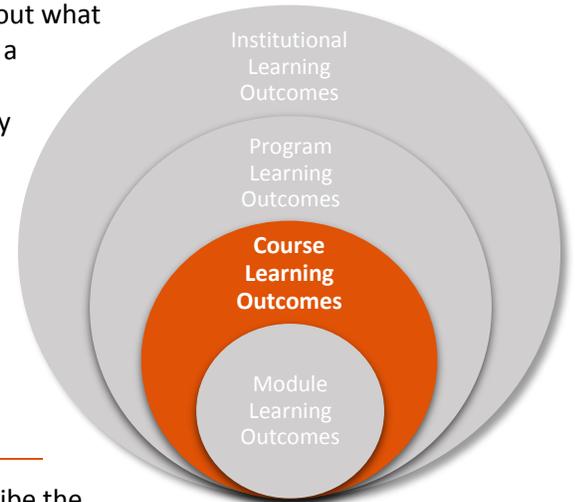# Developing Course-level Learning Outcomes

Learning outcomes are statements that describe our intentions about what students should know, value and be able to do or accomplish after a particular learning experience. They are a tool that helps guide the design of programs, courses, and modules. At the course level, they help instructors select and/or develop effective instructional strategies and assessment tasks, and they make expectations of learning clear to students so they can focus their efforts on what they need to learn and accomplish to be successful.

Program Learning Outcomes vs. Course Learning Outcomes

Program-level learning outcomes are broad statements that describe the significant and essential learning that we want our students to achieve, and reliably demonstrate, after completing ALL required courses in a program (certificate, diploma, degree etc.). This type of outcome reflects complex learning that is the culmination of the knowledge and sub-skills learned in individual courses within the program. Only once students have successfully completed all of the required courses in the program, will they be able to achieve all of the program-level learning outcomes.

Upon successful completion of this **program**, students should be able to

- describe the cultures, economies, social structures, and governmental systems of past civilizations (History)
- apply comprehensive technical skills in lighting, image capture and post-production to a wide variety of subjects (Professional Photography)

In contrast, **course learning outcomes** describe the significant and essential learning that we want our students to achieve, and reliably demonstrate, after completing one particular course. They represent the culmination of knowledge and skills learned in that specific course.

Upon successful completion of this **course**, students should be able to

- identify the principle forces – economic, cultural, intellectual and political – that shaped Europe from the French Revolutionary period to the dawn of the twentieth century (History)
- operate DSLR cameras, light meters and other basic photography tools (Professional Photography)

Benefits of Developing and Using Course Learning Outcomes

Course learning outcomes provide a number of benefits to students and instructors.

Benefits for students

Course learning outcomes

- make expectations of learning clear and transparent to students
- indicate a sense of direction or focus for studying
- help students understand the purpose of assignments and assessments
- improve learning and increase learner motivation
- allow students more autonomy and control over their learning
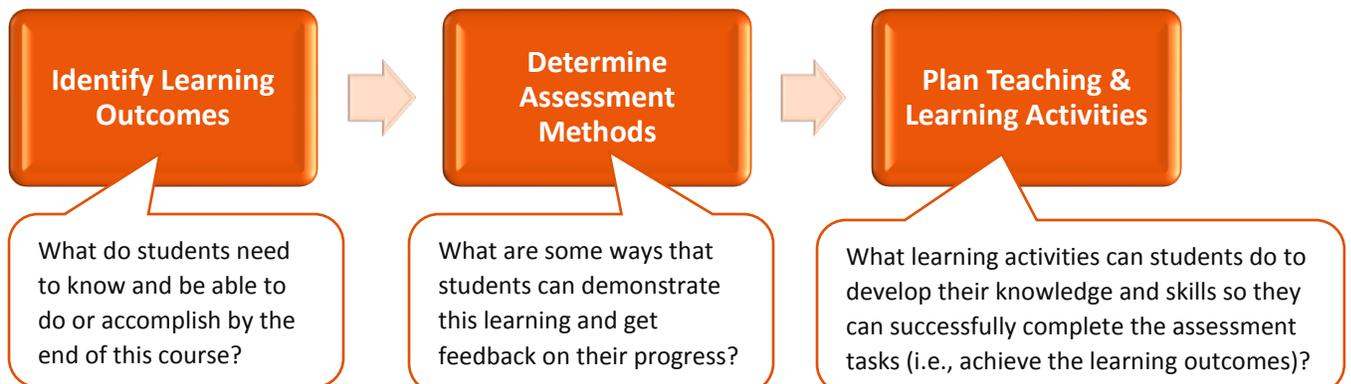
Benefit for instructors and staff

Course learning outcomes

- provide clear, specific aims for a particular course

- facilitate the selection and/or development of assignments and assessment tasks

- simplify the development of marking criteria and/or rubrics

- facilitate the selection and/or development of course materials, instructional strategies and tools

- ensure consistency of learning between different sections of a particular course (all sections have the same learning outcomes, but each instructor chooses the most appropriate instructional strategies for their specific group of learners)

- enable instructors to continuously assess and enhance student learning

- improve alignment and scaffolding of courses within a particular program

- facilitate articulation agreements between institutions
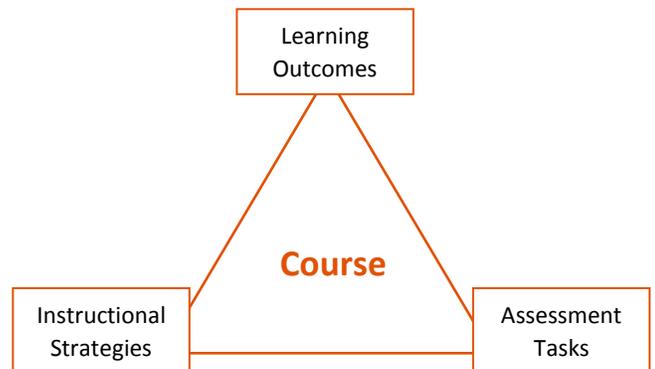
BACKWARDS DESIGN

Identifying learning outcomes first can simplify course design and ensure instructional design stays focused on what the learners need to know and be able to do at the end of the learning experience.

Identify Learning Outcomes → **Determine Assessment Methods** → **Plan Teaching & Learning Activities**

What do students need to know and be able to do or accomplish by the end of this course?

What are some ways that students can demonstrate this learning and get feedback on their progress?

What learning activities can students do to develop their knowledge and skills so they can successfully complete the assessment tasks (i.e., achieve the learning outcomes)?

What to Consider When Developing Course Learning Outcomes

Some factors to consider when writing course learning outcomes include

- **program learning outcomes**
  Course learning outcomes are the stepping stones that help students eventually achieve program learning outcomes. Therefore, it is essential that course learning outcomes align with program-level ones. When developing/ renewing course learning outcomes, consider the follow questions.

  1. What information and skills will students need to learn to accomplish the program level learning outcomes?
  2. How can this information and these skills be broken down into manageable, learnable chunks for our learners?
  3. What might be the best order for students to learn this information and these skills?

- **students' prior learning**
  Learning outcomes from different courses should complement and build upon one another, so it is important to consider what knowledge and skills students (should) have already learned in previous/prerequisite courses. Some questions to consider related to prior learning are

  1. What are the learning outcomes of prerequisite courses?
  2. Would it benefit learners to review this prior learning in this course?
  3. How does the information in this course build on or advance students' prior learning to help them get closer to achieving the program learning outcome?

- **requirements of future courses or learning experiences**
  Similar to considering what students have already learned, it is important to look ahead to the knowledge and skills they will need to successfully complete future courses, programs and/or work-integrated learning experiences or be prepared to begin their career. Some questions to consider are

  1. If you are developing learning outcomes for a first year course, what knowledge and skills will students need by the end of this course to be ready to enter a second year?
  2. What knowledge and skills will students need to successfully complete an upcoming internship, apprenticeship, practicum or co-op semester?

Writing Course Learning Outcomes

Course learning outcomes should

- align with program level learning outcomes
- make expectations of learning clear to students
- reflect **what the student will be able to do or accomplish** at the end of the course rather than what the instructor will do or the means of learning
- be **measurable** or **observable** (not activities or states that are internal to students' minds, i.e., understand, appreciate, know)
- reflect **learning that is core or essential** to the course
- represent a **culmination of learning** and achievement during the course (rather than the acquisition of discrete concepts or skills related to one topic)
- represent the **minimal acceptable level of learning** that a student needs to demonstrate in order to be considered successful
- facilitate or guide the choice of instructional strategies and means of assessment

STRUCTURE OF LEARNING OUTCOMES

Well written learning outcomes include

- a **stem** such as *upon successful completion of this course, students will be able to . . . .*
- an **action verb** or phrase that identifies the observable activity that will be expected of the student, and
- the **learning statement** that specifies what learning will be demonstrated – a concept/idea, skill, attitude or value.

Stem	Action Verb	Learning Statement
By the end of this course, students should be able to	calculate and interpret	measures of central tendency and variation (Statistics)
	identify and assess	a variety of field techniques used by archaeologists to investigate the human past (Anthropology)
	classify, record, and summarize	business transactions as they relate to service and merchandising operations (Accounting)
	find	limits involving algebraic, exponential, logarithmic, trigonometric, and inverse trigonometric functions by inspection as well as by limit laws (Mathematics)
	describe	the absorption, transport, storage and metabolic importance of carbohydrates, lipids and proteins (Biology)
	explain	the basic philosophical problems about the nature of reason, truth, knowledge, belief and experience (Philosophy)
	develop	action plans for problem management and change (Social Work)

CHOOSING OBSERVABLE AND MEASURABLE VERBS

Learning outcomes reflect *our intentions* about what students will learn in our course. If they are observable and measureable, we can design assessment tasks to measure how well our students are able to achieve our intended learning goals. Over time, we can check to see

➢ how many of our learners are actually achieving these intended outcomes
➢ which, if any, of these intended outcomes seem to be the easiest for our students
➢ which, if any, of these intended outcomes seem to be the most challenging and how might we better support our learners in achieving them
➢ which, if any, of these intended outcomes need to be revised or updated

This evidence of student learning helps us continuously enhance our curriculum and our teaching. If our learning outcomes are vague or difficult to measure, we aren't able to later assess what is working well for our students and what we might want to change or improve.

It is also important that our learning outcomes reflect what our students will be able to do AFTER they have completed the course, not what they will do during the course. Here are some examples.

During the Course	**At the End of the Course** (learning outcomes)
Students will	Students will be able to
• explore	• create
• uncover	• apply
• examine	• describe
• learn about	• evaluate
• gain an appreciation for	• critique
• gain an awareness of	• compose
• develop an understanding of	• design
• begin to understand	• paint
• be introduced to	• explain
• develop skills to	• write
• build their confidence in	• illustrate
• develop habits and methods of	• outline
• increase their familiarity with	• compare and contrast
• experiment with	• recommend
• acquire knowledge of	• assemble
• practice	• identify
• . . .	• select
	• chart
	• calculate
	• prepare
	• . . .

ACTION VERBS & LEVELS OF LEARNING

When we write learning outcomes, we use *action verbs* to explicitly state what the learner should be able to do; however, not all action verbs lead to the same level of learning.

- Some verbs such as *label, list,* and *name* require learners to simply **recall information** they have learned.

- Other verbs such as *solve, calculate,* and *implement* require learners to **apply the information or skills** they have learned.

- Still others such as *design, create* and *incorporate* require learners to **combine or synthesize knowledge and/or skills to develop something new**.

The choice of verb we use in the learning outcomes will vary depending on the level of learning we can reasonably expect from our students at the end of a particular course. Using a taxonomy of educational outcomes such as Bloom's taxonomy can help in selecting the appropriate verbs for the course.

TAXONOMY OF LEARNING OUTCOMES

The following table introduces some action verbs commonly associated with different levels of learning. A more comprehensive list of verbs and associated assessment tasks can be found in the TCDC office.

	Introductory		Developing		Proficient	
	Remember	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
Definition	Asks learners to remember or retrieve previously learned information from long-term memory; tell when, how many, who, or where	Asks learners to grasp the meaning of information, interpret ideas, and make predictions; explain, summarize or answer why	Asks learners to use previously learned methods, concepts, principles, and theories in new situations	Asks learners to break something into its constituent parts; determine how parts relate to one another and to an overall structure or purpose	Asks learners to make judgements and give defensible opinions for judgment based on criteria, processes, or standards	Asks learners to put elements together to form something new; reorganize into a new pattern or structure
Verbs	arrange define describe find identify label list match name order outline recall relate report select state	associate compare contrast convert diagram estimate express identify indicate infer interpret paraphrase relate restate summarize translate	apply calculate chart choose compute construct dramatize illustrate implement manipulate modify operate produce sketch solve use	analyze breakdown categorize classify compare connect contrast correlate distinguish divide examine explain model outline separate subdivide	appraise argue assess conclude critique debate decide defend determine discriminate evaluate judge justify prioritize rate recommend	adapt assemble combine compose construct create design develop formulate generate incorporate integrate invent structure synthesize write

Level of Complexity

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Other Useful Resources

University of Western Ontario has a useful set of links to resources:

http://www.uwo.ca/tsc/resources/selected_teaching_topics/curriculum_course_design/learning_outcomes.html

Writing and UsIng Learning Outcomes: A Practical Guide Declan Kennedy, Áine Hyland, Norma Ryan
http://www.procesbolonski.uw.edu.pl/dane/learning-outcomes.pdf