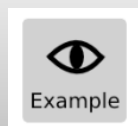


ANNEX 2: DOWNLOAD 2- Hints for formulating learning outcomes

There are some important ground rules for the formulation of learning outcomes. Here is a useful check list you can take into account.

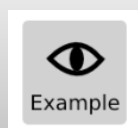
- ✓ **Learning outcomes are described from the perspective of the learner (not from the perspective of the instructor).** Learning outcomes do not describe the learning target or the learning path, but the result following the completion of a learning process. Learning outcomes are always described from the learners' viewpoint rather than from the teachers' viewpoint.
- ✓ **Use Active Verbs**
It is highly recommended to use active verbs in the formulation of learning outcomes. Begin each learning outcome with an action verb, followed by the object of the verb.
The use of active verbs is a core principle for formulating learning outcomes. Not all verbs are equally suitable for describing learning outcomes since some are not clear or meaningful enough or they might be related to the learning process rather than to the outcomes of this process (for example, 'collecting experience', 'getting familiar with').
Verbs should describe measurable or observable actions (for example, 'explain', 'identify', 'apply', 'analyse', 'develop', 'demonstrate'). It may prove useful to use or develop a taxonomy table with different categories or classifications of verbs. The most prominent taxonomy is the one developed by Bloom (and amended by several other authors). Such a table can be integrated with job-specific verbs depending on the sector and domain (**see Table 1 for examples**)



Correct: He/she can correctly select the wires to be used and pull them professionally, using an installation plan.

Insufficient: The learners were made familiar with the installation plans.

- ✓ **Specify and Contextualise the Active Verb**
Learning outcomes must be specified and contextualized. It is therefore essential to provide an indication as to what the knowledge and skills of the graduates refer to, and as to what kind of performance is concerned. In addition to the verb, the learning outcomes formulation should consist of the related object as well as an additional (part of a) sentence describing the context of the activity to be carried out.



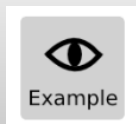
Correct: He/she is able to provide a general overview of the most commonly used materials and properties in electrical engineering.

Insufficient: He/she knows the most commonly used materials in electrical engineering.

- ✓ **Learning outcomes should be described briefly and precisely, complex sentences should be avoided.** They should not be formulated in overly general or overly concrete terms; clear (simple and unambiguous) terminology should be used as much as possible.

So Avoid Vague Formulations

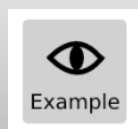
The formulation of learning outcomes should be neither too general, nor too specific.



Correct: He/she is able to prepare realistic workflow plans and staff assignments on the basis of the project planning.

Insufficient (too general formulation): He/she is familiar with personnel management in the construction sector.

Avoid Complex sentences



Correct: He/she knows the composition of tires and can name their individual components.

Insufficient (formulation too complicated): He/she knows that the tires of a passenger vehicle are made of natural and synthetic rubber, chemicals, oils, resins, black carbon, silica, steel, nylon and cord.in the construction sector.

- ✓ **Ensure that the Learning outcomes relate to the overall outcomes of your baseline course**
- ✓ **Learning Outcomes should be realistic to be achieved within the time and the resources available.**
- ✓ **The manner in which the learning outcomes are acquired is not relevant for the learning outcome description.** This means that it does not matter if the contents have been acquired through an e-learning programme, classroom instruction, at the workplace, at school or through self-study.
- ✓ **Learning outcomes should be externally verifiable.** The formulations must be chosen in a way that allows the evaluation process to determine if the learner has achieved the learning outcomes.
- ✓ **Specify the level of learning outcomes.** Formulations, particularly verbs, adjectives and context descriptions, should reflect the level of the specific learning outcomes. For example, it should be specified whether the observable action takes place in a structured or non-structured context or whether it is carried out under supervision or autonomously.

As to cognitive competences, six cognitive levels with increasing levels of complexity can be identified (Bloom, 1972): Examples of active verbs are listed at each level:

1. Knowledge Being able to recall and pass on information as precisely as possible.

Examples of active verbs at this level:

Arrange, define, describe, duplicate, identify, label, list, match, memorize, name, order, outline, recognize, relate, recall, repeat, reproduce, select, state

2. Comprehension: Being able to interpret information and relate and summarize it in one's own words

Examples of active verbs at this level:

Classify, convert, defend, describe, discuss, distinguish, estimate, explain, express, extend, generalize, give example(s), identify, indicate, infer, locate, paraphrase, predict, recognize, review, rewrite, select, summarize, translate

3. Application: Being able to apply abstractions (rules, methods, etc.) in concrete situations

Examples of active verbs at this level:

Calculate, demonstrate, develop, interpret, judge, modify, organize, predict, select, sketch, transfer

4. Analysing: Being able to break down ideas or problems into simpler parts and compare

Examples of active verbs at this level:

Analyse, appraise, compare, conclude, determine, discriminate, experiment, illustrate, infer, test

5. Evaluating: Being able to compile component ideas into a new whole

Examples of active verbs at this level:

Argue, assess, compare, decide, evaluate, predict, recommend, summarize, validate

6. Creating: Being able to make a qualified judgement

Examples of active verbs at this level:

Argue, arrange, expand, relate, generalize, generate, combine, join

Further job- and branch-specific verbs must be added to this list in order to describe **practical skills**, e.g. assemble (components); install and configure (software programmes); prepare and divide into portions (food).

In the psychomotor domain examples of effective active verbs are (Dave 1970, Simpson, 1972):

1. Imitation: The ability to observe and imitate the behaviour of another person

Examples of active verbs at this level:

Perform under supervision

2 Manipulation: The ability to reproduce actions from instructions and practice

Examples of active verbs at this level:

Perform, participate, assist – according to instructions

3 Precision: Perform a task autonomously

Examples of active verbs at this level:

Implement, handle, complete, perform – autonomously

4 Articulation: The ability to coordinate and modify several actions by combining several skills in order to meet special requirements or solve a problem *Examples of active verbs at this level:*

Adapt, develop, design, alter, coordinate

5 Naturalization: The internalizing of processes: skills are combined consistently and can be performed "without thinking"

Examples of active verbs at this level:

Adapt, adjust, transfer

Examples of verbs in the field of **affective domain** (Krathwohl, 2002) are:

1 Receiving: Willingness to note information

Examples of active verbs at this level:

Listen, show, hold in esteem

2 Responding: Voluntary, active participation in learning/working; e.g. participation in group discussions

Examples of active verbs at this level:

Support, participate, practise, cooperate, integrate

3 Valuing: Ability to judge the worth of material against stated criteria

Examples of active verbs at this level:

Question, adapt to, take into consideration

4 Organization of values: Individual processing of (often conflicting) values to form an organized structure, beginning of an internalization of these values

Examples of active verbs at this level:

Differentiate, judge, dispute, organize

5. Characterization by value set: the individual has a stable system of values regarding convictions, opinions and attitudes which steer her/his behaviour predictably and consistently

Examples of active verbs at this level:

Recognize, accept, answer, solve