Writing Learning Objectives

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Creating learning objectives can be a challenging process. Properly specifying learning objectives for each lecture or learning activity provides direction for you as the instructor for the development of instructional content and also provides a clear understanding for the student regarding your expectations for their learning. Objectives may relate to material not only from your lecture but also from preparatory work or post-lecture work, *within reason*.

Characteristics of well-written learning objectives:

- Measureable
- Specific
- Focus on learner

Learning Objectives Provide Learners….	Learning Objectives Provide Educators…
• Guide what is important and what is trivial/ cue note taking • Assist in organizing information • Set expectations • Used as test preparation/study guide	• Easy to determine appropriate learning methods/activities • Assist with evaluating the effectiveness of the program • Building blocks for assessment (i.e. inform writing exam questions)

There are 3 domains of learning objectives (cognitive, psychomotor, affective). Your course/lecture/learning activity may have a mix or just focus on one domain.

Cognitive: What do I want learners to know?	The learner will be able to **list** all of the bones in the skull
Psychomotor: What do I want learners to be able to do?	The learner will be able to **locate** the radial pulse on a patient and accurately determine the pulse rate
Affective: How do I want them to feel or behave?	The learner will **display** commitment to ethical practices

Not All Well-Written Objectives Are Created Equal: The Taxonomy of Objectives

When writing learning objectives it is very important to select the right behavior or action verb that you would like the learner to be able to achieve. Having a learner **"define"** a disease is very different than having them **"create"** a treatment plan. Be as specific as possible when writing learning objectives so it is clear what you want your learners to be able to do.

Educators have put together taxonomies of verbs to help with the process. The levels build in increasing order of difficulty from basic, rote memorization to higher (more difficult and sophisticated) levels of critical thinking skills.

Words/Phrases to Avoid:

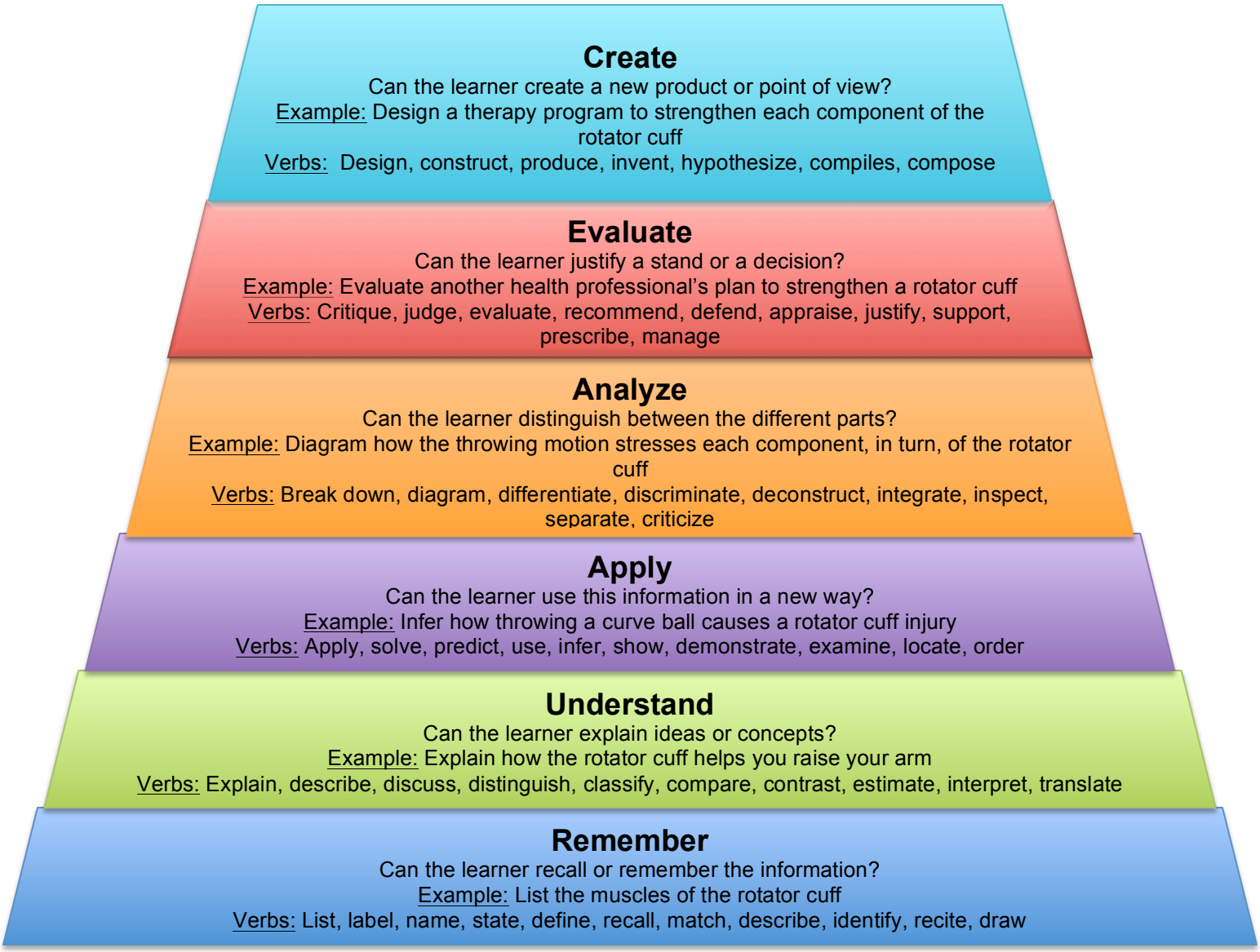
These words or phrases are vague and don't help you or the learner:

- Understand….
- Know….
- Be familiar with….
- To review the causes of….

Poor:	Better:
• Understand circulatory shock	• Define circulatory shock in terms of expected changes from normal of the following parameters: cardiac output, heart rate, systemic vascular resistance, & oxygen consumption • List the top 3 causes of circulatory shock
Poor: • Be familiar with the heart	• Draw a diagram indicating the 4 chambers of the heart • Predict how occlusions to specific coronary arteries might manifest as ischemia on an ECG

Poor:	Better:
• Know synaptic transmission	• Differentiate the various types of receptors and transmitters involved signaling at the synaptic junction.

Taxonomy of Objectives:



Connecting Learning Objectives to Assessment:
Think about the objective, "The learners will know CPR" – how would you begin to create an assessment to test if your learners mastered it? What about CPR did you teach them?

Now, think about the following objectives:

- The learners will be able to restate, in order, the steps on CPR
- The learners will be able to demonstrate the appropriate CPR techniques, as defined by the Red Cross, on a mannequin
- The learners will be able to determine if CPR is necessary in a given situation

The later objectives are specific and measurable. It would be easy to see how you could test your learners.

Writing Learning Objectives:

There are two major parts of an objective:

1. Content for the students to learn [**noun**]:
   - Examples: cells in the body, part of the body, disease processes, history taking and physical exam techniques, procedural skills
2. Process or skill for the students to learn [**verb**]
   - Examples: recall, recite, locate, create, examine, define, categorize

When writing your objectives always go back and make sure you have both of these key components. There are also some other ways to think about writing objectives: the Kern and Thomas approach is one way to easily write objectives.

The Kern and Thomas Approach to Writing Objectives
This model is presented in: Kern, D. E., Thomas, P. A. & Hughes, M. T. (Eds.). (2010) Curriculum development for medical education: a six-step approach. Johns Hopkins University Press.

When using this model, one seeks to create an objective using the following framework:

[Who will do how much (how well) of what by when?]

Using this template facilitates the construction of a measurable objective with an important "noun" and "verb" as discussed above.

Example 1:
Learners will be able to draw the pathway of the Kreb's cycle with every intermediate and enzyme by the end of the lecture.

Example 2:
Learners will be able to identify the major vessels in the pelvis on a CT image during the end of the module exam.

WHO	WILL DO	HOW MUCH (HOW WELL)	OF WHAT	BY WHEN
What level are your learners? What is their current knowledge level? What can we expect from them?	What do you want them to be able to do VERB!	How well should the behavior be demonstrated [if applicable]	What is it you want them to learn? NOUN!	When does this need to occur by- end of lecture, end of course?

Complex Learning Objectives:
"Laundry list" objectives are common. If you do have a list of diseases/procedures/medications/etc. make sure to be specific about what it is you want them to be able to do at the end.

Poor	Better
The learner will be able to understand the following diseases: • Valvular heart disease • Aneurysm • Hypertension • Peripheral arterial disease • Coronary heart disease • Stroke	By the end of the rotation, each learner will have demonstrated, at least once, the proper techniques, as defined by practice guidelines, the following procedures: • IUD insertion and removal • Vaginal delivery • Speculum examination

One Page Quick Guide To Writing Objectives

Well-written learning objectives are: Measureable, Specific and Focus on Learner

STEP 1: Decide which domain your objective falls within

3 Domains of Learning Objectives

Cognitive: What do I want learners to know?	The learner will be able to **describe** the mechanism of action of various anti-arrhythmic medications
Psychomotor: What do I want learners to be able to do?	The learner will be able to **perform** a focused cardiovascular examination.
Affective: How do I want them to feel or behave?	The learner will **show** respect while others are talking

STEP 2: At what level to I want the learner to perform at- choose your VERB

Create: Can the learner create a new product or point of view	Formulates a new plan	Composes, designs, invents, constructs, compiles,
Synthesis Can the learner integrate information to solve a problem	Gives a well organized presentation Integrates learning from different areas into a plan for solving a problem	Categorizes, combines, devises, rearranges, reconstructs, summarizes, supports
Evaluate: Can the learner justify a stand or decision	Judges the adequacy with which conclusions are supported by data Judges the logical consistency of data	Appraises, compares, concludes, contrasts, critiques, criticizes, discriminates, justifies, summarizes
Analyze: Can the learner distinguish between different parts	Recognizes unstated assumptions Distinguishes between facts and inferences Evaluates relevancy of data	Breaks down, diagrams, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, separates
Apply: Can the learner use the information in a new way	Applies concepts/principles to new situation Demonstrates use of a procedure Applies laws and theories to new situation	Changes, computes, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, solves
Understand: Can the learner explain ideas or concepts	Explains facts and principles Interprets verbal material Interprets charts and graphs	Converts, defends, estimates, distinguishes, explains, gives examples, summarizes, predicts
Remember: Can the learner remember the information	Remembers common terms or specific facts Remembers methods or procedures Remembers basic concepts Remembers basic principles	Define, describe, identifies, labels, lists, matches, names, outlines, reproduces, selects, states

STEP 3: Writing the objective

The Kern and Thomas Approach to Writing Objectives:

[Who will do how much (how well) of what by when?]

Example 1:
Learners will be able to draw the pathway of the Kreb's cycle with every intermediate and enzyme by the end of the lecture.

Example 2:
Learners will be able to identify the major vessels in the pelvis on a CT image during the end of the module exam.