

Writing, Revising and Refining Course Learning Outcomes

This document contains content, reflective questions, and activities to aid in achieving the following objectives:

1. To write effective, clear and meaningful learning outcomes, to think about how those learning outcomes relate to teaching activities, and identify the evidence that demonstrates the learner's ability to achieve those outcomes.
2. To gather and provide feedback on the learning outcomes using guided questions and/or a feedback rubric.

What is a learning outcome?

Learning outcomes are clear statements that describe the competences that learners should possess upon completion of a course (Simon and Taylor, 2009; Anderson et al., 2001; Harder, 2002; Kennedy, 2007). Effective learning outcomes indicate what successful learners should know, value or be able to do by the end of the course or program, as well as the level of understanding of learning that is expected. They are assessable, written from the learners' perspective, focused on what learners can expect to achieve if they have learned successfully. To be assessable, they must specify things that can be observed, that are public, and not activities or states that are internal to learners' minds.

Why are learning outcomes important?

Clearly defined and intentionally integrated course learning outcomes can:

1. help to organize, structure and enhance learning;
2. improve communication with learners and other instructors regarding the important concepts and skills covered in a course; and,
3. improve assessment practices (Simon and Taylor, 2009).

Based on various situational factors and contexts, courses typically contain 5-8 broadly stated learning outcomes that represent a learner's integrated and essential learning within the course.

Learning Outcome Domains

Learning outcomes are often presented separately in the cognitive, psychomotor and affective domains (Table 1), but may also reflect a range of interacting knowledge, skills and attitudes (Harder, 2002; Soulsby, 2009).

Table 1: Domains of learning, with example levels of understanding and common verb associations^a

Domain of Learning	Levels of Understanding	Common Verb Associations
Cognitive (Knowledge) <i>What will learners know?</i>	remembering, understanding, applying, analysing, evaluating, creating	define, identify, describe, differentiate, explain, apply, analyse, resolve, justify, recommend, judge, create, design
Psychomotor (Skills) <i>What will learners value or care about?</i>	imitation, manipulation, precision, articulation, naturalization	adapt, arrange, build, calibrate, construct, design, deliver, demonstrate, display, dissect, fix, mimic, operate, sketch, use, perform
Affective (Attitudes, Values or Habits of Mind) <i>What will learners value or care about?</i>	receive, respond, value, organize, characterize	accept, ask, challenge, choose, consult, demonstrate, discuss, display, dispute, follow, justify, integrate, maintain, participate practice, judge, justify, observe, question, resolve, synthesise

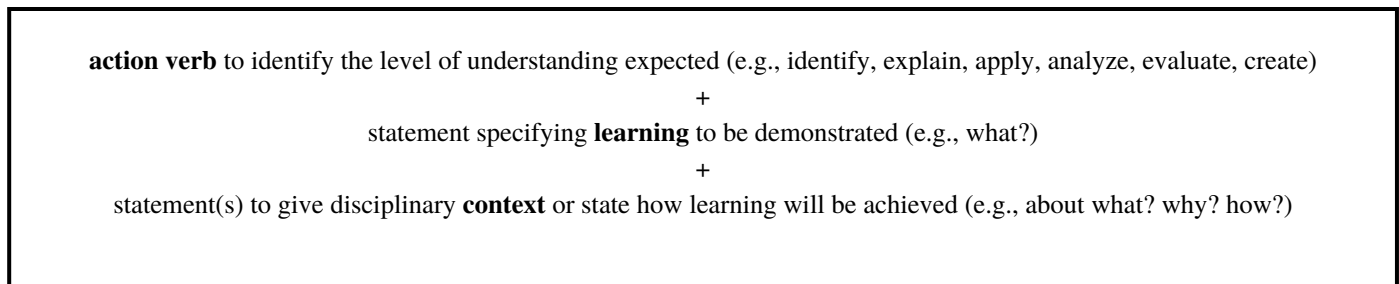
^a See Marzano and Kendall (2007); Kennedy et al. (2006); Anderson et al. (2001); Bloom et. al. (1956; 1964) for further details and examples related to the domains of learning

How do you write a learning outcome (LO)?

There is a simple formula for writing a learning outcome. A learning outcome should start with stem and be completed with an observable action identifying the learning to be demonstrated (e.g., assessment). The stem is reflective of the context in which the learning outcome is being developed for (e.g., course, program, lesson, session, workshop).

For example, the stem could be: *On successful completion of this session, a learner will be able to...*

The stem would then be completed with the details in the box below



See Kennedy (2007) and Soulsby (2009) for additional details and examples related to writing effective course learning outcomes.

The learning outcome should also:

- **Be specific and unambiguous.** Terms such as know, understand, be aware of, grasp, learn, appreciate, comprehend, perceive, see, apprehend, accept, value and be familiar with should be avoided, and the specific level of achievement should be clearly identified.
- **Be observable and assessable.** Focus on observable learner performance that can be assessed. It is often helpful to add the preposition “by” or “through” followed by a statement which clearly states how the LO will be assessed.
- **Be balanced.** Broad LOs are difficult to assess, while an extensive list of learning outcomes will limit flexibility and adaptability in the curriculum and make it difficult for learners and the instructor to communicate an integrated understanding of the subject matter.
- **Be concise and clearly stated.**
- **Be realistic and achievable** given the time and resources available to both learners and instructors.

Table 2 provides examples of direct, assessable, and achievable course learning outcomes that have been modified from broad and ambiguous course learning outcomes. For additional action verbs, please see the table at the end of this document: “[Useful Verbs for Use in Learning Outcomes](#)” and the link to “[Fink’s Taxonomy of Significant Learning](#)”.

Table 2: before and after examples of course learning outcomes

Before: broad and ambiguous	Common Verb Associations
<p><i>Learners will become familiar with plant and animal species in Southern Ontario</i></p> <ul style="list-style-type: none"> • Level of achievement/sophistication expected unclear 	<p>Identify and describe 15 common plant and animal species found in the Carolinian Forest Region through field study and the development of an identification guide</p>
<p><i>Learners will critique works of art</i></p> <ul style="list-style-type: none"> • Additional detail required 	<p>Critique contemporary works of art based on an appropriate set of criteria through studio critiques and an independent essay</p>
<p><i>Learners will be taught various decision-making models</i></p> <ul style="list-style-type: none"> • Teacher-centred, level of sophistication expected unclear 	<p>Apply appropriate decision-making models in business and marketing through participation in a collaborative group project</p>
<p><i>Learners will appreciate the ethical responsibilities of social scientists</i></p> <ul style="list-style-type: none"> • Too broad, unclear how this can be measured 	<p>Assess the ethical implications of research in the social sciences through in-class discussion and an independent written report</p>
<p><i>Learners will learn about research proposals</i></p> <ul style="list-style-type: none"> • Ambiguous, level of sophistication expected unclear 	<p>Develop and present a research proposal (including appropriate research methods and a review of literature) on a relevant topic in primary or secondary education, through an independent presentation and written report</p>

As you write your learning outcomes, ask yourself the following critically reflective questions:

1. Is this outcome public and observable?
2. How will I, and the learners, know when this outcome has been achieved?
3. Does the learning outcome follow from the stem (is it a complete sentence)?
4. Does the learning outcome focus on the ends not the means (what learners will be able to do when they leave the course/program, not the specific assignments they complete in the course/program)?
5. If learners completed your course/program having achieved these learning outcomes, and only these learning outcomes, would you consider the course a success?
6. Why do the skills, concepts, attitudes, and values contained in these learning outcomes matter to you, to your course/program, and to your discipline? Why should they matter to learners?
7. Given the learning outcomes you've chosen, how does this course connect with other courses that are taught (or would likely be taught) in your program?
8. What do your learning outcomes communicate about you as an instructor – your identity, values, concerns, theoretical affiliations, assumptions, presuppositions, etc.?
9. How would you explain why you chose these learning outcomes to someone who asked?

Activity 1: Writing your learning outcomes

Use the table below to guide you in creating your learning outcomes. The number of learning outcomes typically aligns with the length of time available to ensure the outcome(s) is(are) achievable. It varies based on situational factors and contexts. A course typically has 5-8 broadly stated learning outcomes that represent a learner's integrated and essential learning within the course.

Learning outcome stem	action verb to identify the level of understanding expected (see Useful Verbs for Use in Learning Outcomes and Fink's Taxonomy of Significant Learning)	statement specifying learning to be demonstrated (e.g. what?)	statement(s) to give disciplinary context or state how learning will be achieved (e.g. about what? why? how?)
<i>On successful completion of this (program, session, course, lesson), a learner will be able to...</i>			
<i>On successful completion of this (program, session, course, lesson), a learner will be able to...</i>			

Be sure to refer back to the critical reflection questions once you have completed writing your learning outcomes. Consider returning to the questions periodically, particularly after a course is complete or when considering re-designing elements of your course.

Revising and Refining your Learning Outcomes

In addition to critically reflecting on your learning outcomes, you can also revise and refine them through gathering feedback. This could be feedback from your learners or from peers. Below are guiding questions that will help you collect valuable feedback on whether or not they are effective and how your learning outcomes are understood, experienced and perceived by others.

Activity 2: Gathering Feedback on your Learning Outcomes

There are multiple ways feedback on learning outcomes can be collected. A series of questions to guide the process of gathering and providing feedback are listed below. You can also collect feedback using the “Learning Outcomes Feedback Rubric” table below. Please select one or both methods of feedback collection to align with what is suitable for your purpose and goals.

Questions to gather feedback on learning outcomes

1. Does the learning outcome follow from the stem (is it a complete sentence)?
2. Does the learning outcome identify what learners will be able to do after the topic, assignment, lesson, unit, session etc. is complete? Is it about the ends not the means (what learners will be able to do when they have completed the course/program, not the specific assignments they complete in the course/program)?
3. Is the learning outcome observable?
4. Does the learning outcome align with the corresponding learning activities (how it is being facilitated) and evidence of achievement?
5. Does the learning outcome focus on specific and concrete actions, behaviours, or cognitive processes?
6. Is it evident how the learners and instructor will know when the outcome has been achieved and how it will be assessed?
7. Does the learning outcome align with the expected level of knowledge or performance of learners?
8. Does the learning outcome have clear meaning to both instructor and learners? Is the terminology familiar to learners?
9. Is the learning outcome relevant and useful to learners?

Learning Outcomes Feedback

Enter the learning outcomes that you would like feedback on in the blank table below the feedback rubric. When all learning outcomes have been entered, provide the table to those who will be providing feedback. Have each reviewer complete the rubric for each learning outcome.

For those providing feedback: Assess each learning outcome by using the following suggested criteria

Learning Outcomes Feedback Rubric

Criteria			
	Specificity	Accessibility	Clarity
Excellent	The outcome is specific in focus and manageable in scope.	The outcome can be directly and effectively assessed through observable behaviours or performance.	The outcome is written in concrete language that students can picture and easily understand on first reading.
Satisfactory	The outcome is focused, but the scope could be narrowed or enlarged slightly.	It is possible to assess the outcome, but several different assessments may be required.	The outcome is clearly written. Some words or structures might be adjusted to be more concrete and student-friendly.
Developing	The outcome contains many divergent parts that might be better divided into separate outcomes OR this outcome is small enough in scope that it could be combined with another LO.	It is not clear how the outcome can be observed or assessed.	The outcome is somewhat complex or abstract; tweaking the language or structure might make it easier to understand and apply.

<i>Learning Outcome</i>	Specificity	Accessibility	Clarity
e.g., Students will critique works of art	Satisfactory	Developing	Satisfactory
Etc....			

Useful Verbs for Use in Learning Outcomes

The verbs below are examples of active, public and observable verbs that you can use to communicate expectations at each level of Bloom’s Revised Taxonomy, which we’ve adapted and changed to suit our needs. The first column indicates the likely level of complexity or understanding (each list starts with the least complex and moves down to the most complex). The second column suggests some verbs associated with each level of complexity. There is overlap in the categories. These are only suggested verbs. If you there are verbs that are more suitable for your context, please use those verbs.

NOTES: Each level subsumes the ones beneath it. So, for instance, an outcome at the level of application presupposes that learners can remember and comprehend the relevant information. Although the verbs listed pertain specifically to the cognitive domain, some can be used for the affective domain – and all of them are expressed in performative terms! That’s because **cognitive and affective knowledge is often impossible to assess unless it’s integrated with some sort of behaviour!** A visual representation of Bloom’s Revised Taxonomy can be found [here](#).

BLOOM'S REVIED TAXONOMY (Adapted by Potter, 2010)

Level of Complexity or Understanding	Possible Active Verbs
<p>Evaluation</p> <p>Using standards, criteria, theories or processes to judge value</p>	<p>Evaluate, argue, verify, assess, test, judge, rank, measure, appraise, select, check, justify, determine, support, defend, criticize, critique, weigh, assess, choose, compare, contrast, decide, estimate, grade, rate, revise, score, coordinate, select, choose, debate, deduce, induce, recommend, monitor, compare, contrast, conclude, discriminate, explain (why), interpret, relate, summarize</p>
<p>Synthesis / Creation</p> <p>Relating items of information to each other, integrating them, and generating something new</p>	<p>Write, plan, integrate, formulate, propose, specify, produce, organize, theorize, design, build, systematize, combine, summarize, restate, discuss, derive, relate, generalize, conclude, produce, arrange, assemble, collect, compose, construct, create, perform, prepare, propose, strategize, compare, contrast, hypothesize, invent, discover, present, write, deduce, induce, bring together, pretend, predict, strategize, modify, improve, set up, adapt, solve, categorize, devise, explain (why), generate, manage, rearrange, reconstruct, relate, reorganize, revise, argue, extend, project</p> <p style="text-align: right;"><i>Continued below</i></p>

<p>Level of Complexity or Understanding</p>	<p>Possible Active Verbs</p>
<p>Analysis</p> <p>Distilling and/or organizing information into its components; solving problems</p>	<p>Analyze, estimate, detect, classify, discover, discriminate, explore, distinguish, catalogue, investigate, break down, order, determine, differentiate, dissect, examine, interpret, calculate, categorize, debate, diagram, experiment, question, solve, test, dissect, deconstruct, focus, find coherence, survey, compare, contrast, classify, investigate, outline, separate, structure, categorize, determine evidence/premises and conclusions, appraise, criticize, debate, illustrate, infer, inspect, inventory, select, deduce, induce, argue, balance, moderate, identify, explain (how/why)</p>
<p>Application</p> <p>Using information in new situations</p>	<p>Apply, sequence, carry out, solve, prepare, operate, generalize, plan, repair, explain, predict, instruct, compute, use, perform, implement, employ, solve, construct, demonstrate, give examples, illustrate, interpret, investigate, practice, measure, operate, adjust, show, report, paint, draw, collect, dramatize, classify, order, change, write, manipulate, modify, organize, produce, schedule, translate, complete, examine</p>
<p>Comprehension / Interpretation</p> <p>Constructing meaning from information</p>	<p>Translate, extrapolate, convert, interpret, abstract, transform, select, indicate, illustrate, represent, formulate, explain (who/what/when/where/that/how), classify, describe, discuss, express, identify, locate, paraphrase, recognize, report, restate, review, summarize, find, relate, define, clarify, diagram, outline, compare, contrast, derive, arrange, estimate, extend, generalize, give examples, ask, distinguish</p>
<p>Recollection</p> <p>Recalling items of information</p>	<p>Recall, identify, recognize, acquire, distinguish, state, define, name, list, label, reproduce, order, indicate, record, relate, repeat, select, tell, describe, match, locate, report, choose, cite, define, outline, complete, draw, find, give, isolate, pick, put, show</p>

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Also consider "[Fink's Taxonomy of Significant Learning](#)" for actions verbs you might use.



Resources

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