Proposing Assessment Methods for Different Learning Outcomes: Project TALOE

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Universidade do Porto

HITSA CONFERENCE
"Fiber-optic Road of Education“
Tallinn, 14 April 2016

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What should be assessed?

What do we hope students will learn?

How do we know that they have learned?
Before: What will we teach our students?

LEARNING OBJECTIVES

ALIGNMENT

CONTENT

ASSESSMENT

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Why change?...

- Qualification - *skills and competences* (new?)
- Mobility and *recognition*
- *Quality* approach and accreditation

**THE FOCUS IS ON THE STUDENTS!**

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Learning Outcomes

Learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of learning.

(AHELO - Assessment of Higher Education Learning Outcomes by OECD)

A common language, building blocks, genetic code

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Assessment

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

(Brown et al)

e-Assessment is the use of ICT and the Internet in particular for the assessment of learning, including design, delivery and/or recording of responses.

(JISC)

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Categories of assessment

- Multiple choice questions
- Short Answer Questions
- Problems
- Essays
- Practical work
- Reflective practice
Alignment: The level of correspondence between objectives, instruction and assessment.

(Anderson et al)
Alignment scenarios

At course level...

- Many LOs
  - One Assessment

- Many LOs
  - Many Assessments

- One LO
  - One Assessment

- One LO
  - Many Assessments

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Simple problem...?
The ALOA conceptual model

LOs in QFs
LOs in programmes
LOs in courses

BLOOM

ALIGNMENT

(e)Assessment tasks
Assessment methods

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The student should be able to describe the main components of a personal computer.
Bloom’s Taxonomy (revised by Anderson et al)

Cognitive processes
- Remember
- Understand
- Apply
- Analyze
- Evaluate
- Create

Type of knowledge
- Factual
- Conceptual
- Procedural
- Metacognitive

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Teacher with NEW course

- Write LOs statements
- Define content
- Define learning activities
- Define assessment
- Ensure alignment

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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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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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STEP 2: Build rBloom matrix

**KNOWLEDGE**

Procedural
Conceptual

**COGNITIVE PROCESS**

Understand: interpreting
Apply: implementing
Evaluate: checking, critiquing
Create: planning, producing

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<thead>
<tr>
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<th>FACTUAL</th>
<th>CONCEPTUAL</th>
<th>PROCEDURAL</th>
<th>METACOGNITIVE</th>
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<td><strong>CREATE</strong></td>
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</table>
Select the option “Ask for assessment Advice”

About TALOE Webtool

Welcome to the TALOE webtool that will help you decide which e-assessment strategies to use in your online courses. The tool can be used in two ways:

- Check if the existing assessment methods in 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.

The webtool consists of the matrix that aligns the six categories of the cognitive process dimension and relative cognitive processes with the six categories of the general assessment (based on the ALOA model) each with subcategories.

How to use the webtool

The TALOE webtool will guide you through two steps that will help you to better define your learning outcomes and to decide adequate assessment strategies for each learning outcome.

Step 1
During this stage you will be asked to describe the Learning Outcomes 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.

Step 2
After defining your learning outcome you will be asked to choose the verb/verbs that best describe it.

Go through the process and receive the assessment advice for your course!
The first step is to describe your Learning Outcome

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.

Insert the description of Learning Outcome here

**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
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.

Students will be able to explain the function, structure and components of the musculoskeletal system

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
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Check assessment methods
The second step is selecting the category(ies) of cognitive process(es).

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.

Students will be able to explain the function, structure and components of the musculoskeletal system.

**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:

<table>
<thead>
<tr>
<th>Remember</th>
<th>Understand</th>
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<th>Evaluate</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Interpreting – Changing from one form of representation to another</td>
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<tr>
<td>Exemplifying – Finding a specific example or illustration of a concept or principle</td>
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<tr>
<td>Summarizing – Abstracting a general theme or a major point</td>
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<td>Inferring – Drawing a logical conclusion from presented information</td>
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<td>Comparing – Detecting correspondences between two ideas, objects or like</td>
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<td>Explaining – Constructing a cause-and-effect model of a system</td>
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Check assessment methods
Select up to 3 cognitive processes that better describe your Learning Outcome

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.

Students will be able to explain the function, structure and components of the musculoskeletal system

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

- Interpreting – Changing from one form of representation to another
- Exemplifying – Finding a specific example or illustration of a concept or principle
- Classifying – Determining that something belongs to a category
- Summarizing – Abstracting a general theme or a major point
- Infering – Drawing a logical conclusion from presented information
- Comparing – Detecting correspondences between two ideas, objects or the like
- Explaining – Constructing a cause-and-effect model of a system

Check assessment methods
You can select cognitive processes that belong to different categories

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.

Students will be able to explain the function, structure and components of the musculoskeletal system

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

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<tr>
<td>□ Differentiating – Distinguishing relevant from irrelevant parts or important from unimportant parts of presented material</td>
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<td>□ Organizing – Determining how elements fit or function within a structure</td>
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<td>□ Attributing – Determining a point of view, bias, values, or intent underlying presented material</td>
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Check assessment methods
When you finish, click the button “Check Assessment Methods”

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.

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Check assessment methods
Results

This is your learning outcome:

Students will be able to explain the function, structure and components of the musculoskeletal system

You consider that the verbs that better describe the Learning Outcome are:  Summarizing Explaining Organizing

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

1. Essay – Describe/Explain

   The students are asked to describe and give a rationale for a certain issue. It is expected that the student will recall knowledge related with the topic and will select and organize it to provide an explanation for the issue.

2. Essay – Speculative

   The student is asked to construct an alternative reality and to provide a rationale for his view. The student will start creating the alternative scenario based on what is asked, his own ideas and integrating his previous knowledge related with the topic. It is expected that the student organizes his ideas while describing them and also that he provides an explanation for what he describes. The type of knowledge involved is mostly likely conceptual knowledge but it might integrate factual and procedural knowledge.

3. Essay – Discuss

   The students are asked to describe and give a rationale for a certain issue. It is expected that the student will recall knowledge related with the topic and will select and organize it to provide an explanation for the issue.

For more information regarding the recommended methods please check the section Assessment methods.
For each assessment category, you can find specific assessment methods and e-assessment strategies of implementation.

**Essays**

In an essay the student is expected to produce a structured text that responds to the question or challenge posed by the teacher. The nature of an essay may vary, determining different Learning Outcomes. Essays allow for assessing deep learning instead of rote learning. Essays promote understanding, analysis and evaluation as well as the integration of different types of knowledge and skills. Depending on how essays are designed, they may contribute to the acquisition and assessment of transversal skills like communication, working in teams, lifelong learning.

- Speculative essay
- Quote to discuss
- Assertion
- Write on
- Describe/explain
- Discuss
- Compare
- Evaluate
- Problem

**E-assessment implementation of essays**

**File Upload**

Assessment using essays is a traditional method that may be implemented online in a straightforward manner. Any tool that allows the student to send a single text file to the teacher may be used. This includes e-mail, assignment tools in LMS that allow the uploading of files. Using a LMS has advantages since it allows the automated control of the submission processes in an organized manner: number of submissions per student, size of the file, deadlines, etc.

**Essay Question in online exam**

Most LMS or online testing software includes a type of question that is “Essay” that allows the writing of text or the submission of a file.

**Discussion Forum**
Thank you!

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