



RRC POLYTECH

Learning Outcomes

MANUAL

Learning Outcome Guidelines

Learning Outcomes are specific, measurable and attainable statements of learning that describe what a student should know and be able to do at the end of the learning process.

Learning Outcomes communicate clear, consistent and transparent expectations. They are written from a learning perspective to identify the knowledge, skills and behaviours to be demonstrated at the end of a course, program and/or college education.

[College-Wide Learning Outcomes](#) describe the skills and abilities that all RRC Polytechnic graduates should have to work in the global economy.

Program Learning Outcomes (also referred to as Graduate Profiles) identify program specific skills and abilities that the program graduates should be able to demonstrate.

Course Learning Outcomes describe the result of learning acquired in courses.

Elements of Performance are measurable or observable descriptors that clarify what the student needs to do to attain the course learning outcomes.

Programs include a number of courses that collectively contribute to meeting the program learning outcomes. Courses align with and integrate into the program at an appropriate level. Courses may be **Foundational** (introducing students to concepts and skills), **Reinforcing** (building on or reinforcing concepts), or **Culminating** (integrating and applying learning). Articulating outcomes at the program and course level ensures alignment and contributes to curriculum development and planning. Developing unique learning statements minimizes duplication and overlap of learning outcomes.

Learning Outcomes integrate knowledge, skills and abilities. A learning outcome statement includes three (3) parts:

- **Action verb:** identifies the measurable/observable behaviour or action
- **Learning statement:** identifies the learning focus, what the student will demonstrate
- **Purpose or condition:** provides the context for the action/behaviour

Elements of Performance add specific details to:

- Clarify the learning outcome statement
- Identify components of the performances necessary to demonstrate the learning outcome
- Indicate the standard or level that students will be assessed against
- Guide selection of lessons/units, instructional activities and assessment strategies

Course Learning Outcomes

What does a student need to know and be able to do at the end of your course? Are there key concepts, skills, behaviours or abilities that a student needs to learn, practice and apply? What level of learning is appropriate for the course and its placement in the program? The **course description** may include information that will help to guide development of your learning outcomes.

Learning outcomes use action verbs to indicate the complexity of learning appropriate for the course and its level in the program. The action verb used in the learning outcome is important in setting the level of expectation.

Elements of Performance are the descriptors that provide additional detail to describe specific and measurable components of learning. They also indicate the level or standard of performance required.

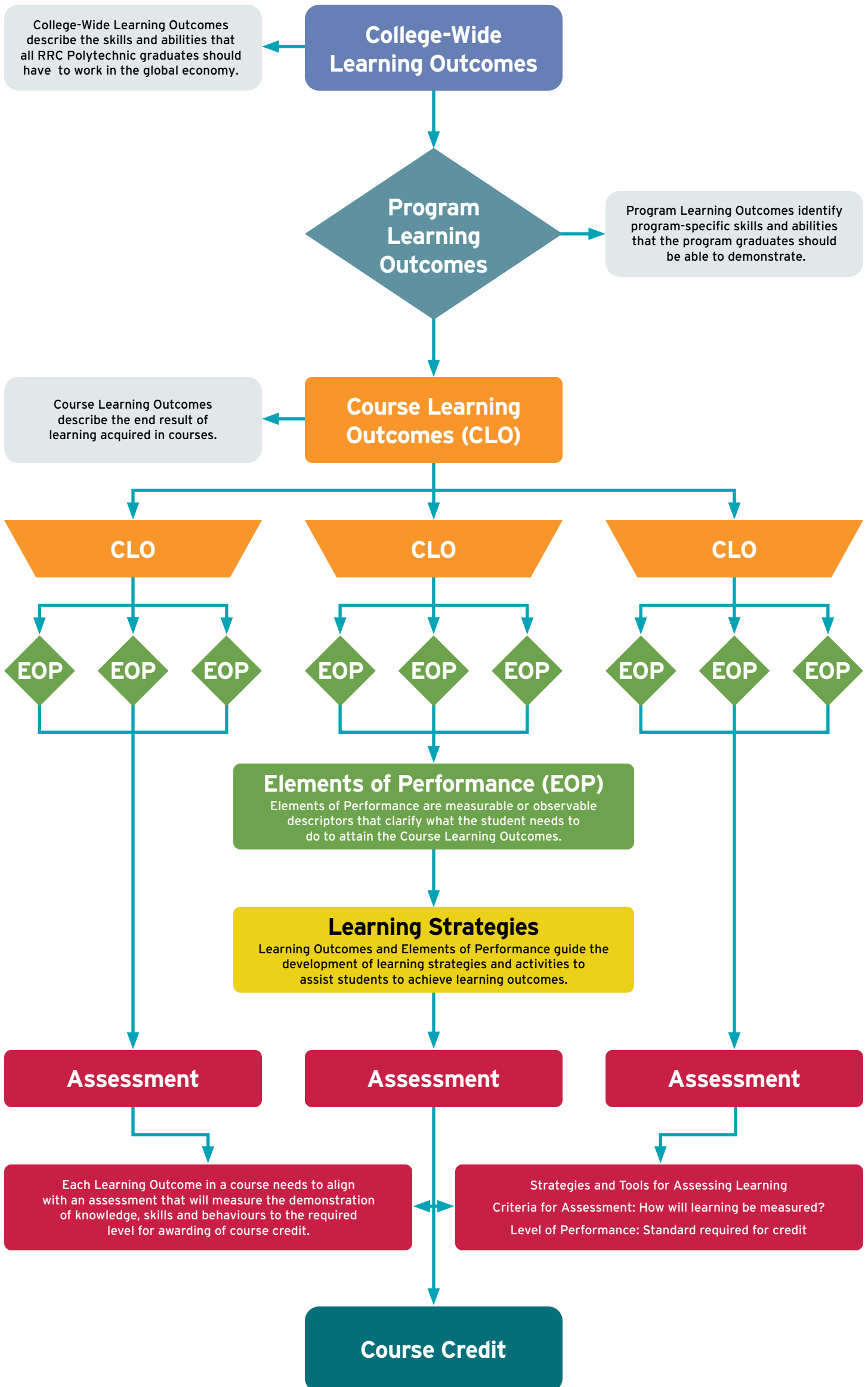
Learning Outcomes and Elements of Performance guide the development of learning strategies and activities, assessment methods, criteria for assessment and level of performance required for course credit. Each Learning Outcome in a course needs to align with an assessment that will measure the demonstration of knowledge skills and behaviours to the required level for awarding of course credit.

Guidelines to assist you to develop your learning outcomes:

- Identify what a student should know and be able to do after completing your course
- Identify how you would know a student was successful in demonstrating the learning
- Begin your learning outcome with an Action Verb, include a Learning Statement, and provide the Purpose or Condition
- Use one action verb for each learning outcome to describe the appropriate cognitive, affective, psychomotor or digital level (Blooms Taxonomy)
- Use plain language and words that are easy to understand to ensure transparency
- Develop 10 – 13 learning outcomes for a 45-hour course
- Include objective criteria and standards to guide assessment strategies
- Identify the minimum acceptable standard a student would need to demonstrate
- Ensure learning outcomes align with the course level (Foundational, Reinforcing, Culminating) and are observable, measurable and attainable
- Avoid using verbs such as know, understand, learn, and recognize that are not observable or measurable
- Ensure the course learning outcome aligns with or contributes to achievement of a program learning outcome
- Use Learning Outcomes and Elements of Performance to guide development of learning strategies, assessment methods, criteria for assessment and level of performance

Approved by Senior Academic Committee June 2020

Learning Outcomes Process Map



Red River College Polytechnic Guide to Learning Outcomes

Table of Contents

Introduction	2
Learning Outcomes	2
The Importance of Well-Written Learning Outcomes	2
Qualities of a Good Learning Outcome	3
How to Write Learning Outcomes	3
Examples of Strong Learning Outcomes vs Weak Learning Outcomes.....	4
Examples of Scaffolding Learning Outcomes	6
Elements of Performance.....	6
Adding Elements of Performance to Learning Outcomes.....	7
Checklist Questions for Writing Learning Outcomes	8

Introduction

Learning outcomes are important for both students and instructors. Clear learning outcomes help students understand what they should know and be able to do at the end of a course. Learning outcomes also guide instructors, and help to ensure that course content, delivery and assessment is at the appropriate level.

Learning Outcomes

Learning outcomes are specific, measurable and attainable statements of learning that describe what a student should know and do at the end of the learning process.

Learning outcomes communicate clear, consistent and transparent expectations. They are written from a learning perspective to identify the knowledge, skills and behaviours demonstrated at the end of a course, program and/or college education.

At Red River College Polytechnic, the Senior Academic Committee (SAC) is responsible for the internal approval of all new programs of study and significant modifications to all academic programs. Program and course learning outcomes are approved by SAC as part of new and significant program proposal submissions.

Learning outcomes are included in the approved course outline which is provided to students on the first day of the course.

The Importance of Well-Written Learning Outcomes

It may take practice to develop strong learning outcomes.

Remember, clearly defined and well-written learning outcomes help...

- Instructors prioritize content, focusing on the most important elements for successful course completion.
- Instructors design appropriate activities and assessments to support learning.
- Students understand course expectations and approach the course with a learning focus.
- All stakeholders see how courses fit together without duplication.
- Programs map out course sequencing to build complexity.

Qualities of a Good Learning Outcome

The key question to ask when evaluating a learning outcome is “Can it be assessed?” Well-written learning outcomes are easily measurable and align with the purpose of the course. Learning outcomes describe a knowledge, skills and behaviours that are visible and measurable.

Each learning outcome should start with an action verb that sets the measure of expectation for a particular course and its level in the program. The verb used in the cognitive domain should reflect one of the six (6) categories identified in Bloom’s Taxonomy.

From lowest to highest, Bloom’s six categories are:

Foundational level – *introducing students to concepts and skills:*

1. Remember – student is able to recall relevant knowledge from long-term memory
2. Understand – student is able to explain ideas and concepts

Reinforcing level – *building on or reinforcing concepts:*

3. Apply – student is able to use knowledge gained in new ways
4. Analyze – student is able to break concepts into parts and make connections and comparisons

Culminating level – *integrating and applying learning:*

5. Evaluate – student is able to make judgements based on a set of guidelines
6. Create – student is able to design new and innovative concepts and ideas

How to Write Learning Outcomes

Learning outcomes integrate knowledge, skills and abilities. A learning outcome statement includes three (3) parts:

- **Action verb:** identifies the measurable/observable behaviour or action
- **Learning statement:** identifies the learning focus, what the student will demonstrate
- **Purpose or condition:** provides the context for the action/behaviour

Here are examples of appropriate verbs that can be used at the different levels of learning and assessment:

Appropriate Action Verbs to Use in Learning Outcomes Based on Learning Level		
Foundational Level: <i>Remember and Understand</i>	Reinforcing Level: <i>Apply and Analyze</i>	Culminating Level: <i>Evaluate and Create</i>
Recall	Demonstrate	Critique
Name	Solve	Evaluate
Describe	Show	Appraise
Identify	Implement	Conclude
List	Apply	Assess
Explain	Predict	Justify
Summarize	Analyze	Design
Define	Compare	Devise
Reproduce	Differentiate	Modify
State	Examine	Combine

Avoid using verbs such as *know*, *understand*, *learn*, and *recognize* that are not observable or measurable.

Use *one* action verb for each learning outcome statement. This identifies the level of learning expected and helps to determine the appropriate assessment. When two verbs are used in a learning outcome statement, a student may meet a portion of the outcome, but not all of the requirement.

Ensure the verb used is at the appropriate level of Bloom’s Taxonomy. Consider whether a higher level verb could satisfactorily assess both the foundational level as well as the higher level. (i.e. in order to *evaluate* something, a student would have to be able to *describe* it effectively).

Examples of Strong Learning Outcomes vs Weak Learning Outcomes

The keys to a strong learning outcome –

- Concise
- Specific i.e. observable and measurable
- Clearly stated i.e. anyone reading the outcome understands the learning and skill achieved upon course completion
- Student-focused i.e. describing what a student will know, believe and do as a result of the material they learn, NOT what the instructor does in the classroom.
- Comprised of an action verb(s), a subject and context

See example chart on next page.

By the end of this course of study, students should be able to...

Example 1: Identify the elements of an engine, including spark plug, valves, piston and sump, in a domestic vehicle older than 2005.

Analysis: This is a great learning outcome. It has a clearly measurable verb while also defining the scope of what we want to see from the student.

Example 2: Design a marketing plan to meet professional Canadian business standards.

Analysis: This learning outcome assumes the student has already met Introductory level learning by using a verb from the Culminating category. The addition of the specific standard gives the student a clearly defined scope to produce this assessment.

Example 3: Understand the principles of effective communication in a business environment.

Analysis: This does not start with an action verb or define the level of learning a student should achieve. There is no way to clearly evaluate or assess a student's understanding.

Improvement: Explain the five principles of effective communication in a business environment.

Example 4: Communicate effectively in a professional environment.

Analysis: While it does start with an action verb, there is no context to ensure the outcome is specific and measurable, making effective assessment difficult.

Improvement: Communicate effectively in a professional environment through technical reports and in-person presentations.

Example 5: Describe and create a marketing plan.

Analysis: There are two verbs here requiring the student to demonstrate two different things at two different levels of Bloom's Taxonomy. Utilize the higher-level verb as it should encompass the lower level verb as well.

Improvement: Create a marketing plan for your organization.

Example 6: Explain the benefits of various exercise modalities for an elderly person.

Analysis: The outcome describes what this particular lesson will teach, not what the student should be able to do.

Improvement: Determine the most appropriate exercise modality for health maintenance in a patient who is elderly.

Example 7: Learn the elements from the periodic table.

Analysis: It is impossible to simply measure learning. More context to describe specifically what will be measured is needed.

Improvement: Identify the elements from the periodic table based on their symbols.

Examples of Scaffolding Learning Outcomes

Scaffolding learning outcomes refers to a schedule of learning progressively moving the student toward greater independence and understanding through the learning process.

This example of a course scaffolding learning outcomes uses verbs from all levels. The learning outcomes follow a sequential order to show the student's progression through the learning material.

By the end of this course of study, students should be able to...

1. Describe the role of assessment and evaluation in education.
2. Identify the three main types of assessment used in education.
3. Differentiate between formative and summative assessment in face to face learning environments.
4. Compare different types of assessment for use in the online learning environment.
5. Determine authentic assessments for a variety of learning outcomes.
6. Evaluate the efficacy of the three main assessment types for online learning environments.
7. Design an appropriate alternative assessment (non-exam based) for a practical course delivered in an online format.

Learning outcomes 1 and 2 fall under the Foundational Level of *Remembering* and *Understanding*.

Outcomes 3, 4 and 5 fall under the Reinforcing Level of *Applying* and *Analyzing*.

Outcomes 6 and 7 require a student to demonstrate the highest level of learning, the Culminating Level of *Evaluating* and *Creating*.

Elements of Performance

Elements of performance provide clarification of what the student needs to do to attain the course learning outcomes. These descriptors provide transparency and guide development of course learning activities and assessments.

Elements of performance:

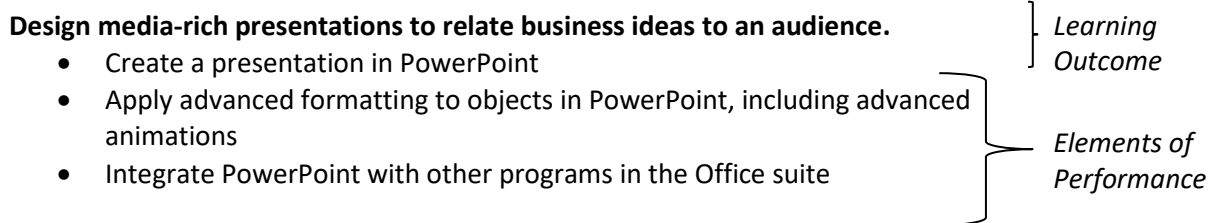
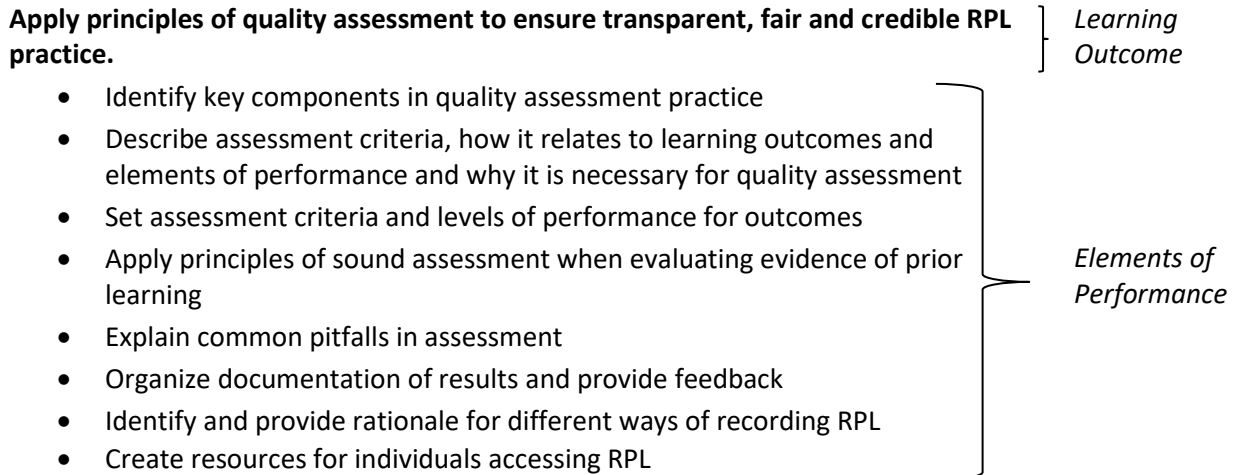
- Clarify the learning outcome statement
- Identify components of the performance necessary to demonstrate the learning outcome
- Indicate the standard or level that the student will be assessed against
- Guide selection of lessons / units, instructional activities and assessment strategies

Please note that the learning outcome establishes the level of learning required by using the appropriate action verb. Elements of performance use verbs that either match or are at a lower level than the learning outcome verbs.

Adding Elements of Performance to Learning Outcomes

Including elements of performance can help contextualize the learning outcomes and break down specifically what a student should be able to do upon successful completion of a course of study.

Here are some examples:



Note the elements of performance specifically describe what actions a student should be able to perform to achieve the learning outcomes. They do not describe what an instructor will be teaching. This is an important differentiator.

The elements of performance also assist in developing clear assessment criteria that identify the competencies a student must be able to demonstrate to successfully complete the course.

Checklist Questions for Writing Learning Outcomes

Use the following questions to assess the strength of your learning outcomes.

- ✓ **Observable** - Does the learning outcome identify what students should be able to do after the topic is covered?
- ✓ **Measurable** - Is it clear how you would test achievement of the learning outcome? Can students reasonably determine from the learning outcome whether or not they have achieved it?
- ✓ **Achievable** - Can the learning outcome be realistically accomplished at the end of the course?
- ✓ **Clear and Specific** - Does the chosen verb have a clear meaning?
- ✓ **Aligned with expectations** - Is the verb aligned with the level of cognitive understanding expected of students? Could you expect a higher level of understanding?

Writing Effective Learning Outcomes

Focus questions:

1. Who are your students? (*i.e.: Characteristics? Prior knowledge? Prior experience?*)
2. Where does this course fit in the overall program? (*Introductory? Builds on prior knowledge? What should students already know/be able to do when starting this course?*)
3. What should students know/think/do at the end of this course?

Learning Levels: Foundational – F Reinforcing – R Culminating – C

Remember:

- Use action verbs that identify a measurable/observable behavior or action.
- Include a learning statement that identifies the learning focus or what the student will demonstrate.
- Ensure there is a purpose or condition that provides context for the behavior.

Example:

Learning Outcome:	<i>By the end of this course of study, students should be able to...</i>		
LO 1	Design (action verb)	media-rich presentations (learning statement)	to relate business ideas to an audience. (purpose or condition)
Learning level: C	<i>Elements of Performance:</i> 1.1 – Create a presentation in PowerPoint 1.2 – Apply advanced formatting to objects in PowerPoint, including advanced animations 1.3 – Integrate PowerPoint with other programs in the Office Suite		

Type of Assessment	Total Weight (%)	Related Learning Outcome
<i>The following will provide evidence of your learning:</i>	<i>Must add up to 100%</i>	<i>This activity validates the following LO and EOP</i>
New business idea – entrepreneurial pitch: in PowerPoint	15%	LO 1 EOP 1.1
Attach PowerPoint to agenda created in Word and email to board members using Outlook	25%	LO 1 EOP 1.3

Writing Learning Outcomes Template

Learning Outcome:	<i>By the end of this course of study, students should be able to...</i>
LO 1	
Learning level:	<i>Elements of Performance:</i> 1.1 – 1.2 – 1.3 –
LO 2	
Learning level:	<i>Elements of Performance:</i> 2.1 – 2.2 – 2.3 –
LO 3	
Learning level:	<i>Elements of Performance:</i> 3.1 – 3.2 – 3.3 –
LO 4	
Learning level:	<i>Elements of Performance:</i> 4.1 – 4.2 – 4.3 –
LO 5	
Learning level:	<i>Elements of Performance:</i> 5.1 – 5.2 – 5.3 –
LO 6	
Learning level:	<i>Elements of Performance:</i> 6.1 – 6.2 – 6.3 –
LO 7	
Learning level:	<i>Elements of Performance:</i> 7.1 – 7.2 – 7.3 –

*Develop 10 – 13 learning outcomes for a 45-hour course

Bloom's Taxonomy: A Brief Guide

Overview

Bloom's Taxonomy was created by Benjamin Bloom in 1956 as learning classification system. Bloom introduced a hierarchal framework to identify levels of learning in cognitive, psychomotor and affective domains. Bloom's Taxonomy is used in curriculum development to guide development of learning outcomes at the level appropriate for courses and programs. The most recent revision in 2001, separated the cognitive domain into four distinct types: factual, conceptual, procedural and metacognitive.

The framework is a great tool to aid in:

- writing strong learning outcomes
- creating assignments
- evaluating the complexity of assignments
- scaffolding learning within a course
- simplifying activities to help personalize learning where needed
- designing summative assessment
- framing group discussions
- planning project-based learning

Bloom's Taxonomy guides the selection of verbs used in learning outcomes to identify what a student should know and be able to do at the end of a course of study. Instructional practices and activities are chosen to support the learning outcome, and the assessment aligns with and measures the identified learning.

Designed as a pyramid, similar to Maslow's Hierarchy, it visually demonstrates how each level depends on the one below it. The cognitive outcomes build on each other and increase in complexity as you move up the pyramid.

The Six Levels of Bloom's Taxonomy in the Cognitive Domain

Level One: Remember

This level includes recall of facts and concepts. Students are expected to define, duplicate, make lists, memorize and recall and repeat basic information. This is the lowest level in the cognitive framework.

Sample activities at level one include having students recite a poem or passage you have taught them, quote statistics or formulas from memory, lecture notes and reading materials or recall provincial capitals. One way to assess this level of learning is multiple-choice questions.

Level Two: Understand

This level includes explanation of ideas and concepts. Students are expected to explain information, have discussions, describe topics in some detail, report on data, paraphrase and compare and contrast information.

Sample activities at this level can include paraphrasing or explaining concepts in their own words, telling stories that relate to a topic or summarizing a simple story. Students at this level are able to demonstrate comprehension of the material.

Level Three: Apply

The next step of the pyramid requires students to use information they have learned in new situations. They can solve problems, demonstrate ideas and interpret information.

Sample activities that demonstrate application of learning include using a math formula to create a personal budget or design a company balance sheet or applying a marketing strategy to an activity or product they have seen online.

Level Four: Analyze

This level requires that students go beyond the application of learning. They must be able to draw connections between ideas, and differentiate, organize, examine or test their knowledge. At this level, critical thinking becomes an important factor. Students distinguish between things like facts and opinions and are able to break information down into component parts.

Sample activities at level four may include explaining how the steps of the scientific process work together or identifying why something is not working. They are able to deconstruct the thought process.

Level Five: Evaluate

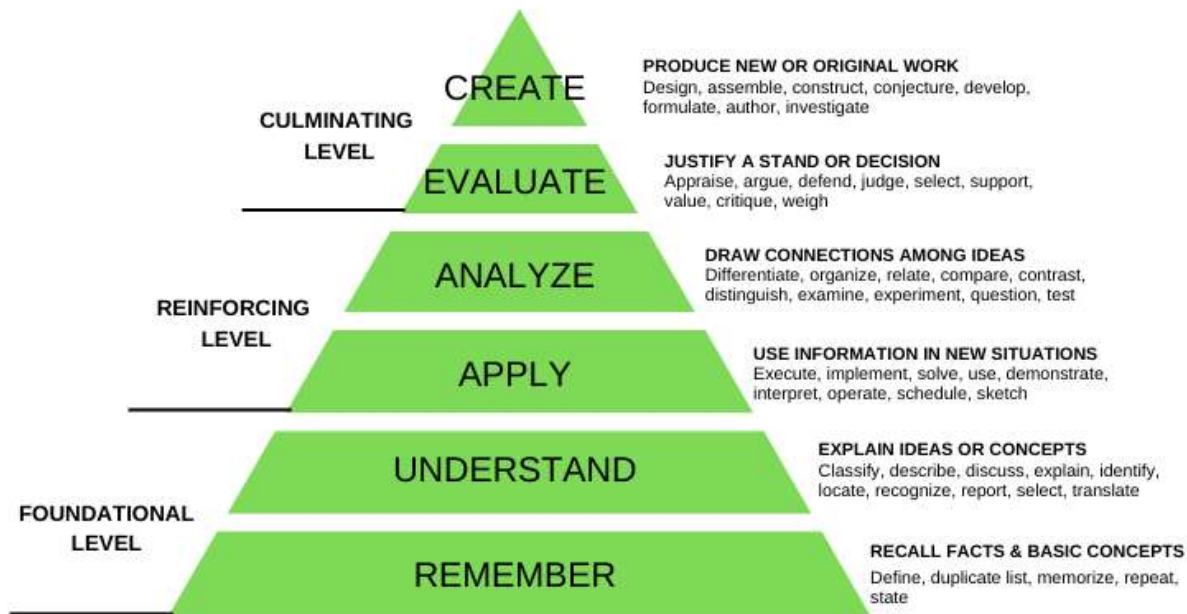
The evaluation level requires that students justify a position or decision, argue, defend and critique concepts and ideas using the knowledge they have gained.

Sample activities at this level require students to make educated judgements about the value of the material they have learned, applied or analyzed. They are able to find solutions to problems and justify specific decisions or positions with supporting knowledge or information.

Level Six: Create

At the top of the pyramid, students produce new or original work. They demonstrate knowledge by applying what they have learned, analyzing and evaluating to create a product that may be tangible or conceptual.

Sample activities at the pinnacle of the pyramid can include designing a product or process or revising a specific process to improve results. Students may work independently or with others to develop new concepts or ideas.



How to Use the Levels of Thinking

It is critical to start at the bottom and work your way up. Lower-order skills may require less cognitive processing, but they provide an important base for learning. Once those skills have been mastered a student may take on the challenge of greater cognitive processing and deeper learning.

Consider when and how to introduce new concepts, when those concepts should be reinforced and how to assess them.

For more information on Bloom’s Taxonomy, please view the following resources:

- [Bloom’s Taxonomy](#)
- [Bloom’s Taxonomy: The Ultimate Guide](#)
- [Using Bloom’s Taxonomy to Write Effective Learning Objectives](#)
- [What Is Bloom’s Taxonomy? A Definition For Teachers](#)
- [Bloom’s Digital Taxonomy](#)
- [Using Reflection to Deepen Learning](#)