# Technological support for selecting assessment methods

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# TALOE Project

- Time to assess learning outcomes in e-learning

- Ref.: 543097-LLP-1-2013-1-PT-KA3-KA3MP

- Key Activity 3: Multilateral projects

- Duration: January 2014-December 2015

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# TALOE CONSORTIUM

- Universidade do Porto (UPORTO) - Portugal (coordinator)

- Gábor Dénes Főiskola (DGC) - Hungary

- Sveučilišni računski centar Sveučilišta u Zagrebu (SRCE) - Croatia

- Innovate4Future - Center for Advanced Educational Solutions (I4F) - Romania

- Università degli Studi di Padova (UniPD) - Italy

- European Distance and E-Learning Network (EDEN) - United Kingdom

- European University Continuing Education Network (EUCEN) - Belgium

- Hariduse Infotehnoloogia Sihtasutus (HITSA) - Estonia

- Universidad Nacional de Educación a Distancia (UNED) - Spain

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# TALOE – Time to Assess Learning Outcomes in E-learning

Promote the internal consistency of online courses by using the ALOA model (Aligning Learning Outcomes and Assessment).

Develop a web-based tool to help teachers and trainers decide on the e-assessment strategies to use in their online courses.

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# What should be assessed?

| LEARNING OUTCOMES | ALIGNMENT | ASSESSMENT |
|---|---|---|

*What do we hope students will learn?*

*How do we know that they have learned?*

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# Learning outcomes

LO:
"statements of what a learner is expected to know, understand and/or be able to do at the end of a period of learning" (MSTI, 2005, p. 29)

**Table 1. The cognitive processes dimension — categories, cognitive processes (and alternative names)**

lower order thinking skills ⟶ higher order thinking skills

| remember | understand | apply | analyze | evaluate | create |
|---|---|---|---|---|---|
| recognizing (identifying) | interpreting (clarifying, paraphrasing, representing, translating) | executing (carrying out) | differentiating (discriminating, distinguishing, focusing, selecting) | checking (coordinating, detecting, monitoring, testing) | generating (hypothesizing) |
| recalling (retrieving) | exemplifying (illustrating, instantiating) | implementing (using) | organizing (finding coherence, integrating, outlining, parsing, structuring) | critiquing (judging) | planning (designing) |
| | classifying (categorizing, subsuming) | | attributing (deconstructing) | | producing (construct) |
| | summarizing (abstracting, generalizing) | | | | |
| | inferring (concluding, extrapolating, interpolating, predicting) | | | | |
| | comparing (contrasting, mapping, matching) | | | | |
| | explaining (constructing models) | | | | |

The cognitive process dimension, revised Bloom's taxonomy. Adapted from Anderson and Krathwohl (2001), 67–68. Source:
http://www.celt.iastate.edu/teaching-resources/effective-practice/revised-blooms-taxonomy/

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# Assessment methods

- Assessment: Any procedure used to estimate student learning for whatever purpose.

- Six categories of general assessment methods:

  - Multiple choice questions (MCQ)
  - Essays
  - Problem solving
  - Practical work
  - Short- answer questions
  - Reflective practice assignments

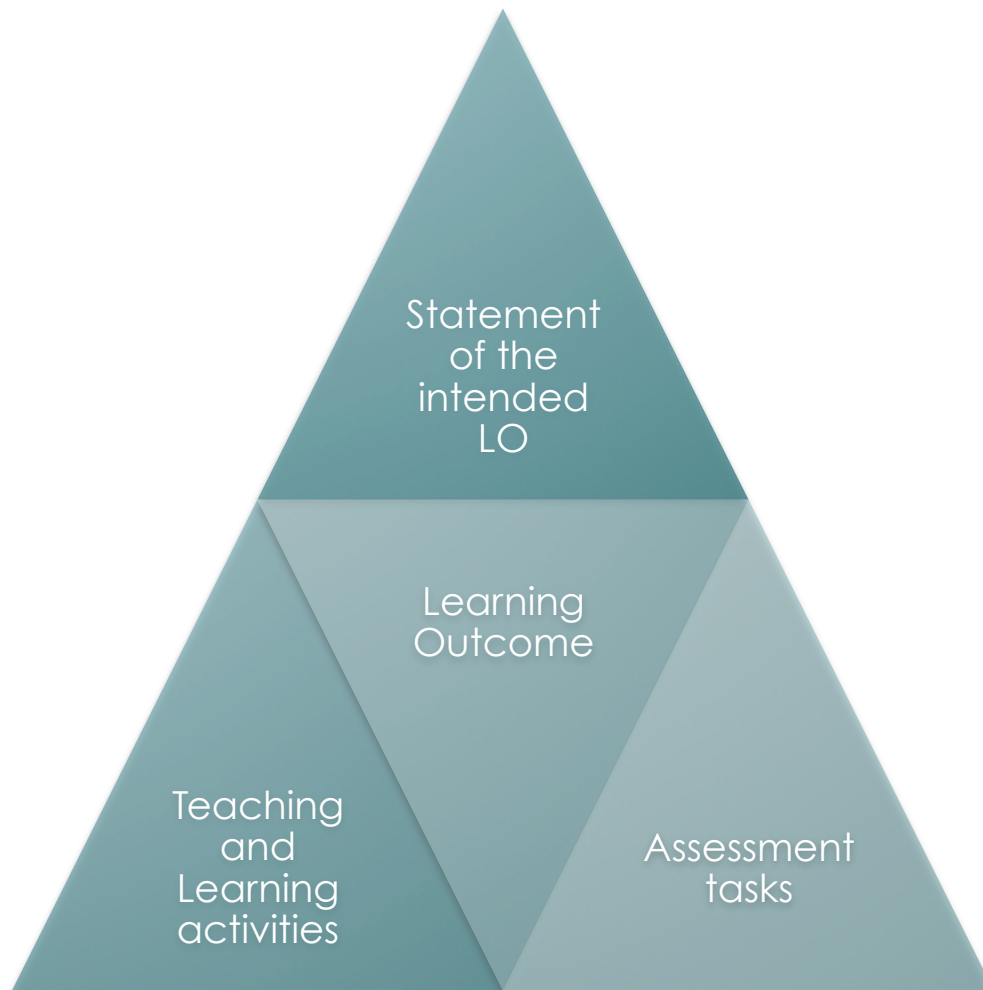(Based on the work of Brown, Bull & Plendebury, 1997)

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# Alignment



Statement of the intended LO

Learning Outcome

Teaching and Learning activities

Assessment tasks

*Alignment: The level of correspondence between objectives, instruction and assessment.*

*(Anderson et al)*

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# TALOE web tool

- Step 1: you will be asked to describe the Learning Outcome you want your students to achieve. Please keep in mind that the Learning Outcomes should be described in a clear way and kept simple. If you have difficulties with this stage, or you wish to learn more about how you can better write learning outcomes please go to the section Writing Learning Outcomes.

- Example: *Identify the phases of a cooperation project using the logical framework approach*

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# TALOE web tool

- Step 2: After defining your learning outcome you will be asked to choose the verb/verbs that best describe it (minimum 1, maximum 3)

- Go through the process and receive the assessment advice for your course!

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# TALOE web tool: taloetool.up.pt



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# Example 1

## Ask for Assessment Advice

**Step 1:** Choose the learning outcome you want your students to achieve. You can write the learning outcome in the box below.

> Identify the phases of a cooperation project using the logical framework approach

**Step 2:** Please select from one or more of the tabs below the verb or the verbs (maximum 3) that better describes the Learning Outcome:

| Remember | Understand | Apply | Analyze | Evaluate | Create |
|----------|------------|-------|---------|----------|--------|

☑ Recognizing – Locating knowledge in long-term memory that is consistent with presented material
☐ Recalling – Retrieving relevant knowledge from long-term memory

[ Check assessment methods ]

will have to recognize the type of problem, select the appropriate routine and then execute it.

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# Example 1

## Results

This is your learning outcome:

Identify the phases of a cooperation project using the logical framework approach

**You consider that the verbs that better describe the Learning Outcome are:** *Recognizing Planning*

**Based on the information provided, we suggest the following e-assessment methods:**

### 1. MCQ Remember

Response requires recall or recognition of one item correct information. Question includes who, what, why, when, where, which, choose, find, how, define, label, show, spell, list, match, name, relate, tell, recall, select.

### 2. Essay – Quote to discuss

The student is asked to examine a perspective and to discuss it based on his knowledge of the topic. It is expected that the student will recognize the quote and be able to locate it in a context, recalling relevant knowledge related with the topic. The student will then interpret the quote and will deconstruct it to determine the point of view of the author. Finally, the student will make his judgment integrating these processes.

### 3. Problem solving – diagnosis

The student is presented with a problem and selects the correct routine or the correct way to use a routine. Even though this is still a familiar task, it is a more complex type of task since less information is provided to the student. The student will have to recognize the type of problem, select the appropriate routine and then execute it.

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# Example 2

## Ask for Assessment Advice

**Step 1:** Choose the learning outcome you want your students to achieve. You can write the learning outcome in the box below.

> Design a cooperation project

**Step 2:** Please select from one or more of the tabs below the verb or the verbs (maximum 3) that better describes the Learning Outcome:

| Remember | Understand | Apply | Analyze | Evaluate | Create |
|----------|-----------|-------|---------|----------|--------|

- ☐ Generating – Coming up with an alternative hypothesis based on criteria
- ☑ Planning – Devising a procedure for accomplishing some task
- ☐ Producing – Inventing a product

Check assessment methods

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# Example 2

## Results

This is your learning outcome:

> Design a cooperation project

**You consider that the verbs that better describe the Learning Outcome are:** *Planning*

**Based on the information provided, we suggest the following e-assessment methods:**

### 1. Practical work – open ended enquiry

In this type of practical, the students are given a problem and constraints. They will have to formulate it, choose and design the experimental procedures, interpret the results and implications. The student will be most likely, making judgments as he proceeds.

### 2. Essay – Problem

The student is given a situation/problem and asked to describe how he would act. In this type of essay, the student is expected to interpret the situation and plan how he would proceed, based on his knowledge of the topic.

### 3. Problem solving – generation

In these types of activities, the student develops new routines or new ways to use routines to be able to solve the problem. It may be highly creative, if new routines are created or more basic if only new sequences are applied to known routines.

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# e-assessment

| | |
|---|---|
| MCQ | Computer based test / online testing, Optical reading, CAT (Computerized Adaptive Testing) |
| Essays | File Upload, Essay Question in online exam, Discussion Forum Published media, Wiki, Concept maps, Videoconferencing, Chat |
| Problem solving | Computer based test / online testing, File upload, Chat, Concept maps and Diagrams, Simulation, Scenario-based activity |
| Practical Work | File upload, Computer based tests/Online testing, Video file, animations and sequence of images, Videoconferencing, Diagrams Publish media or wiki, Chat and discussion forum, Virtual Labs and Remote Labs, Simulation, Scenario-based activity, Game based learning |
| SAQs | Computer based test / online testing, Chat or Forum, Concept maps and Diagrams |
| Reflective Practice | Portfolios |

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The tool can be used in two ways:

- Check if the existing assessment methods in an existing course are in line with the stated learning outcomes

- Help you make decisions on the most appropriate assessment method for the new course or module

Limitations

- Focused on the cognitive domain

- Testers request examples of use, e-assesment specific instruments, besides the description of each assessment method types

# Contact information

- TALOE web tool: http://taloetool.up.pt/
- Email: taloe@up.pt

- Feedback survey in the web tool site

- More info: Gil Jaurena, Inés & Kucina, Sandra. (2016). Aligning learning outcomes and assessment methods: a web tool for e-learning courses. *International Journal of Educational Technology in Higher Education, 13*(17), 1-16. http://dx.doi.org/10.1186/s41239-016-0016-z

Thank you!

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