

# E-ASSESSMENT IN A MASTER ONLINE COURSE. A CASE STUDY

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## Abstract

E-assessment is one of the challenges in online education. Within the frame of an ongoing European project (*TALOE-Time to Assess Learning Outcomes in E-learning*, ref. 543097-LLP-1-2013-1-PT-KA3-KA3MP), we have developed a case study of an innovative e-assessment practice in a master online course implemented at UNED (Universidad Nacional de Educación a Distancia-Spanish National Distance Education University). The practice was selected as innovative following the criteria proposed by the TALOE project, which included, among others, to assess complex activities using knowledge and skills in problem-solving or authentic tasks; integrate assessment with teaching and learning and involve students as active participants; and use a diverse range of assessment methods.

In this paper, we present the practice, highlighting the learning outcomes of the course and the corresponding e-assessment strategies being used. This case study is one of those that will be used to test the web-based tool that is being developed in the TALOE project to help teachers and trainers decide on the e-assessment strategies to use in their online courses.

Keywords: e-assessment, online education, learning outcomes.

## 1 INTRODUCTION

Learning assessment is established as a key process in education. Being learning the goal of educational initiatives, its evaluation becomes the means to analyse, guide and promote students' performance [1]. Learning assessment in open and distance education is facing new challenges and scenarios, due to current or renewed conceptual and political frames -such as the European Higher Education Area (EHEA) [2] and the European Credit Transfer and Accumulation System (ECTS) [3]- and to the increasing number of developments in the technological and pedagogical fields -such as automatic assessment tools or peer grading. E-assessment or the use of technological tools to facilitate assessment in online education is one of the challenges [4].

Within the frame of an ongoing European project (*TALOE-Time to Assess Learning Outcomes in E-learning*, ref. 543097-LLP-1-2013-1-PT-KA3-KA3MP), we have developed a case study of an innovative e-assessment practice in a master online course implemented at UNED (Universidad Nacional de Educación a Distancia-Spanish National Distance Education University). The practice was selected as innovative following the criteria proposed by the TALOE project.

## 2 TALOE PROJECT: TIME TO ASSESS LEARNING OUTCOMES IN E-LEARNING

TALOE project (<http://taloe.up.pt>) intends to promote the internal consistency of online courses. The European Commission finances it during 2014 and 2015 (Ref. 543097-LLP-1-2013-1-PT-KA3-KA3MP). It uses an existing tool called the ALOA model (Aligning Learning Outcomes and Assessment) [5], which highlights the connection between the intended learning outcomes and the assessment strategy used during a course. It uses the revised version of Bloom's Taxonomy [6] to establish the link between the LOs and general assessment methods. The ALOA model also proposes different scenarios of application that allow the model to be used to verify the consistency of the courses or to propose new assessment strategies that are linked with the LOs statements of the course or module.

### 2.1 Selection and analysis of e-assessment practices (case studies)

In order to select case studies that represent innovative and effective e-assessment practices, it was necessary to agree on a common set of criteria. Thus, the first task in the project was to define the selection criteria for the e-assessment examples, to be used when analyzing the collected examples

and this was done among all the partners in the TALOE project, coordinated by the team in Work Package 3 (WP3) in 2014.

Finally, according to the Standards and Guidelines for Quality Assurance in the European Higher Education Area [9], the following criteria were established in order to guide the selection of exemplary practices, which should fulfil most (or all) of these criteria:

1. Be designed to measure the achievement of the intended learning outcomes and other course/programme objectives;
2. Be appropriate for their purpose, whether diagnostic, formative or summative;
3. Have clear and published criteria for marking;
4. Where possible, not rely on the judgements of single examiners;
5. Assess more holistic, complex activities using knowledge and skills in problem-solving or authentic tasks;
6. Use a diverse range of assessment methods, resulting in qualitative descriptions or judgements;
7. Integrate assessment with teaching and learning and involve students as active participants;
8. Identify and describe achievements according to relevant criteria and standards;

The next step after deciding on the selection criteria was to collect relevant e-assessment practices that match the criteria. In the case of UNED, we selected two examples, and in this paper we describe one of them, highlighting those aspects that were analyzed in relation to the project.

### 3 THE COURSE

Table 1 contains the basic information of the course [7], as required in the template for the analysis of the case studies.

Table 1. Course basic information

Course/module/lesson name:	Course: Diseño y evaluación de programas y proyectos ( <i>Design and evaluation of programs and projects</i> ). Professor: Inés Gil-Jaurena
Scientific Field (Identification of the scientific area of the course)	Education
Title of the full programme (Identification of the programme to which the course belongs)	Máster Euro-latinoamericano en Educación Intercultural ( <i>Master's Degree in Intercultural Education</i> )
Level of Education (EQF can be used as reference, for instance)	EQF Level 7 (Master)
Number of ECTS credits	5

#### 3.1 Learning outcomes

In order to evaluate students properly, a course must previously establish the learning outcomes which students are expected to demonstrate after successfully completing the programme. These are described in the Study Guide available in the virtual platform since the beginning of the term, but also in the general information provided on the Master's degree website.

In this case, at the end of the course, students should:

- a) Be able to define and manage basic concepts relating to the design and evaluation of projects and programs.
- b) Identify the project cycle and know the basic steps in the design and evaluation of projects.
- c) Know the specificities of objective-oriented projects.
- d) Manage terminology and tools of the logical framework approach (LFA).

- e) Know and analyze tools for design and evaluation of projects.
- f) Manage participatory methodologies.
- g) Design intervention projects.
- h) Evaluate intervention projects.

### 3.2 Content

The course deals with the design and evaluation of projects, with particular emphasis on the knowledge of the overall process and the management of tools for the design, management and evaluation of projects. It is a mandatory course in the practical itinerary of the Master's programme, and an elective course in the research itinerary. It is scheduled in the first semester of the Master's programme and is a part of module III (scenarios and practices). Module I refers to conceptual aspects and Module II refers to methodological aspects.

The contents of the course are organised in three blocks:

1. Basic concepts about design and evaluation of programs and projects.
2. Cycle of the project. Stages in the design and evaluation of projects.
3. Tools for the design and evaluation of projects.

### 3.3 Teaching methods

The Master's degree is taught in Spanish, in distance mode: all courses are delivered through the UNED virtual platform, aLF (<http://www.innova.uned.es>), although there is a compulsory face to face session (two day seminar) each year, which students must attend. This seminar focuses on different themes, relevant to the Master's contents, and promotes face-to-face interaction, as well as a chance for students to meet their teachers (those who are at UNED, or who can attend the seminar)<sup>1</sup>.

The following training activities should be carried out to achieve the learning outcomes:

- Comprehensive reading of study materials
- Use of additional resources and sources of information
- Access and participation in discussion forums
- Collaborative work through the use of ICT
- Resolution of tasks and application of acquired knowledge: definition of concepts, case studies (individual and / or collaborative way), project design, project evaluation

These are scheduled according to a specific calendar and tasks (table 2).

Table 2. Course schedule

Calendar	Readings	task 1: on-line tests	task 2: project design	task 3: project evaluation
Month 1	Basic materials, blocks I and II	On-line tests (3 tests in different dates)		
Month 2				Case study
Month 3	Basic materials, blocks I, II and III		Project draft	
Month 4	Basic materials and additional readings		Project design (final version)	
Month 5	(optional)			Self-assessment of own project and assessment of a colleague's project (co-evaluation)

<sup>1</sup> Many of the professors participating in this Master's Programme belong to other institutions, both in Spain and abroad (i.e. Mexico). It is always guaranteed that at least one representative from Universidad Veracruzana in Mexico is present at the Seminar, as there is an agreement with this university.

Participation in the discussion forum in the virtual platform is a cross task throughout the course.

### **3.4 E-assessment methods**

#### **3.4.1 Task 1: On-line assessment about basic content**

The first activity is the implementation of evaluation activities on basic concepts in the virtual course on basic concepts. These are self-assessment tests available on certain dates that address the basic content of the three thematic blocks.

The objective of the activity is to demonstrate knowledge of specific vocabulary related to the design and evaluation of programs and projects and to manage basic or new concepts in relation to it (*learning outcomes a, b, c, d*).

Each student is expected to participate in the on-line assessment activities, following these steps:

- Read, check and handle basic readings.
- Respond to evaluation tests on the specified dates for each reading or topic.
- Check or comment in the forum on any questions or insights around the basic concepts.

Each test is available during 15 days, and 3 attempts are allowed. Questions include multiple choice questions (some with one correct answer and some with more than one correct answer), and open questions.

An individual commitment of 20 hours of work is estimated for this task.

For the evaluation of the activity, which represents up to 20% of the final grade in the course, the following criteria are considered:

- 1) Assimilation of content.
- 2) Mastery of fundamental concepts and specific vocabulary.

#### **3.4.2 Task 2: Design of an intervention project**

This activity involves the design of a project following the guidelines outlined in the basic reading assignments. The student is free to choose the theme.

The objectives of the activity are: to identify the project cycle and to know the basic steps in the design and evaluation of projects, know the specificities of objective-oriented projects, manage terminology and tools of the LFA, know and analyze tools for the design and evaluation of projects, manage participatory methodologies and design intervention projects (*learning outcomes b, c, d, e, f, g*).

Each student is expected to design a project, individually or in groups, following these steps:

- Submit an outline or draft setting out the purpose of the project and the basic structure, during the 2nd-3rd month of the course. Templates are provided.
- Given the comments and rating of the professor, they should design a project taking into account the phases of the cycle and the inclusion of tools from block III. The final draft will be delivered 15 days before the end of the course. Templates are provided.

A commitment of 50 hours of work is estimated: 10 hours for the draft and 40 for the entire project.

For the evaluation of the activity, which represents up to 45% of the final grade in the course (15% the draft and 30% the final project), the following criteria are considered:

- 1) Use of the course contents.
- 2) Mastery of fundamental concepts and specific vocabulary.
- 3) Logical structure of the project, internal consistency.
- 4) Originality.
- 5) Application of knowledge to the improvement of social reality.
- 6) Adjustment of the used sources and correction in quotes and references.

### 3.4.3 Task 3: Evaluation of projects

This activity consists in evaluating different projects, following the guidelines outlined in the basic materials.

The objectives of the activity are: ability to define and manage basic concepts related to the design and evaluation of projects and programs, know and analyze tools for design and evaluation of projects, manage participatory methodologies and evaluate intervention projects (*learning outcomes a, e, f, h*).

The activity consists of two parts:

- Perform at least three evaluative comments on the "case study" forum about a project proposed by the professor, during month 2.
- Evaluate one final project prepared by a peer, and the own final project (self-assessment) in month 5. An assessment template/rubric is provided.

A commitment of 30 hours of work is estimated: 15 hours for the analysis of the case and 15 for evaluating the final projects.

For the evaluation of the activity, which represents up to 35% of the final grade in the course (15% case, and 20% final projects), the following criteria are considered:

- 1) Use of the course contents.
- 2) Mastery of fundamental concepts and specific vocabulary.
- 3) Consistency of the analysis performed.
- 4) Accuracy in valuation.
- 5) Application of knowledge to the improvement of social reality.
- 6) Adjustment of the used sources and correction in quotes and references.

## 4 TALOE SPECIFIC INFORMATION – RESULTS OF THE ANALYSIS OF THE CASE STUDY

Within the project, we were required to write up to 2000 words matching our case with the different 8 TALOE criteria aspects. We include here the results of our analysis in relation to each of these selection criteria (underneath each of the items in the TALOE template):

1. Identify the purpose of the assessment: diagnostic, formative, summative. (**Selection Criteria 2**).

The purpose was mainly formative and summative. The tasks contribute to the final mark in the course (summative) and are, at the same time, designed as learning activities (formative).

2. For each assessment practice identified, describe what was the learning outcome that was intended to be assessed. (**Selection Criteria 1**)

Assessment practice 1: on-line tests

LO assessed: *a, b, c, d*

Assessment practice 2: project design

LOs assessed: *b, c, d, e, f, g*

Assessment practice 3: project evaluation

LOs assessed: *a, e, f, h*

3. Identify and describe what were the criteria used to mark the results of each e-assessment practice (**Selection Criteria 3/8**)

The criteria used for assessing each task (see section 3.4) are known beforehand by the students, as they are clearly presented in the syllabus and in the virtual course.

Each task is marked from 1 to 10 (5 required to pass the activity). The students also know the weighing of each task in the final mark.

4. Identify who were the assessors: single teacher, multiple teachers, peers, self. (**Selection Criteria 4**)
  - Assessment practice 1: on-line tests
    - Teacher, self
  - Assessment practice 2: project design
    - Teacher, peers, self
  - Assessment practice 3: project evaluation
    - Teacher, peers, self
5. Describe what type of skills and competences were intended to be assessed by each method/practice (**Selection Criteria 5**)
  - Assessment practice 1: on-line tests
    - This task is focused on assessing conceptual aspects, use of appropriate vocabulary.
  - Assessment practice 2: project design
    - This task focuses on designing an original project with the support of the course materials, the teacher comments, self-reflection and peers judgment.
  - Assessment practice 3: project evaluation
    - This task puts into practice analytical skills
6. Starting from each learning outcome (see section 3.1.), identify which e-assessment methods/practices were used to evaluate the real achievement (**Selection Criteria 6**)
  - a) *Be able to define and manage basic concepts relating to the design and evaluation of projects and programs*
    - on-line test / project evaluation
  - b) *Identify the project cycle and know the basic steps in the design and evaluation of projects*  
*on-line test / project design*
  - c) *Know the specificities of objective-oriented projects*
    - on-line test / project design
  - d) *Manage terminology and tools of the logical framework approach (LFA)*
    - on-line test / project design
  - e) *Know and analyze tools for design and evaluation of projects*
    - project design / project evaluation
  - f) *Manage participatory methodologies*
    - project design / project evaluation
  - g) *Design intervention projects*
    - project design
  - h) *Evaluate intervention projects*
    - project evaluation
7. Describe how the learning outcomes, the teaching practices and the e-assessment strategies identified are connected and promote the autonomy of the learner (**Selection Criteria 7**).

Students are involved in the learning and assessment activities throughout the course. Autonomy, creativity and collaboration are encouraged in the diverse tasks.

## 5 CONCLUSIONS

We can conclude that this case study selected by UNED team matches the criteria that were established at the beginning of the project to exemplify innovative and effective practices. These criteria and the template used to describe and analyze the case study allowed us to assess it from a different perspective to that generally used in the evaluation of the course (UNED's courses are evaluated by students, and there is also a self-evaluation by the teachers/professors). And in relation to assessing student's achievement in a course, we can contend that the use of a diverse range of

assessment methods contributes to the evaluation of different learning outcomes, as stated in the previous section, in relation to selection criteria 6, and can contribute to more meaningful learning.

The previous analysis was developed within TALOE project and was focused on the matching of learning outcomes and assessment strategies. Besides the web based platform which is being developed as a tool to assist faculty/teachers/trainers in the definition of an e-assessment strategy for their courses or modules based on learning outcomes, we consider that the guidelines and criteria established to analyze the case studies within the TALOE project provide a useful framework to evaluate e-learning and distant education courses.

Other aspects were not considered in the analysis; they are related, for instance, to the challenges of peer-evaluation or the possibilities of providing formative feedback to a higher number of students in an online mode of delivery. Some of these challenges we addressed in previous publications by the authors [1] [8], and, within the context of e-assessment, it is relevant to highlight the pedagogical value of group/peer learning and assessment, which requires a specific design and support from cooperative online tools that can facilitate an “expanded assessment” [9].

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