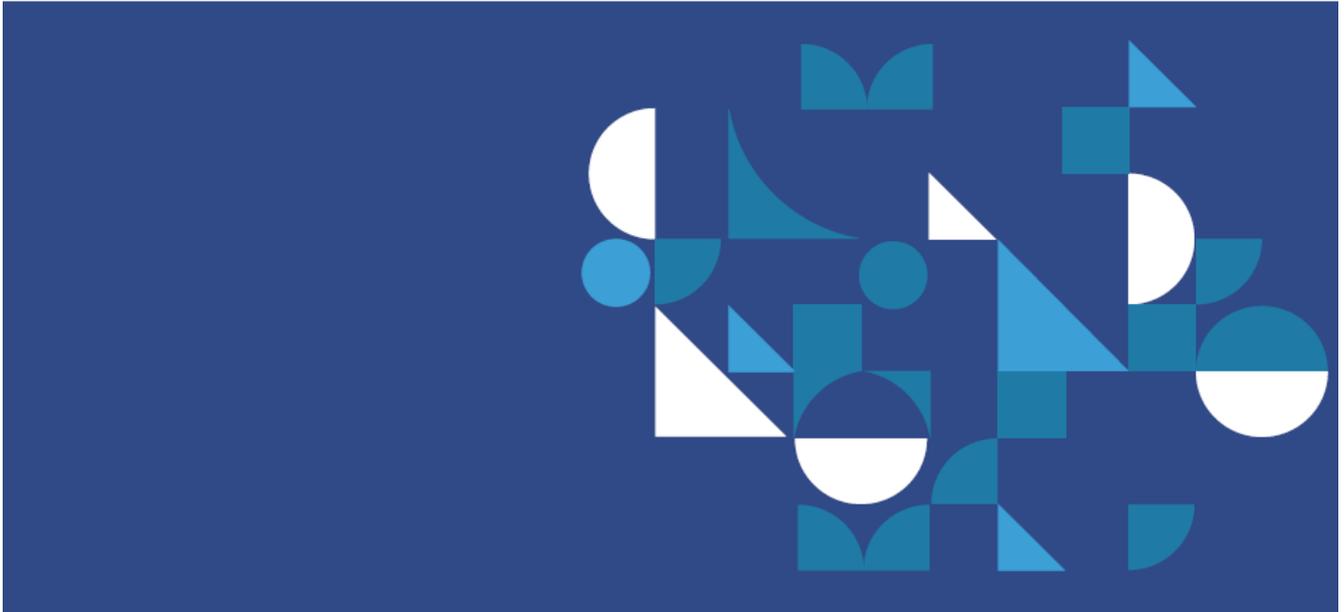




Industrial Engineering and  
Management of European  
Higher Education



# Deliverable: E-LEARNING MODULES EVALUATION

Date: 17/10/2022



The European Commission support for the production of this publication does not constitute endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein

## **Deliverable R4.5; Work package 4; Dissemination level R (Restricted)**

### **Authors and contributors:**

Joaquín Ordieres (UPM), Miguel Ortega (UPM), Miguel Gutiérrez (UPM), Gustavo Morales (UPM), Mercedes Grijalvo (UPM), Eduardo Caro (UPM), Javier Cara (UPM), Elcio Mendonça (UPM), Raúl Sanchís (UPM), Silvia Villalgorido (UPM), Giovanni Mummolo (POLIBA), Salvatore Digiesi (POLIBA), Francesco Facchini (POLIBA), Giorgio Mossa (POLIBA), Marek Fertsch (PUT), Agnieszka Stachowiak (PUT), Joanna Oleśków- Szłapka (PUT), Janerik Lundquist (LIU), Umberto Pascucci (VALUEDO), Alessandro Guadagni (VALUEDO), Felice De Stena (BOSCH), Hanna Golas (ALCO-MOT), Jens Wallgren (IMPLEMA), Carlos Urueña (ARRUTI)

*This document is part of the Result 4.5 “E-learning modules Evaluation” of the Erasmus+ Project “Industrial Engineering and Management of European Higher Education / IE3”.*

is licensed under a Creative Commons Attribution Non Commercial Share Alike 4.0 International License. IE3 Consortium Parties do not warrant that the information contained in the Deliverable is capable of use, or that use of the information is free from risk,

### **Copyright notice**

This report contains material which is the copyright of IE3 Consortium Parties. All IE3 Consortium Parties have agreed that the content of the report shall be kept as restricted inside the consortium and disclosed in front of the EU Commission officers. The consortium accepts no liability for loss or damage suffered by any person or any entity using the information.

© 2019 - 2022 IE3 Consortium Parties.

### **Note:**

*For anyone interested and having the right to access to further information about the deliverable in the project, please contact us at: [info@ie3.eu](mailto:info@ie3.eu)*

## OUTLINE

Introduction .....	4
Context .....	5
Analysis of the provided feedback .....	5
References.....	7

## Introduction

The purpose of this report is to present the feedback concerning all Pilot Actions carried out in each partner country. Each University has analyzed all the data and suggestions provided by participants (students and partner companies).

1 \* Age:

2 \* Gender:

3 \* Achieved Academic Degree:

4 \* Number of years at work

5 \* Country of Residence:

6 \* Please select your option:

This elearning module allowed me to understand new or useful concepts:

Disagree in full;	Partially disagree;	Neither agree nor disagree;	Partially agree;	Fully Agree.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7 \* Please select your option:

This elearning module equipped me with practical abilities useful in my professional life

Disagree in full;	Partially disagree;	Neither agree nor disagree;	Partially agree;	Fully Agree.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8 \* Please select your option:

I have found the used methodology in this e-learning module satisfactory:

Disagree in full;	Partially disagree;	Neither agree nor disagree;	Partially agree;	Fully Agree.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9 \* Please select your option:

This way of learning can be useful and I would strongly recommend it:

Disagree in full;	Partially disagree;	Neither agree nor disagree;	Partially agree;	Fully Agree.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10 \* Please select your option:

The provision of quizzes was engaging:

Disagree in full;	Partially disagree;	Neither agree nor disagree;	Partially agree;	Fully Agree.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11 \* How many hours did you spend for completing the course?

Figure 1.- First part of the survey from learners.

The general adopted methodology and the guidelines for conducting the reflective analysis, after the first implementation of the e-learning modules has been provided in the IE3 - E-learning modules Action plan (D4.4) [1].

## Context

As already presented in D4.4 [1], once the e-learning modules have been defined and implemented in the LMS platform [2], different targeted audience has been addressed (both people from the companies and students), where a questionnaire was agreed among the partners to assess their experience. The structure of the questionnaire is presented below (see Figures 1 and 2):

12 \* How many hours did you spend for completing the practical assignments (exercises)?

13 \* Please select your option:

The degree of feedback I have got was even better and more useful than my initial expectations:

Disagree in full;	Partially disagree;	Neither agree nor disagree;	Partially agree;	Fully Agree.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14 Suggestions for improvements:

Figure 2.- Remaining questions from learners.

The outcomes depended on the registered number of learners enrolled, where the industrial partners have all of them accomplished the assigned tasks. Regarding the academic learners, the participation is

Table 1.- Learners from partner universities (students) enrolled in other modules and providing feedback.

From\Enrolled	LIU	POZNAN	POLIBA+UNIBA	UPM	Total
LIU		0	0	0	0
POZNAN	16		15	10	41
POLIBA+UNIBA	25	15		23	63
UPM	32	15	20		67
<b>Total</b>	<b>73</b>	<b>30</b>	<b>35</b>	<b>33</b>	<b>171</b>

Where the Liu partner was unable to provide students because of the specific Swedish regulations. In all the other cases the expectations have been achieved.

## Analysis of the provided feedback

Each academic partner collected the provided answers from their learners and separated each of the categories, and then presentations were performed at the Madrid meeting. After the discussion and avoiding provide very different module shapes It was agreed to include a common set of recommendations for improvements. Therefore, the list of recommended improvements to be implemented were:

1. Asking the previous knowledge on the topic to explain to the learners what they are going to
1. Check the initial knowledge of the learners about the topics with general questions “Do you know ...”
2. Make a video to explain what we expect from the students in the module, focusing on learning outcomes.
3. Improve the “doing dimension” by asking the learners to solve some exercises
  - a. Using more complex case studies to reflect business conditions

- b. Using more interaction options
  - c. Making the practical assignments more practical
  - d. When possible/suitable: Using simulation or gamification in practical exercises
  - e. When possible/suitable: More automation in students assessment
  - f. Avoiding exercises that require the intervention of the trainers
4. Including subtitles to the videos (proposed solution: uploading the video on YouTube and creating/revising subtitles and then uploading them on Moodle)
  5. Recorded instructions for exercise
  6. Declaring the duration of the modules and the individual resources
  7. If possible including a list of relevant documents to download (books, articles, etc.)
  8. articles, etc.)
  9. Improving the quizzes, trying to avoid quizzes just aimed at memorizing sentences

Based on the previous agreed set of improvements all partners have revised their contents, and just as an example, few images showing the improvements have been collected in this report(see Figures 3-7).

## INTRODUCTION

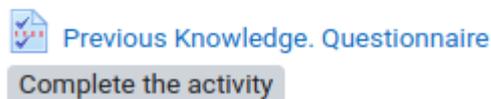


Figure 3.- Asking the previous knowledge on the topic to explain to the learners what they are going to learn through the module with general questions “Do you know ...”

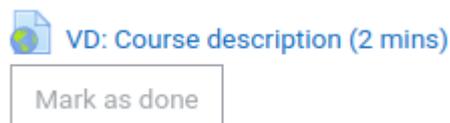


Figure 4.- Make a video to explain what we expect from the students in the module, focusing on learning outcomes

## ASSESSMENT AREA



Figure 5.- Improve the “doing dimension” by asking the learners to solve some exercises Using more complex case studies to reflect business conditions



Figure 6.- Including subtitles to the videos (proposed solution: uploading the video on YouTube and creating/revising subtitles and then uploading them on Moodle)

<p> RD: Project Tracking Software (5:00 min)</p> <p>Mark as done</p>	<p> RD: Benefits of EVMS (5:00 min)</p> <p>Mark as done</p>
<p> RD: Adding Value to EV Analysis (16 mins)</p> <p>Mark as done</p>	<p> RD: EDMS/ESMS (15:00 min)</p> <p>Mark as done</p>
<p> RD: Several Project Tracking Software Tools (5:00 min)</p> <p>Mark as done</p>	<p> RD: EDMS/ESMS (10:00 min)</p> <p>Mark as done</p>
<p> RD: Project Tracking Best Practices (5:00 min)</p> <p>Mark as done</p>	<p> VD: What is ESMS (5:54 min)</p> <p>Mark as done</p>

Figure 7.- Declaring the duration of the modules and the individual resources.

Based on the work carried out, and described in this report, it is possible to conclude that the described methodology undertaken, according to the project proposal, is fully operational and positive.

### References

- [1] IE3 partners, D4.4: E-learning modules evaluation IE3 project., 2022.
- [2] Moodle-Team, Moodle 3.11 release notes - MoodleDocs. docs.moodle.org. Retrieved 17 May 2021.