

A Guide for Writing Program Learning Outcomes (PLO)

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Office of Institutional Research, Planning, and Effectiveness

A Guide for Outcomes:

Every Academic Program must have clearly defined Program Level Student Learning Outcomes. These outcomes describe the level of knowledge, skills, and abilities that a graduate will possess at the end (or as a result) of their experiences and learning in their program of study.

Outcomes should:

Contain an action verb that describes an observable or identifiable action

Poor Example: Graduates will have an appreciation for classical music.

Better Example: Graduates will be able to identify the characteristics of classical music using standard notation.

Poor Example: Graduates will understand military theory.

Better Example: Graduates will critically evaluate the use of military theory to explain various military techniques.

Be focused and not contain multiple action verbs

Poor Example: Graduates will be able to think critically, asses, and evaluate the neoclassical art movement and how it coincided with Romanticism.

Better Example: Graduates will be able to critically evaluate neoclassical art by describing how it differs from Romanticism.

Poor Example: Graduates will identify an issue, develop and arguable thesis about the issue, locate relevant supporting evidence, analyze the evidence, and draw a well-supported conclusion. *Better Example:* Graduates will be able to apply research methodology and systematic analysis.

 Focus on the student as the performer - What is the student expected to be able to know, think, or do?

Poor Example: Graduates will join a professional organization.

Better Example: Graduates will reflect on their membership of a professional organization.

Poor Example: The program will offer graduates the opportunity to build their research skills by conducting authentic laboratory experiments.

Better Example: Graduates will design an experiment that tests a valid hypothesis.

Be appropriate for the level of learning, i.e., undergraduate vs. graduate

Undergraduate level (1000-4000 level courses)

Poor Example: Graduates will conduct an individual research project.

Better Example: Graduates will develop a plan for an individual research project.

Poor Example: Graduates will evaluate effective leadership principles. *Better Example:* Graduates will identify effective leadership principles.

Poor Example: Graduates will recall the basic theoretical principles of the discipline. *Better Example:* Graduates will criticize complex theoretical principles of the discipline.

Poor Example: Graduates will explain the role of entrepreneurs in managing businesses. Better Example: Graduates will assess the role that the global business environment plays in organizational business decisions.

Tip: If you decide to have multiple action verbs in a single outcome, you must make sure that you are assessing ALL parts of the learning outcome. This is easily achieved by having multiple measurements for a single learning outcome. (Parisa's Tip: using multiple measurements for a single learning outcome is an advanced assessment technique and I do not recommend utilizing it at this point – so I urge you to focus on a single action verb and a single measurable concept or objective per outcome. We can enhance complexity as we move forward in the assessment process over time; this gives us room to grow. But let's work at keeping it simple for now.)

Finding the right action verb

Using Bloom's Revised Taxonomy is an easy way to find usable action verbs when developing student learning outcomes. Bloom's Taxonomy classifies thinking according to six cognitive levels of complexity.

The levels are ordered from simple and concrete to complex and abstract, with "Creating" being the highest level of thinking.

A correlation can easily be drawn between these levels of thinking and the course level for which the learning outcomes are being developed. For example, the higher levels of thinking, analyzing, evaluating, and creating are generally associated with learning outcomes for graduate courses.

Creating 6000 - 7000 level courses

Evaluating 5000 - 6000 level courses

Analyzing 4000 - 5000 level courses

Applying 3000 - 4000 level courses

Understanding 2000 - 3000 level courses

Remembering 1000 - 2000 level courses

Bloom's Revised Taxonomy, Six Levels of Thinking

The course levels listed are provided as a guideline. In any course, you may have a variety of learning outcomes at different levels of thinking. The standard rule of thumb is that you should have very few

"Remembering" learning outcomes in upper-level courses and very few "Creating" learning outcomes in lower-level courses.

Bloom's Revised Taxonomy, Six Levels of Thinking Descriptions

Levels	Description				
Creating	Putting elements together to form a coherent or functional whole; reorganizing element into a new pattern or structure through generating, planning, or producing. This includes generating new ideas, products, or ways of viewing things.				
Evaluating	Making judgements based on criteria and standards through checking and critiquing. This includes justifying a decision or course of action.				
Analyzing	Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing, and attributing.				
Applying	Carrying out or using a procedure through executing, or implementing. This is using the information in another familiar situation.				
Understanding	Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining. This is essentially demonstrating understanding of information by explaining ideas or concepts.				
Remembering	Retrieving, recognizing, and recalling relevant knowledge from long-term memory. This level is simply remembering or recalling previous learned information.				

^{*}Table reproduced from http://thepeakperformancecenter.com/educational-learning/thinking/blooms-taxonomy/blooms-taxonomy-revised/

The following table provides examples of action verbs you could use for each level of the taxonomy.

Level	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Action	 Arrange 	 Classify 	 Apply 	 Analyze 	 Appraise 	 Build
Verbs	 Choose 	 Compare 	 Build 	 Categorize 	 Evaluate 	 Change
	 Identify 	 Contrast 	 Construct 	 Classify 	 Assess 	 Compile
	 Label 	 Demonstrate 	 Develop 	 Compare 	 Conclude 	 Construct
	• List	 Describe 	 Operate 	 Discover 	 Criticize 	 Develop
	 Match 	 Explain 	 Organize 	 Dissect 	 Disprove 	 Design
	 Memorize 	 Illustrate 	 Plan 	 Distinguish 	 Interpret 	 Formulate
	 Recall 	 Outline 	 Produce 	 Examine 	 Measure 	 Modify
	 Recite 	 Rephrase 	 Select 	 Outline 	 Prioritize 	 Propose
	• Tell	Show	 Solve 	 Research 	 Recommend 	 Solve
	• Write	 Summarize 	 Utilize 	 Test for 	 Value 	• Test

Tip: Often, verbs such as "know" and "understand" are used in learning outcomes, but how does one truly assess knowing and understanding? Using action verbs such as "explain", "compare" and "contrast", and "demonstrate" is more precise and can help you determine how to evaluate learning more accurately.

Common Mistakes to Avoid When Writing Student Learning Outcomes

The learning outcomes include words that are hard or impossible to measure.

Avoid terms such as understanding, develop awareness, possess a level of comfort, appreciate, become aware of, become familiar with, know, and learn. Use Bloom's Taxonomy to find good verbs for writing student learning outcomes.

- The learning outcomes include too many skills in one statement.
 - Have only one skill per statement. If multiple skills are included, the outcome becomes complex and difficult to measure. An easy fix is to separate skills into two learning outcomes.
- The learning outcome is not a learning outcome and is more of a check box.
 - For example: "The graduate will complete a self-assessment survey." Or "The graduate will utilize the Career Services office."

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- There are too many learning outcomes.
 - It is important to keep this manageable. No department can assess 30 program level student learning outcomes in a year. It is advised to keep things focused and prioritize learning outcomes to those that are necessary and important to the discipline

For more information or assistance regarding outcomes, contact Parisa Baker, Director, Office of Institutional Research, Planning, and Effectiveness at PBaker@thenicc.edu