

Preparing Course Learning Objectives Guide: A Four Stage Process

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Al-lawama M

Institution

The University of Jordan,
Queen Rania St, Amman,
Jordan

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Abstract

It is of huge importance for learning objectives to be designed thoroughly and correctly in order to teach and learn most effectively. In this article, the author proposes four stages to designing these objectives to ensure maximum effect.

Stage 1: Writing Stage

This involves the educator writing the learning objectives following the “ABCD” approach, and there should be a condition or degree of competence involved.

Stage 2: Revision Stage

This is to review the objectives and check that they are not just listing the outline of the lecture, but still tie in well with what will be covered. Here, it is good to use the “SMART” acronym to ensure the learning objective is as specific as it can be.

Stage 3: Skill Domain & Cognitive level's Classification

During this stage, the learning objective should be classified according to skill domain and to Bloom's Taxonomy of cognitive levels. Doing this in stage three is beneficial as it saves time and allows the educators to customise their learning objectives according to the learners' level.

Stage 4: Trimming Stage

During this stage, one should revise the learning objectives of his/her part of the course with his/her colleagues' learning objectives. Any unnecessary repetition should be removed.

Key Words

Learning Objectives; Learning and Teaching; Curriculum

Corresponding Author:

Mr Manar Al-lawama; E-mail: manar-76@hotmail.com

Introduction

Learning objectives are a concise statement that define the expected goal of a learning and teaching activity. It describes an observable and measurable skill, or knowledge that will be acquired by the learner. Writing learning objectives correctly is the key for designing learning and teaching activities¹, and it is the foundation for choosing the assessment methodology and deciding the weight of each part of the curriculum in the assessment². Many papers described the process of writing learning objectives^{3,4}, however, during the journey of curriculum development, people need to go back and forth for their course learning objectives. Therefore, I here propose a comprehensive way in preparing learning objectives that is divided into four stages: writing stage, revising stage, stage of classification according to skill domain and cognitive level, and finally the trimming stage.

Stage 1: Writing stage

During this stage, the educator will write the

learning objectives based on the “ABCD” approach, which refers to the elements in the learning objective statement. The A is for audience, B is for behavior, C is for condition, and D is for degree of skill level⁵. The audience should be able to perform the behavior within a condition or a context in a degree of competence. In the following paragraphs, each element will be described.

Write each objective beginning with the phrase “After participating in this session/attending this lecture/completing this course. etc.”, then decide who are the targeted learners; the audience; (Students/learners/ 5th year medical students/ Participants/students attending the ALS course, etc.) should be able to”. Then, decide what do you want the audience to do? This should be in the form of an action verb in addition to the content, as the following examples.

- The student should be able to LIST (VERB) 3 DDX of obstructive jaundice (CONTENT)
- The student should be able to EXPLAIN

(VERB) the steps of bilirubin metabolism
(CONTENT)

Choose a verb that matches the desired level of knowledge or the skill domain. The verb should be observable and measurable, and you should not use ill-defined verbs such as understand, know, learn, and grasp. After describing the targeted learners and the skill to be acquired, you should ask yourself if there is a context or condition that is required to perform the task; is there a certain situation or a specific environment for demonstration of the learned behavior? Conditions and contexts help you to make your learning objective more specific, to design your OSCE skill station, and to prepare your MCQ scenario.

Examples:

- (CONTEXT) The student should be able to design a management plan for a 65-year-old man with chronic hypertension in the emergency room when the patient presents with a headache.
- (CONDITION) The student should be able to insert successfully a peripheral IV line on a manikin in the simulation lab. (Condition can be a context too, however in this example a manikin should be provided during learning, it is a condition for learning.)

The last question is how “well” will the learner perform the task, i.e. task mastery level, time to perform the task, percentage of the task, etc. When degree is not specified, we assume 100% degree of performance. Performance degree is your friend when writing postgraduate learning objectives, specifying the degree of performance will help you to differentiate learning objectives for different level of learners. When there is an inevitable task overlap, it is difficult to differentiate learning objectives for each year of training, therefore having a performance scale is the best way to develop a post graduate learning objective.

Examples:

- The learner should be able to demonstrate insertion of a chest tube *correctly in 100% of the attempts* (5th year general surgery resident)
- The learner should be able to demonstrate insertion of a chest tube correctly in 70% of the attempts (2nd year general surgery resident)
- The learner should be able to explain at least 2 mechanisms for hepatic encephalopathy. (6th year medical student)
- The learner should be able to perform neonatal endotracheal intubation *within 20 seconds* (3rd year pediatric resident)

Stage 2: Revision Stage

Review your learning objectives and make sure that you are not listing your lecture outline, or your course activities, examples:

- The student will be taught how to perform lumbar puncture
- The life cycle of Echinococcus will be explained

Furthermore, you must make sure that you are not aiming for an objective that you did not include in the learning activity, with the exception of learning objectives that you want the student to achieve independently, like searching the literature for certain data. This should be stated clearly to the students.

Lastly, be smart and apply the “SMART” acronym³, making sure your learning objectives are *specific*: that is why you should avoid the verbs ‘understand, know and learn’, *measurable*: you could measure achieving this objective through one of the assessment methods (MCQs, OSCE, oral exam, workplace assessment, etc.), *achievable*; within the students’ predicted abilities, within the available tools, in a certain community, *relevant*; to the learner, to the course level, to the school mission, etc., and *time-based*; achieving the objective within a time limit is major part of assessing the student’s level and it is important for making the objective specific.

Stage 3: Skill Domain & Cognitive level’s Classification

During this stage you should classify the learning objective according to the skill domain, whether it is cognitive, psychomotor, or affective⁶, and according to Bloom’s Taxonomy of cognitive levels⁷. These are usually done when educators design their curricular matrix, or at a later stage when they are blueprinting their assessment. I do believe that having the classification of learning objectives as early as this stage is very beneficial. It saves time, and more importantly it allows the educators to customise their learning objectives according to the learners’ level and preserve the balance between the skill domains, and the balance between cognitive levels. It gives an early opportunity for curriculum modification.

Stage 4: Trimming Stage

This stage aims to eliminate redundancy in the course learning objectives. Frequent times in medical sciences, subjects overlap. During this stage you should revise the learning objectives of your part of the course with your colleagues’ learning objectives. Unnecessary repetition should be

removed, intentional repetitions might be needed sometimes to consolidate certain important subjects.

Conclusion

Preparing learning objectives is the most important step when designing curricula, having a clear guide for medical educators is essential. A template could be used to apply the described stages.

ORCID Number: <https://orcid.org/0000-0001-9313-112X>

Conflict of interest:

The author has no conflict of interest to declare

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