

Quick Guide for Instructors: Writing Effective Learning Objectives (LOs) for Learning Activities

McGill University, Undergraduate Medical Education (UGME)



What are the essential take-home messages in my teaching?

What do I want my students to be able to do or demonstrate as a result of this learning activity?

How will I know that students have achieved it?

Learning objectives (LOs) provide a response to these key pedagogical questions. Each LO defines student-centered performance by specifying the observable knowledge, skills or attitudes students will gain (or be able to demonstrate) as a result of instruction, participation and/or study. An LO statement unpacks the behavioral markers required for recognizing desired student learning while highlighting an instructor's expectations. Well written learning objectives state what the learner will be able to do in observable or measurable terms. The specific operational verbs and terms should accurately reflect the level of functioning and proficiency expected of a health professional at this particular stage of their learning. Every verb-driven learning objective logically connects to assessment items by defining how the status of learning could be evidenced.

The Formula:

Basic Elements:		Examples:	Concrete Steps:
Stem = Time-frame	By the end of this session, ↓	<ul style="list-style-type: none"> By the end of this session, students will be able to DESCRIBE the pharmacological actions of antipsychotics as related to their mechanism of action and side effects in the treatment of psychosis. 	Start with a time frame for learning with a focus on learners
Who	<u>STUDENTS</u> will be able to (Subject) ↓	<ul style="list-style-type: none"> Upon completion of this learning activity, learners will be able to EVALUATE non-Hodgkin's lymphoma therapies for applicability to post-menopausal women so that symptom control from HRT is not compromised. 	From a domain of learning, decide on an ACTION VERB that accurately reflects performance level expectations (see chart on last page)
Will do	<u>DO / DEMONSTRATE</u> (Action verb) ↓	<ul style="list-style-type: none"> Following this study module, participants will be able to DETERMINE which of the geriatric patients will benefit from flu vaccines based on their comorbidities. 	Follow the verb with a description of learning to be demonstrated in relation to specific content.
What	<u>SUBJECT MATTER</u> (Object) ↓	<ul style="list-style-type: none"> By the end of this online lecture, participants will be able to COMPARE and ANALYZE available efficacy and safety data on new and emerging smoking cessation therapies to DETERMINE how they may be integrated into treatment. 	End with an objective context and, where possible, broad criteria for an acceptable performance.
How / when & under what conditions?	<u>OBSERVABLE / MEASURABLE DETAILS</u> (Performance details & Context)	<ul style="list-style-type: none"> At the conclusion of this activity, learners should be able to APPLY the principles of evidence based medicine and cost effectiveness in making decision about the utilization of limited medical resources for patients in need of a kidney transplant. 	

Key characteristics of meaningful objectives (S.M.A.R.T):

- **S**pecific (concrete, narrow, detailed, well-defined)
- **M**easurable or Observable (quantity, comparison)
- **A**chievable (feasible, actionable)
- **R**ealistic (considering resources & learners)
- **T**ime-bound (follow a defined timeline)

CAUTION! – Please ...

AVOID only listing the content	AVOID focusing solely on instructor actions	AVOID using non-specific verbs		
Learning objectives are NOT a list of topics to be covered in your session.	Learning objectives are NOT a list of what the instructor does during the session.	Learning objectives are NOT effective when the verb is too general, vague, or needs to be further unpacked in order to be understood by stakeholders.		
For example, <i>Diagnostic tests for....</i> <i>Treatment choices for....</i> <i>Pathophysiology of...</i>	For example, <i>Present new data</i> <i>Explain a theory</i> <i>Review pathophysiology</i>	For example : <i>Approach</i> <i>Be aware of...</i> <i>Be familiar with...</i> <i>Concentrate</i>	<i>Enjoy</i> <i>Grasp</i> <i>Grow</i> <i>Improve</i> <i>Increase</i>	<i>Know</i> <i>Learn</i> <i>Perceive</i> <i>Realize</i> <i>Understand</i>

Why bother? Writing clear learning objectives can...

- Help YOU clarify the goals and targets for your teaching (instructional planning tool)
- Facilitate objective and effective assessment of students (assessment planning tool)
- Help the student focus attention on what is important and valued by the instructor (student orientation tool)
- Help the student visualize progressions of learning across various sessions and courses (curriculum signposting tool)
- Establish benchmarks for determining instructional effectiveness (framework for determining alignment)

Resource compiled by UGME Academic Lead for Curriculum Design & Implementation, Marian Jazvac-Martek, PhD. October 2019.¹
 Should you wish for any further assistance or clarification for writing learning objectives, contact: marian.jazvacmartek@mcgill.ca

¹ References:

- Anderson, L. W., & Krathwohl, D. R. (2001). *A Taxonomy for learning, teaching and assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman.
- Adelman, C. (2015). *To imagine a verb: The language and syntax of learning outcomes statements*. Retrieved from <http://learningoutcomesassessment.org/documents/OccasionalPaper24.pdf>
- Knack, L. (2015). *Writing effective learning outcomes*. Accessed online at: <https://ciel.viu.ca/teaching-learning-pedagogy/designing-your-course/developing-learning-outcomes>

SAMPLE ACTION VERBS along Domains of Learning and Levels of Mastery

		Mastery Levels																																																																						
		Lower-Order (Basic)	Higher-Order (More sophisticated)																																																																					
		Knows	Knows How	Shows How	Does																																																																			
Domains of Learning	Psychomotor <i>Physical / performative skills</i>	<p>Overview: Student translates and uses sensory clues to inform motor activity for physical tasks. Student is mentally, physically and emotionally ready to act and set to take on or replicate a fundamental skill or simple task.</p> <p>Sample Verbs:</p> <table border="0"> <tr> <td><i>Adhere</i></td> <td><i>Differentiate</i></td> <td><i>Manipulate</i></td> </tr> <tr> <td><i>Attempt</i></td> <td><i>Execute</i></td> <td><i>Practice</i></td> </tr> <tr> <td><i>Arrange</i></td> <td><i>Follow</i></td> <td><i>Re-create</i></td> </tr> <tr> <td><i>Build</i></td> <td><i>Identify</i></td> <td><i>Repeat</i></td> </tr> <tr> <td><i>Describe</i></td> <td><i>Imitate</i></td> <td><i>Replicate</i></td> </tr> <tr> <td><i>Detect</i></td> <td><i>Implement</i></td> <td></td> </tr> </table>	<i>Adhere</i>	<i>Differentiate</i>	<i>Manipulate</i>	<i>Attempt</i>	<i>Execute</i>	<i>Practice</i>	<i>Arrange</i>	<i>Follow</i>	<i>Re-create</i>	<i>Build</i>	<i>Identify</i>	<i>Repeat</i>	<i>Describe</i>	<i>Imitate</i>	<i>Replicate</i>	<i>Detect</i>	<i>Implement</i>		<p>Overview: Student imitates or practices a fundamental skill or task under supervision. Student moves on to carry out that skill by demonstrating increasing efficiency, confidence and proficiency. Student handles more complex tasks in a smooth manner.</p> <p>Sample Verbs:</p> <table border="0"> <tr> <td><i>Adjust</i></td> <td><i>Detect</i></td> <td><i>Perform</i></td> </tr> <tr> <td><i>Alter</i></td> <td><i>Draw</i></td> <td><i>Reorganize</i></td> </tr> <tr> <td><i>Calibrate</i></td> <td><i>Inspect</i></td> <td><i>Reproduce</i></td> </tr> <tr> <td><i>Complete</i></td> <td><i>Investigate</i></td> <td><i>Respond</i></td> </tr> <tr> <td><i>Control</i></td> <td><i>Improve</i></td> <td><i>Revise</i></td> </tr> <tr> <td><i>Correct</i></td> <td><i>Manage</i></td> <td><i>Show</i></td> </tr> <tr> <td><i>Copy</i></td> <td><i>Model</i></td> <td><i>Verify</i></td> </tr> <tr> <td><i>Demonstrate</i></td> <td><i>Perfect</i></td> <td></td> </tr> </table>	<i>Adjust</i>	<i>Detect</i>	<i>Perform</i>	<i>Alter</i>	<i>Draw</i>	<i>Reorganize</i>	<i>Calibrate</i>	<i>Inspect</i>	<i>Reproduce</i>	<i>Complete</i>	<i>Investigate</i>	<i>Respond</i>	<i>Control</i>	<i>Improve</i>	<i>Revise</i>	<i>Correct</i>	<i>Manage</i>	<i>Show</i>	<i>Copy</i>	<i>Model</i>	<i>Verify</i>	<i>Demonstrate</i>	<i>Perfect</i>		<p>Overview: Student adapts motor response when encountering new situations and problems. Student is able to create new motor responses and patterns for adapting when new skill sets are required. Students are able to instruct or train others to perform this skill.</p> <p>Sample Verbs:</p> <table border="0"> <tr> <td><i>Adapt</i></td> <td><i>Design</i></td> <td><i>Master</i></td> </tr> <tr> <td><i>Combine</i></td> <td><i>Develop</i></td> <td><i>Modify</i></td> </tr> <tr> <td><i>Compose</i></td> <td><i>Direct</i></td> <td><i>Formulate</i></td> </tr> <tr> <td><i>Construct</i></td> <td><i>Instruct</i></td> <td><i>Originate</i></td> </tr> <tr> <td><i>Coordinate</i></td> <td><i>Integrate</i></td> <td><i>Solve</i></td> </tr> <tr> <td><i>Create</i></td> <td><i>Manage</i></td> <td><i>Train</i></td> </tr> <tr> <td><i>Demonstrate</i></td> <td></td> <td><i>Teach</i></td> </tr> </table>	<i>Adapt</i>	<i>Design</i>	<i>Master</i>	<i>Combine</i>	<i>Develop</i>	<i>Modify</i>	<i>Compose</i>	<i>Direct</i>	<i>Formulate</i>	<i>Construct</i>	<i>Instruct</i>	<i>Originate</i>	<i>Coordinate</i>	<i>Integrate</i>	<i>Solve</i>	<i>Create</i>	<i>Manage</i>	<i>Train</i>	<i>Demonstrate</i>		<i>Teach</i>					
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Affective <i>Attitudes / behavioral skills</i>	<p>Overview: Student is aware of the situation and is able to control attention to it. The student is able to be actively involved in the situation and has appropriate responses.</p> <p>Sample Verbs:</p> <table border="0"> <tr> <td><i>Accept</i></td> <td><i>Interpret</i></td> <td><i>Receive</i></td> </tr> <tr> <td><i>Acknowledge</i></td> <td><i>Listen</i></td> <td><i>Report</i></td> </tr> <tr> <td><i>Clarify</i></td> <td><i>Locate</i></td> <td><i>Request</i></td> </tr> <tr> <td><i>Discuss</i></td> <td><i>Notice</i></td> <td><i>Respond</i></td> </tr> <tr> <td><i>Focus</i></td> <td><i>Observe</i></td> <td><i>Reward</i></td> </tr> <tr> <td><i>Follow</i></td> <td><i>Question</i></td> <td><i>Seek</i></td> </tr> </table>	<i>Accept</i>	<i>Interpret</i>	<i>Receive</i>	<i>Acknowledge</i>	<i>Listen</i>	<i>Report</i>	<i>Clarify</i>	<i>Locate</i>	<i>Request</i>	<i>Discuss</i>	<i>Notice</i>	<i>Respond</i>	<i>Focus</i>	<i>Observe</i>	<i>Reward</i>	<i>Follow</i>	<i>Question</i>	<i>Seek</i>	<p>Overview: The student has an internalized set of values and is able to accept and have commitment to a value.</p> <p>Sample Verbs:</p> <table border="0"> <tr> <td><i>Adopt</i></td> <td><i>Contribute</i></td> <td><i>Join</i></td> </tr> <tr> <td><i>Assist</i></td> <td><i>Cooperate</i></td> <td><i>Justify</i></td> </tr> <tr> <td><i>Build</i></td> <td><i>Explain</i></td> <td><i>Organize</i></td> </tr> <tr> <td><i>Choose</i></td> <td><i>Express</i></td> <td><i>Plan</i></td> </tr> <tr> <td><i>Collaborate</i></td> <td><i>Foster</i></td> <td><i>Propose</i></td> </tr> <tr> <td><i>Consult</i></td> <td><i>Initiate</i></td> <td><i>Share</i></td> </tr> </table>	<i>Adopt</i>	<i>Contribute</i>	<i>Join</i>	<i>Assist</i>	<i>Cooperate</i>	<i>Justify</i>	<i>Build</i>	<i>Explain</i>	<i>Organize</i>	<i>Choose</i>	<i>Express</i>	<i>Plan</i>	<i>Collaborate</i>	<i>Foster</i>	<i>Propose</i>	<i>Consult</i>	<i>Initiate</i>	<i>Share</i>	<p>Overview: The student is able to organize values, resolve conflicts between competing values and create a new value system. Student is able to develop a consistent response to a set of values and use them in a variety of situations.</p> <p>Sample Verbs:</p> <table border="0"> <tr> <td><i>Act</i></td> <td><i>Display</i></td> <td><i>Maintain</i></td> </tr> <tr> <td><i>Advocate</i></td> <td><i>Envision</i></td> <td><i>Practice</i></td> </tr> <tr> <td><i>Balance</i></td> <td><i>Exemplify</i></td> <td><i>Prioritize</i></td> </tr> <tr> <td><i>Conceptualize</i></td> <td><i>Formulate</i></td> <td><i>Reconcile</i></td> </tr> <tr> <td><i>Debate</i></td> <td><i>Influence</i></td> <td><i>Serve</i></td> </tr> <tr> <td><i>Defend</i></td> <td><i>Justify action</i></td> <td><i>Solve</i></td> </tr> </table>	<i>Act</i>	<i>Display</i>	<i>Maintain</i>	<i>Advocate</i>	<i>Envision</i>	<i>Practice</i>	<i>Balance</i>	<i>Exemplify</i>	<i>Prioritize</i>	<i>Conceptualize</i>	<i>Formulate</i>	<i>Reconcile</i>	<i>Debate</i>	<i>Influence</i>	<i>Serve</i>	<i>Defend</i>	<i>Justify action</i>	<i>Solve</i>															
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<i>Act</i>	<i>Display</i>	<i>Maintain</i>																																																																						
<i>Advocate</i>	<i>Envision</i>	<i>Practice</i>																																																																						
<i>Balance</i>	<i>Exemplify</i>	<i>Prioritize</i>																																																																						
<i>Conceptualize</i>	<i>Formulate</i>	<i>Reconcile</i>																																																																						
<i>Debate</i>	<i>Influence</i>	<i>Serve</i>																																																																						
<i>Defend</i>	<i>Justify action</i>	<i>Solve</i>																																																																						