LBHC: How to Write Learning Outcomes at the Course, Program, or General Education Level

Learning outcomes are measurable statements defining what students should be able to do by the end of a course, program, or degree (or set of general education requirements).

The purpose of identifying outcomes is to...

a. Increase consistency among different instructors and modes of learning.
b. Inform students of the standards and expectations, which helps them learn more effectively.
c. Serve as an implicit contract between instructor and students, creating mutual accountability.
d. Guide curriculum development and the formation of instructional activities and methods.
e. Provide a framework for developing assessments to evaluate and improve student learning.
f. Provide a framework for evaluating overall effectiveness of an educational program.
g. Provide evidence of student learning for accreditation and other reporting purposes.

Learning outcomes...

1. Begin with the phrase, After completing the [course], each student should be able to...
2. Are limited in number (i.e., choose 3-8 outcomes; focus on the big ideas).
3. Use active verbs that are measureable, quantitatively or qualitatively, that focus on what students should be able to do, rather than on course content or activities (avoid the verbs listed below).
4. Are specific and stated clearly (e.g., Rather than, Students should be able to understand the Kreb’s cycle, maybe try describe the chemical reactions and steps of the Kreb’s cycle).
5. Are stated concisely and succinctly, written at a competent level, and exclude filler words such as effectively, competent, accurate, and well (e.g., draw a circle well).
6. Include complex or higher order skills as appropriate (see levels of verbs listed in this handout).
7. Separate distinct sets of skills (e.g., articulate in two outcomes: [1] weave a basket and [2] draw a picture).
8. Bundle multiple related skills that are steps in a process in one statement (e.g., generate, test, and analyze hypotheses).
9. Are stated so they can be measured by multiple assessment methods (e.g., Explain the significance of traditional Crow customs by writing a short story).
10. May specify criteria or standards – such as accuracy, quality, time constraint, or quantity – under which the behavior occurs (e.g., “with no more than one incorrect entry”).
11. May specify conditions (i.e., given “X” or without “Y”) under which the behavior occurs (e.g., “without the use of a legend” or “given a single line diagram”).

Avoid using verbs that are open to many interpretations or are difficult to measure or observe...

appreciate  become acquainted  cover  do  learn  study
be aware of  be taught/shown  demonstrate  gain knowledge  practice  try
be familiar with  comprehend  understanding  know  realize  understand

Examples of course outcomes: Students should be able to...

a. Explain the impact of historical events on the present-day Crow Tribe.
b. Interpret quantitative ideas in written form.
c. Articulate the important distinctions between micro and macro perspectives in sociology.
d. Sing music as informed by stylistic integrity, technical accuracy, and musicality.
The three learning domains

Bloom's taxonomy is a set of three hierarchical models used to classify learning outcomes into levels of complexity and specificity. The three models cover learning outcomes in the following domains:

1. The cognitive domain (mind/head), which targets knowledge and intellectual skills.
2. The affective domain (spirit/heart), which targets attitudes, interests, feelings, values, and ethics.
3. The psychomotor domain (body/hands), which targets physical and manipulation skills.

The following pages describe the levels of each domain, from the simplest ability level to the most complex. The outcomes help guide both instructional activities and assessments; therefore, it is important to identify the level of learning and the appropriate verb.

Use the lists of examples of verbs on the following pages to articulate performance expectations for students (i.e., course outcomes). Note: These are not exhaustive lists of verbs.

1. The cognitive domain (mind)

There is a lot of focus in higher education on the cognitive domain (i.e., knowledge and the development of intellectual skills); therefore, it is important to examine the following six levels of cognitive understanding: it begins with remembering and advances up the taxonomy to understanding, applying, and then the higher order skills involved in analyzing, evaluating, and creating. The six levels of the cognitive domain are described below and verbs are on the next page.

**Level I. Remember** – The student retrieves, recalls, or recognizes relevant knowledge from memory (e.g., *recall dates of important events in U.S. history*).

**Level II. Understand** – The student demonstrates comprehension through one or more forms of explanation (e.g., *compare ritual practices in two different religions*).

**Level III. Apply** – The student uses information or a skill in a new situation (e.g., *use Newton’s second law to solve a problem*).

**Level IV. Analyze** – The student breaks material into its constituent parts and determines how the parts relate to one another or to an overall structure or purpose (e.g., *analyze the relationship between different characters in a play*).

**Level V. Evaluate** – The student makes judgments based on criteria and standards (e.g., *determine whether a scientist’s conclusions follow from observed data*).

**Level VI. Create** – The student puts elements together to form a new coherent or functional whole or reorganizes elements into a new pattern or structure (e.g., *compose a piece of music*).

---

1 The models were named after Benjamin Bloom, who chaired the committee of educators that devised the taxonomy in 1956. A revised version of the taxonomy for the cognitive domain was created in 2001 by Lorin Anderson and David Krathwohl. The affective domain was first described in 1964 and is attributed to Krathwohl, Bloom, and Masia.
Examples of verbs for the cognitive domain from lowest to highest levels

<table>
<thead>
<tr>
<th>Remember</th>
<th>Understand</th>
<th>Apply</th>
<th>Analyze</th>
<th>Evaluate</th>
<th>Create</th>
</tr>
</thead>
<tbody>
<tr>
<td>arrange</td>
<td>abstract</td>
<td>add</td>
<td>analyze</td>
<td>appraise</td>
<td>arrange</td>
</tr>
<tr>
<td>choose</td>
<td>arrange</td>
<td>administer</td>
<td>appraise</td>
<td>arbitrate</td>
<td>assemble</td>
</tr>
<tr>
<td>cite</td>
<td>articulate</td>
<td>apply</td>
<td>break down</td>
<td>argue</td>
<td>build</td>
</tr>
<tr>
<td>complete</td>
<td>associate</td>
<td>calculate</td>
<td>categorize</td>
<td>assess</td>
<td>collect</td>
</tr>
<tr>
<td>count</td>
<td>categorize</td>
<td>carry out</td>
<td>classify</td>
<td>compare</td>
<td>combine</td>
</tr>
<tr>
<td>define</td>
<td>characterize</td>
<td>change</td>
<td>compare</td>
<td>compare</td>
<td>compile</td>
</tr>
<tr>
<td>describe</td>
<td>clarify</td>
<td>choose</td>
<td>connect</td>
<td>conclude</td>
<td>compose</td>
</tr>
<tr>
<td>draw</td>
<td>classify</td>
<td>classify</td>
<td>contrast</td>
<td>consider</td>
<td>constitute</td>
</tr>
<tr>
<td>duplicate</td>
<td>compare</td>
<td>complete</td>
<td>critique</td>
<td>contrast</td>
<td>construct</td>
</tr>
<tr>
<td>identify</td>
<td>complete</td>
<td>compute</td>
<td>deconstruct</td>
<td>convince</td>
<td>create</td>
</tr>
<tr>
<td>indicate</td>
<td>compute</td>
<td>conduct</td>
<td>design</td>
<td>critique</td>
<td>design</td>
</tr>
<tr>
<td>label</td>
<td>conclude</td>
<td>discover</td>
<td>detect</td>
<td>decide</td>
<td>develop</td>
</tr>
<tr>
<td>list</td>
<td>contrast</td>
<td>divide</td>
<td>develop</td>
<td>defend</td>
<td>devise</td>
</tr>
<tr>
<td>match</td>
<td>convert</td>
<td>dramatize</td>
<td>diagram</td>
<td>determine</td>
<td>formulate</td>
</tr>
<tr>
<td>memorize</td>
<td>defend</td>
<td>employ</td>
<td>differentiate</td>
<td>discriminate</td>
<td>generate</td>
</tr>
<tr>
<td>name</td>
<td>depict</td>
<td>examine</td>
<td>discriminate</td>
<td>estimate</td>
<td>hypothesize</td>
</tr>
<tr>
<td>order</td>
<td>describe</td>
<td>execute</td>
<td>distinguish</td>
<td>evaluate</td>
<td>integrate</td>
</tr>
<tr>
<td>outline</td>
<td>diagram</td>
<td>experiment</td>
<td>divide</td>
<td>examine</td>
<td>invent</td>
</tr>
<tr>
<td>quote</td>
<td>differentiate</td>
<td>generalize</td>
<td>examine</td>
<td>grade</td>
<td>make</td>
</tr>
<tr>
<td>read</td>
<td>discuss</td>
<td>graph</td>
<td>experiment</td>
<td>inspect</td>
<td>manage</td>
</tr>
<tr>
<td>recall</td>
<td>distinguish</td>
<td>illustrate</td>
<td>explore</td>
<td>interpret</td>
<td>modify</td>
</tr>
<tr>
<td>recite</td>
<td>establish</td>
<td>implement</td>
<td>illustrate</td>
<td>judge</td>
<td>organize</td>
</tr>
<tr>
<td>recognize</td>
<td>estimate</td>
<td>infer</td>
<td>infer</td>
<td>justify</td>
<td>perform</td>
</tr>
<tr>
<td>record</td>
<td>exemplify</td>
<td>interpolate</td>
<td>integrate</td>
<td>prioritize</td>
<td>plan</td>
</tr>
<tr>
<td>repeat</td>
<td>explain</td>
<td>interpret</td>
<td>inventory</td>
<td>rank</td>
<td>prepare</td>
</tr>
<tr>
<td>reproduce</td>
<td>express</td>
<td>manipulate</td>
<td>investigate</td>
<td>rate</td>
<td>produce</td>
</tr>
<tr>
<td>restate</td>
<td>extend</td>
<td>modify</td>
<td>outline</td>
<td>recommend</td>
<td>propose</td>
</tr>
<tr>
<td>retain</td>
<td>extrapolate</td>
<td>operate</td>
<td>organize</td>
<td>review</td>
<td>rearrange</td>
</tr>
<tr>
<td>retrieve</td>
<td>generalize</td>
<td>organize</td>
<td>question</td>
<td>score</td>
<td>reconstruct</td>
</tr>
<tr>
<td>select</td>
<td>give example</td>
<td>outline</td>
<td>relate</td>
<td>standardize</td>
<td>reorganize</td>
</tr>
<tr>
<td>show</td>
<td>identify</td>
<td>perform</td>
<td>research</td>
<td>support</td>
<td>revise</td>
</tr>
<tr>
<td>state</td>
<td>illustrate</td>
<td>predict</td>
<td>select</td>
<td>test</td>
<td>rewrite</td>
</tr>
<tr>
<td>tabulate</td>
<td>*see footnote²</td>
<td>*see footnote³</td>
<td>separate</td>
<td>validate</td>
<td>synthesize</td>
</tr>
<tr>
<td>write</td>
<td></td>
<td></td>
<td>subdivide</td>
<td>value</td>
<td>write</td>
</tr>
</tbody>
</table>

² infer, interpret, locate, match, outline, paraphrase, predict, rearrange, recognize, relate, reorder, rephrase, report, represent, review, rewrite, sort, summarize, transform, translate
³ prepare, prescribe, produce, role play, show, sketch, solve, subtract, transfer, translate, use
2. The affective domain (heart/spirit) and examples of verbs

This domain includes the manner in which students deal with things emotionally, such as feelings, values, appreciation, enthusiasm, motivations, and attitudes. The five levels are listed in order from lowest to highest.

**Level I. Receiving** – The student shows awareness of the benefits of a particular value, attitude or interest; the student’s attention is held and directed (e.g., *the student should be able to listen attentively*).

- accept
- differences of
- acknowledge
- attend closely
- capture
- describe
- feel
- experience
- listen attentively
- identify
- perceive
- pursue
- sense
- show sensitivity
- tolerate

**Level II. Responding** – The student actively participates and is motivated to learn (e.g., *willingly answer questions*).

- agree (to)
- answer
- ask
- assist
- communicate
- comply
- discuss
- enjoy
- exhibit
- help
- indicate
- inquire
- listen
- obey rules
- participate
- pursue
- question
- react
- reply
- report
- respond
- satisfy
- select
- show interest

**Level III. Valuing** – The student sees personal worth in a value, belief, attitude, or interest; displays behavior in situations where s/he is not forced to comply or obey (e.g., *express strong opinions*).

- accept
- adhere to
- adopt
- approve
- believe
- choose
- commit
- contribute
- cooperate
- display
- discuss
- enjoy
- exhibit
- follow-up
- help
- integrate
- indicate
- initiate
- invite
- justify
- keep
- like
- look
- maintain
- notice
- observe
- participate
- persevere
- perceive
- prefer
- promote
- recommend
- report
- respond
- respect
- sanction
- search
- select
- show concern for
- show interest

**Level IV. Organizing** – The student is committed to building a set of values as displayed by behavior (e.g., *criticize arguments and positions presented in class*).

- accept responsibility
- adapt
- adhere
- arrange
- categorize
- compare
- create
- defend
- establish
- examine
- explain
- formulate
- generalize
- group
- identify
- integrate
- modify
- order
- organize
- prepare
- rank
- resolve
- solve
- synthesize
- systemize
- weigh
- alternatives

**Level V. Internalizing** – The student’s total behavior is consistent with internalized values (e.g., *cooperate in group activities*).

- act
- advocate
- behave
- characterize
- conclude
- conform
- co-operate
- encourage
- endure
- devote
- exemplify
- function
- discriminate
- display
- influence
- pattern
- perform
- preserve
- judge
- justify
- maintain
- modify
- question
- resolve
- retain
- review
- propose
- revise
- serve
- support
- uphold
3. The psychomotor domain \(^4\) (body) and examples of verbs

The psychomotor domain includes physical movement, coordination, and use of the motor-skill areas. Development of these skills requires practice and is measured in terms of speed, precision, distance, procedures, or techniques in execution. The levels are listed in order from lowest to highest. Examples: “Conduct a lab experiment” or “Detect non-verbal communication cues”.

**Level I. Imitation** – The student observes skills and attempts to repeat them. The skill is simply copied.

<table>
<thead>
<tr>
<th>ad(c)ere</th>
<th>calibrate</th>
<th>imitate</th>
<th>re(n)act</th>
<th>organize</th>
</tr>
</thead>
<tbody>
<tr>
<td>as(m)ble</td>
<td>construct</td>
<td>mimic</td>
<td>repeat</td>
<td>sketch</td>
</tr>
<tr>
<td>at(m)pt</td>
<td>dissect</td>
<td>move</td>
<td>replicate</td>
<td>start</td>
</tr>
<tr>
<td>carry out</td>
<td>duplicate</td>
<td>practice</td>
<td>reproduce</td>
<td>try</td>
</tr>
<tr>
<td>copy</td>
<td>follow</td>
<td>proceed</td>
<td>respond</td>
<td>volunteer</td>
</tr>
</tbody>
</table>

**Level II. Manipulation** – The student continues to practice a particular skill or sequence until it becomes habitual and the action can be performed with some confidence and proficiency. The task can be performed by memory or by following instructions.

<table>
<thead>
<tr>
<th>same as level I</th>
<th>complete</th>
<th>execute</th>
<th>manipulate</th>
<th>produce</th>
</tr>
</thead>
<tbody>
<tr>
<td>acquire</td>
<td>implement</td>
<td>improve</td>
<td>operate</td>
<td>progress</td>
</tr>
<tr>
<td>as(m)ble</td>
<td>conduct</td>
<td>maintain</td>
<td>pace</td>
<td>re(c)reate</td>
</tr>
<tr>
<td>build</td>
<td>do</td>
<td>make</td>
<td>perform</td>
<td>use</td>
</tr>
</tbody>
</table>

**Level III. Precision** – The student reproduces a skill with accuracy, proportion, and exactness, requiring a minimum of energy; usually performed without hesitation or help from others.

<table>
<thead>
<tr>
<th>same as level I/II</th>
<th>advance</th>
<th>control</th>
<th>master</th>
<th>succeed</th>
</tr>
</thead>
<tbody>
<tr>
<td>achieve</td>
<td>automatize</td>
<td>exceed</td>
<td>reach</td>
<td>surpass</td>
</tr>
<tr>
<td>accomplish</td>
<td>calibrate</td>
<td>excel</td>
<td>refine</td>
<td>transcend</td>
</tr>
</tbody>
</table>

**Level IV. Articulation** – The student has a higher level of precision. The skills are so well developed the student can modify movement patterns to fit special requirements or meet a problem situation.

<table>
<thead>
<tr>
<th>adapt</th>
<th>change</th>
<th>rearrange</th>
<th>revise</th>
<th>surpass</th>
</tr>
</thead>
<tbody>
<tr>
<td>alter</td>
<td>modify</td>
<td>re(o)organize</td>
<td>solve</td>
<td>transcend</td>
</tr>
</tbody>
</table>

**Level V. Naturalization** – The student’s response is automatic, intuitive, or unconscious. The student begins to experiment, creating new motor acts or ways of manipulating materials out of understandings, abilities, and skills developed. The student acts "without thinking".

<table>
<thead>
<tr>
<th>arrange</th>
<th>compose</th>
<th>create</th>
<th>manage</th>
<th>refine</th>
</tr>
</thead>
<tbody>
<tr>
<td>combine</td>
<td>construct</td>
<td>design</td>
<td>originate</td>
<td>transcend</td>
</tr>
</tbody>
</table>

---

\(^4\) The psychomotor domain has been revised over the years by Dave (1975), Harrow (1972), and Simpson (1972). Dave’s is the most commonly referenced and used, is the easiest to apply, and it is the one presented above. It represents different degrees of competence in performing a skill and captures the levels of competence in the stages of learning from initial exposure to final mastery.