

GUIDE TO OBJECTIVE WRITING

*Curriculum Evaluation & Management (CEMS)
(Subcommittee of the Medical Curriculum Committee)*

BACKGROUND:

Objectives clearly inform all stakeholders of the measurable learning outcomes at every level of the curriculum. The objective should specifically identify one outcome and be measurable in a tangible way. The wording should be deliberate and unbiased, such that any assessor could determine whether a student has achieved the outcome. A student should be able to read the objective and think, “at the end of this class, I should be able to understand this.” Objectives should guide the development or revision of formative and summative assessment activities.

ABOUT THIS GUIDE:

The CEMS has examined the best practices for curriculum evaluation employed by other medical schools and as suggested by established instructional design theory. These practices have been analyzed in the context of the existing medical curriculum at the SMHS, including specific and unique needs and goals for curriculum evaluation. The CEMS has established recommended procedures, definitions, and practices relating to objectives for the curriculum. These recommendations were approved by MCC in 2018.

All new and revised objectives must be written in the approved format. This format includes three specific components and a limited selection of verbs to describe the intended outcomes. This guide provides education and support for those whose responsibilities include writing or revising objectives within the medical curriculum.

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Objectives must be written at specific levels to enable adequate mapping of the curriculum. This page explains how the levels differ.
- **CHECKLIST FOR WRITING OBJECTIVES – pg. 3**
This page provides a checklist to follow while writing each objective. Objectives that tick all of the boxes will conform to the approved standard.
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Objectives-writing tips are provided, along with how to avoid common mistakes.
- **GUIDE TO SELECTING LEARNED CAPABILITY VERBS – pg. 5**
The approved learned capability verbs are: list, state, summarize, generate, demonstrate, classify or define, identify, discriminate, adopt, execute, and choose. This page explains when to use each.

COURSE LEVEL vs. SESSION LEVEL OBJECTIVES

Course level objectives describe an overall topic and outcome, but do not list the specific steps or subtopics needed to reach the outcome. Session level objectives support the course level objectives by describing those specific subtopics or steps. Objectives at all levels must be measurable. **Several session level objectives support each course level objective.** The example below demonstrates this concept.

Objectives	Level of Capability	Capability Verb
Course Level: Given a patient case involving upper limb injury/pathology of tissue, bone, nerves, or vascular structure, generate a plan for and interpret the results of a medical imaging technique.	Intellectual Skill: Problem Solving	Generate
Session Level: Given an x-ray, ultrasound, MRI, and CT scan of the upper limb, identify skeletal and soft tissue structures visible in the images with 80% accuracy.	Intellectual Skill: Concrete Concept	Identify
Session Level: Given an x-ray, ultrasound, MRI, and CT scan, classify gross anatomical structures of the upper limb as either within the range of normal variation, or outside of the range of normal variation with 80% accuracy.	Intellectual Skill: Defined Concept	Classify
Session Level: Given imagery or a dissected cadaver, identify the parts of the upper limb which can be recognized by the unaided human eye with 80% accuracy.	Intellectual Skill: Concrete Concept	Identify
Session Level: Given patient cases with an upper limb injury/pathology of tissue, bone, nerves, and vasculature, classify the the medical imaging techniques that would be appropriate for each with 100% accuracy and list the advantages and disadvantages for each.	Intellectual Skill: Defined Concept	Classify

When developing the session objectives for any topic, each session level objective should specifically cover only one portion of its topic. In fact, you will potentially need multiple session objectives to cover most subtopics.

Reminder: objectives must follow the approved format. See supplemental documents for instructions.

CHECKLIST FOR WRITING OBJECTIVES

The general format is:

Given (conditions), **the student will be able to** (LCV) **skill/knowledge with** (criteria of mastery).

CHECKLIST:

Objectives at all levels in the curriculum should be able to tick the boxes below.

- Three components:** “Given 1, the student will be able to (SWBAT) 2 with 3 accuracy.”
 1. Conditions
 2. Learned capability verb from the provided list – see “Guide to Selecting,” pg. 5
 3. Mastery/achievement
- Specific:** It should clearly communicate a measurable, tangible learning outcome.
- Specific:** It should indicate any special materials or resources needed.
- Focused:** It should not be double (or more) barreled – focus on ONE outcome.
- Focused:** It should focus on the outcome, not the learning strategy.
- Clear:** It should use unambiguous terminology.
- Measurable:** It should indicate a level or standard of achievement/mastery as described below, otherwise assumed mastery will be at 80%.

HOW TO DESCRIBE MASTERY

You may choose to denote mastery in a variety of ways.

- **Percentage Level of Mastery**
 - “with 100% accuracy.”
 - “without error.”
- **Tangible Level of Mastery**
 - “by stating 4 of the 5 elements of...”
 - “by naming and describing each element as defined in the course textbook.”
 - “by meeting the standard as measured by the clinical skills checklist.”
 - “including at least three goals, a list of strengths and weaknesses for each goal, and a specific strategy for addressing any gaps.”
- **Overarching Level of Mastery** (stated once at the top, then all objectives relate to the same mastery goal (see below).
 - “At the end of the course, the successful learner will be expected to complete the following learning objectives with 100% accuracy.
 1. The learner will be able to state the correct procedure for taking vital signs.
 2. Given a simulated patient, the learner will be able to demonstrate taking vital signs.”

PRINCIPLES OF GOOD OBJECTIVES

Principle	Description	Examples/Non-Examples
Specific	Communicates the learning outcome type	<p>The learner will be able to state (verbal information) The learner will be able to adopt (cognitive strategy) The learner will be able to execute (motor skill) The learner will choose (attitude)</p> <p><u>Intellectual Skills</u> The learner will be able to generate (problem solving) The learner will be able to demonstrate (rule) The learner will be able to classify (defined concept) The learner will be able to identify (concrete concept) The learner will be able to discriminate (discrimination)</p>
	Indicates any special materials or resources the learner will have when demonstrating competency (e.g., a case, a patient, a simulated patient; images of an enlarged heart, test results)	<p>Given a written case... Given a patient simulator... Given a standardized patient... Given an actual patient...</p>
Focused	Is not double-barreled	<p>The learner will be able to <i>demonstrate</i> the rule of thirds and <i>state</i> its value (<i>two different outcomes for one content area</i>)</p> <p>The learner will be able to <i>classify</i> examples of muscle hypertrophy and <i>label</i> the musculature of the arm (<i>one outcome for each of two different content areas</i>)</p>
	Focuses on the outcome, not the instructional strategy (e.g., lecture, discussion)	<p>Incorrect: The learner will engage in a discussion of the importance of implicit bias in healthcare treatment outcomes</p> <p>Correct: The learner will be able to define how implicit bias can affect healthcare treatment plans</p>
Clear	Does not use terms that can mean different things to different people.	<p>The learner will be able to <i>know</i> The learner will be able to <i>understand</i></p>
Measurable	Indicates level of achievement/mastery required.	<p>Given a simulated patient, the learner will be able to demonstrate taking vital signs without error. Given multiple images of tissue with and without condition x, the learner will be able to classify the images with 80% accuracy.</p>

GUIDE TO SELECTING LEARNED CAPABILITY VERBS

Varieties of Learning	Learned Capability Verb	Action Verbs/Typical Means of Assessment
Verbal Information <ul style="list-style-type: none"> • <u>Verbatim learning</u>: names, labels, poems • <u>Non-verbatim learning</u>: facts • <u>Substantive learning</u>: organized information 	<ul style="list-style-type: none"> • List • State • Summarize 	<ul style="list-style-type: none"> • Orally; in writing • Orally; in writing • Orally; in writing
Intellectual Skills <ul style="list-style-type: none"> • Problem Solving • Rules • Defined Concepts • Concrete Concepts • Discrimination 	<ul style="list-style-type: none"> • Generate • Demonstrate • Classify/Define • Identify • Discriminate 	<ul style="list-style-type: none"> • By speaking, writing, or constructing a novel solution to a problem requiring use of several rules • Orally or in writing a product • By applying the rule orally, in writing, or by performing in context (<i>not</i> stating the rule) • By sorting correct and incorrect examples by <i>use</i> of a definition (<i>not stating</i> the definition) • By pointing, underlining, circling, etc. • By indicating same or different via pointing, underlining, or circling
Cognitive Strategies	<ul style="list-style-type: none"> • Adopt 	<ul style="list-style-type: none"> • Application of strategy during new learning activity
Motor Skills	<ul style="list-style-type: none"> • Execute 	<ul style="list-style-type: none"> • By manual performance of new series of movements
Attitudes	<ul style="list-style-type: none"> • Choose 	<ul style="list-style-type: none"> • By engaging in an activity voluntarily • Often measured by proxy via instruments thought to be strongly correlated or to predict future behavior

Note: Many of these varieties may require the use of other varieties in a complete teaching context. For example, the executive script for a motor skill (first set stance, place bat on right shoulder, begin swing with hips, then shoulder) is taught as verbal information; the way to remember such a script might involve a mnemonic (cognitive strategy), etc.