

A Brief Guide for Writing Learning Outcomes

What are Learning Outcomes?

Learning outcomes are the accumulated **knowledge**, **skills**, and **attitudes** that students develop during a course of study [9]. Learning outcomes should be measurable statements that articulate what students should **know**, **be able to do**, or **value** as a result of taking a course [1].

Knowledge Outcomes -> What They Know

Knowledge outcomes address content and methods of the discipline [8].

Examples:

- "Students can compare and contrast three major theories of political economics."
- "Students will demonstrate advanced proficiency in their language of specialization."

Skills Outcomes -> What They Do

Skills outcomes describe the techniques and approaches required for work in the discipline. Skills are what a graduate can do [8].

Examples:

- Communication skills: "Students can explain their project assumptions clearly and concisely."
- Critical thinking skills: "Students can evaluate the strengths and weaknesses of research designs."
- Quantitative skills: "Students can analyze data and compare results to theoretical predictions."

Attitude Outcomes -> How They Behave

Address commitment, appreciation, or openness [8].

Examples:

- "Students appreciate the importance of confidentiality, truthfulness, and integrity in research involving human subjects."
- "Students demonstrate an openness to the religion, cultural mores, and philosophy of different cultures."

Developing Learning Outcomes for Your Courses

(a) Before you start [2]:

- Check the goals and competencies defined for your program.
- For each of the stated program goals, outline the specific knowledge, skills, or attitudes that indicate this goal is being achieved.
- Assign the KSAs (Knowledge, Skills, Attitude) to the appropriate courses.

(b) How to Write Good Learning Outcomes [4]:

- Focus on student performance *not* teacher performance.
- Focus on product - *not* process.
- Focus on terminal behavior - *not* subject matter.
- Include only one general learning objective in each outcome.

(c) Features of Good Learning Outcomes:

- They are related to intended outcomes, rather than the process for achieving those outcomes.
- They are concerned with students, not teachers [7].
- Outcomes should be **SMART** [2,6]:

Specific: clear, definite terms describing the abilities, knowledge, values, attitudes and performance desired. Use action words or concrete verbs.

Measurable: tangible, should have a measurable outcome and a target can be set, so that you can determine when you have reached it.

Achievable: the outcome is something your students can accomplish.

Realistic: the outcome is practical in that it can be achieved in a reasonable time frame.

Time-bound: identify a specific time frame for the completion of the outcome.

(d) Composing a Learning Outcome [7]:

1. Identify the behavior/performance to be observed:

- A verb that describes the behavior learners are expected to perform.
- It should be measurable and observable.
- It describes what the learner will be doing when demonstrating mastery of an outcome.
- The behavior/performance must be visible to be observed. It should answer the question, what will the learner be doing when demonstrating the achievement of the outcome?

Examples:

Good: both are observable behavior.

Be able to write a letter.

Be able to drive a car.

Poor: neither statement is directly observable.

Be able to understand mathematics.

Develop an appreciation for music.

See the 6 levels of Bloom's Taxonomy of the cognitive domain (i.e., Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation) in part (e) below for more examples of verbs and their uses.

2. Identify the criterion to be used to assess:

- Description of the criteria for acceptance of a performance as sufficient, indicating mastery of the outcome.
- Stating the criterion lets learners know how well they will have to perform to be considered competent.
- Provides a standard against which to test the success of the instruction, and gives instructors a way of evaluating whether or not the learners can do what you set out to teach them.
- Statement can indicate the degree of accuracy, quantity, number of correct responses, etc [4].

Examples:

Speed: in under two hours, within fifteen minutes.

Accuracy: to the nearest whole number, with no more than two incorrect entries in the log.

3. Identify the conditions:

- Description of the circumstances under which the performance/behavior will be carried out.
- Includes a description of what will be available to learners when they perform the desired behavior.
- Specifying the conditions further helps to prevent misunderstanding of your intent.

Examples:

- Given a standard set of tools and a malfunctioning motor ...
- Using a metric ruler ...
- Given a set of whole numbers ...
- In the presence of an irate customer ...
- Without the aid of class notes ...
- Using only a screwdriver ...
- Given a fully-functioning video camera ...
- Given a list of chemical elements ...

(e) Bloom’s Taxonomy [5]:

Action Verbs					
Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Remember previously learned information.	Demonstrate an understanding of the facts.	Apply knowledge to actual situations.	Break down objects or ideas into simpler parts and find evidence to support generalizations.	Compile component ideas into a new whole or propose alternative solutions.	Make and defend judgments based on internal evidence or external criteria.
Arrange Count Define Describe Draw Find Identify Label List Match Name Order Quote Recall Recite Recognize Relate Select Sequence Tell Write	Classify Conclude Convert Defend Demonstrate Discuss Distinguish Estimate Explain Extend Generalize Identify Illustrate Interpret Paraphrase Predict Report Restate Review Summarize Tell	Apply Change Choose Compute Dramatize Interview Prepare Produce Role-play Select Show Transfer Use	Analyze Characterize Classify Compare Contrast Debate Deduce Diagram Differentiate Discriminate Distinguish Examine Outline Relate Research Separate	Compose Construct Create Design Develop Integrate Invent Make Organize Perform Plan Produce Propose Rewrite	Appraise Argue Assess Choose Conclude Criticize Decide Evaluate Judge Justify Predict Prioritize Prove Rank Rate Select Support Value

Verbs to Avoid [3]:

• Understand
• Appreciate
• Know about
• Become familiar with
• Learn about
• Become aware of

References:

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Books:

Kennedy, Declan., Writing and Using Learning Outcomes: A Practical Guide. Quality promotion Unit, UCC, 2007. (Book in pdf format available.)

Biggs, John B., Catherine So-kum Tang, and Education Society for Research into Higher Teaching for Quality Learning at University: What the Student Does. Maidenhead: McGraw-Hill Education, 2011.

Video:

Teaching Teaching & Understanding Understanding: A 19-minute award-winning short-film about teaching/learning

(1/3) <https://www.youtube.com/watch?v=iMZA80XpP6Y>

(2/3) https://www.youtube.com/watch?v=SfloUd3eO_M

(3/3) <https://www.youtube.com/watch?v=w6rx-GBBwVg>