	7	contrast	7	classify	6	compare	24	conclude	13	compose	19
identify	20	convert	13	complete	5	conclude	6	contrast	8	construct	29
indicate	4	defend	12	compute	10	contrast	19	core	6	create	19
label	21	demonstrate	6	construct	13	correlate	5	counsel	4	design	24
list	27	describe	22	demonstrate	20	criticize	11	create	4	develop	18
locate	10	differentiate	8	develop	4	debate	8	criticize	11	devise	13
match	14	discuss	21	discover	8	deduce	6	critique	14	estimate	5
memorize	10	distinguish	12	dramatize	16	detect	7	decide	4	evaluate	4
name	22	estimate	11	employ	16	diagnose	4	defend	15	explain	8
order	5	explain	28	experiment	6	diagram	12	describe	4	facilitate	4
outline	11	express	17	explain	5	differentiate	20	design	4	formulate	18
quote	7	extend	11	generalize	5	discover	4	determine	6	generalize	7
read	4	extrapolate	5	identify	4	discriminate	11	discriminate	9	generate	11
recall	24	generalize	11	illustrate	18	dissect	6	estimate	15	hypothesize	8
recite	12	give	4	implement	4	distinguish	21	evaluate	16	improve	5
recognize	14	give examples	8	interpret	15	divide	12	explain	9	integrate	4
record	13	identify	14	interview	6	evaluate	4	grade	4	invent	10
relate	11	illustrate	9	manipulate	10	examine	18	invent	8	make	6
repeat	20	indicate	8	modify	12	experiment	9	judge	25	manage	8

<https://uwf.edu/media/university-of-west-florida/academic-affairs/departments/cutla/documents/Blooms-Taxonomy-Table-of-176-verbs-Stanny-2016-1.pdf>

# Other considerations before writing an SLO

## ▶ Program vs Course

- ▶ *Program level SLOs* are typically ***broad in nature*** and describe the knowledge, skills, and attitudes a student will possess upon completion of the program of study.
- ▶ At least one for each domain: content, critical thinking, communication, integrity/values
- ▶ *Course level SLOs* are typically much ***more specific and granular in nature*** and describe the knowledge, skills, and attitudes a student will possess upon completion of a particular course. It is useful to think of courses as part of a coherent program of study (pieces of a puzzle) that work together with other courses to give students the knowledge, skills, and attitudes needed to be successful upon graduation.
- ▶ Course level SLOs should map to program level SLOs.



# Other considerations before writing an SLO

## ▶ Undergraduate vs Graduate

- ▶ SLOs for graduate-level programs and courses should reflect *more advanced academic content and skill*.
- ▶ SLOs for graduate-level programs should include *knowledge of the disciplinary literature and skills in research and/or professional practice*.

# Example and Assessment Consideration

- ▶ **Original SLO:**
  - ▶ Explore types of treatment for ankle injuries.
  - ▶ Issues with this SLO?
- ▶ **Improved SLO:**
  - ▶ Describe treatments for an ankle injury.
  - ▶ Can this SLO be better still?
- ▶ **Better SLO:**
  - ▶ Write a paper that describes appropriate interventions and treatments for the range of ankle injuries.

# ALCs and ALPs

- ▶ Documents that list program level SLOs.
- ▶ Academic Learning Compact (ALC) describes program-level student learning outcomes for *undergraduate* programs.
- ▶ Academic Learning Plan (ALP) describes program-level student learning outcomes for *graduate* programs.
- ▶ Listed on the Institutional Effectiveness (IE) website in compliance with UWF Policy and BOG regulation.
- ▶ IE will work with the department to prepare these documents once the CCR has been approved for a program.

# Curriculum Maps

- ▶ All academic programs should have a curriculum map that shows the alignment of courses to program level Student Learning Outcomes.
- ▶ Curriculum maps are required for CCR submissions for programs of study and posted on IE website.
- ▶ Valuable for identifying potential curriculum gaps.
- ▶ Better curriculum maps include information on how the course fits in the program of study (introduction, reinforcement, or mastery).

	Introductory Course	Research Methods	Advanced Content Course A	Laboratory / Practicum Course	Advanced Content Course B	Advanced Content Course C	Advanced Content Course D	Capstone Course
<b>Content</b>								
SLO 1: Disciplinary knowledge base (models and theories)	Introduced		Reinforced		Reinforced	Reinforced	Reinforced	Mastery / Assessed
SLO 2: Disciplinary methods		Introduced		Reinforced		Reinforced		Mastery / Assessed
SLO 3: Disciplinary applications	Introduced		Reinforced		Reinforced		Reinforced	Mastery / Assessed
<b>Critical Thinking</b>								
SLO 4: Analysis and use of evidence		Introduced		Reinforced	Reinforced		Reinforced	Mastery / Assessed
SLO 5: Evaluation, selection, and use of sources of information	Introduced	Reinforced		Reinforced		Reinforced		Mastery / Assessed
<b>Communication</b>								
SLO 6: Written communication skills	Introduced	Reinforced		Reinforced		Reinforced		Mastery / Assessed
SLO 7: Oral communication skills		Introduced	Reinforced		Reinforced	Mastery / Assessed		
<b>Integrity / Values</b>								
SLO 8: Disciplinary ethical standards		Introduced		Reinforced	Reinforced			Mastery / Assessed
SLO 9: Academic integrity	Introduced	Reinforced	Reinforced	Reinforced		Reinforced		Mastery / Assessed

# Curriculum Maps

- ▶ Can also include detailed information on specific assignments that can be used to collect assessment data to inform program-level learning.
- ▶ Template and multiple examples for curriculum maps are available at: <https://uwf.edu/academic-affairs/departments/cutla/supporting-pages/curriculum-maps-guidelines/>

# 5-Year Assessment Plans

- ▶ Departments should create an assessment plan that ensures that every program-level SLO is examined through a full cycle of assessment (2-3 years) during a five-year period.
- ▶ A full cycle of assessment is
  - ▶ Base data collection
  - ▶ Implementation of changes
  - ▶ Reassessment for impact

Date: October 2019		Program Name: Paris Desserts		CIP Code: 98.1234		Department: French Culture	
5-Year Assessment Plan		Year 1	Year 2	Year 3	Year 4	Year 5	
Domain	Program-Level Student Learning Outcome (From ALC or ALP)	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	
Content	Identify and describe the varieties of authentic pâtisserie		<b>Data Collection Measure:</b> Exam questions. <b>Gather baseline data.</b>	<b>Reflection on and Use of Findings:</b> Implement actions for improvement	<b>Data Collection Measure:</b> Exam questions. <b>Follow-up assessment (impact data).</b>		
Communication	Accurately describe size, appearance, and quality of pâtisserie	<b>Data Collection Measure:</b> Student paper (rubric). <b>Gather baseline data.</b>	<b>Reflection on and Use of Findings:</b> Implement actions for improvement	<b>Data Collection Measure:</b> Student paper (rubric). <b>Follow-up assessment (impact data).</b>			<b>Data Collection Measure:</b> Student paper (rubric). <b>Gather data to monitor performance.</b>
Critical Thinking	Evaluate flavor and presentation of pâtisserie	<b>Data Collection Measure:</b> Student paper (rubric). <b>Gather baseline data.</b>	<b>Reflection on and Use of Findings:</b> Implement actions for improvement	<b>Data Collection Measure:</b> Student paper (rubric). <b>Follow-up assessment (impact data).</b>			<b>Data Collection Measure:</b> Student paper (rubric). <b>Gather data to monitor performance.</b>
Integrity / Values	Adhere to professional standards in acquisition and evaluation of pâtisserie		<b>Data Collection Measure:</b> Supervisor/Employer feedback (Internship project). <b>Gather baseline data.</b>	<b>Reflection on and Use of Findings:</b> Implement actions for improvement	<b>Data Collection Measure:</b> Supervisor/Employer feedback (Internship project). <b>Follow-up assessment to document impact.</b>		

Center for University Teaching, Learning, and Assessment (2019)

uwf.edu/cutla/

#### Assessment Activity

Gather baseline data  
 (Revise rubric; gather data)  
 Implement actions for improvement  
 Follow-up assessment (impact data)  
 Gather data to monitor performance

#### Methods of Assessment

<b>Direct Measures:</b> Exam questions Student paper (rubric) Presentation (rubric)	<b>Indirect Measures:</b> Focus group Exit interview Alumni survey	<b>External Direct Measures:</b> Supervisor/Employer feedback External Professional Exam
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#### Minimum steps for a full assessment cycle:

- (1) Gather initial data (direct measures)
- (2) Reflect on findings
- (3) Implement actions (if any)
- (4) Gather follow-up data on impact (direct measures)

**NOTE:** Plan describes 2 data collection activities in each year.

# 5-Year Assessment Plans

- ▶ 5-Year Assessment Plans are required for program CCRs but can be updated any time.
- ▶ 5-Year Assessment Plans are posted on the IE Website.
- ▶ Templates and samples are available on the CUTLA website:  
<https://uwf.edu/academic-affairs/departments/cutla/services-for/assessment/>

Questions?



# CUTLA Resources

- ▶ Writing Student Learning Outcomes for Course Syllabi
  - ▶ <https://uwf.edu/academic-affairs/departments/cutla/supporting-pages/writing-slos-for-course-syllabi/>
- ▶ Writing and Assessing Student Learning Using Bloom's Taxonomy
  - ▶ <https://uwf.edu/academic-affairs/departments/cutla/services-for/assessment/>
- ▶ Writing Measurable Student Learning Outcomes
  - ▶ [https://uwf.edu/media/university-of-west-florida/academic-affairs/departments/cutla/documents/Writing-Measurable-Student-Learning-Outcomes\(2019\).pdf](https://uwf.edu/media/university-of-west-florida/academic-affairs/departments/cutla/documents/Writing-Measurable-Student-Learning-Outcomes(2019).pdf)
- ▶ Writing and Evaluating Graduate Level Student Learning Outcomes
  - ▶ <https://uwf.edu/academic-affairs/departments/cutla/services-for/assessment/>
- ▶ Curriculum Map Guidelines
  - ▶ <https://uwf.edu/academic-affairs/departments/cutla/supporting-pages/curriculum-maps-guidelines/>
- ▶ 5-Year Assessment Plan Resources
  - ▶ <https://uwf.edu/academic-affairs/departments/cutla/services-for/assessment/>

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