

# Assessing skills in digital learning and validation of competences

Alfredo Soeiro, University of Porto

Higher Education Innovations in the Age of Learning: Challenges of Digitalisation, Skills Development and Networking

15th MELLearn Lifelong Learning Conference

25Apr19, Dunaújváros

# Digital World

- Knowledge and skills are possible to acquire
- Verifying related competences is necessary
- Progression in a LLL path
- Enhance qualification
- Recognize professional development
- Proposal for assessment professional organizations and research

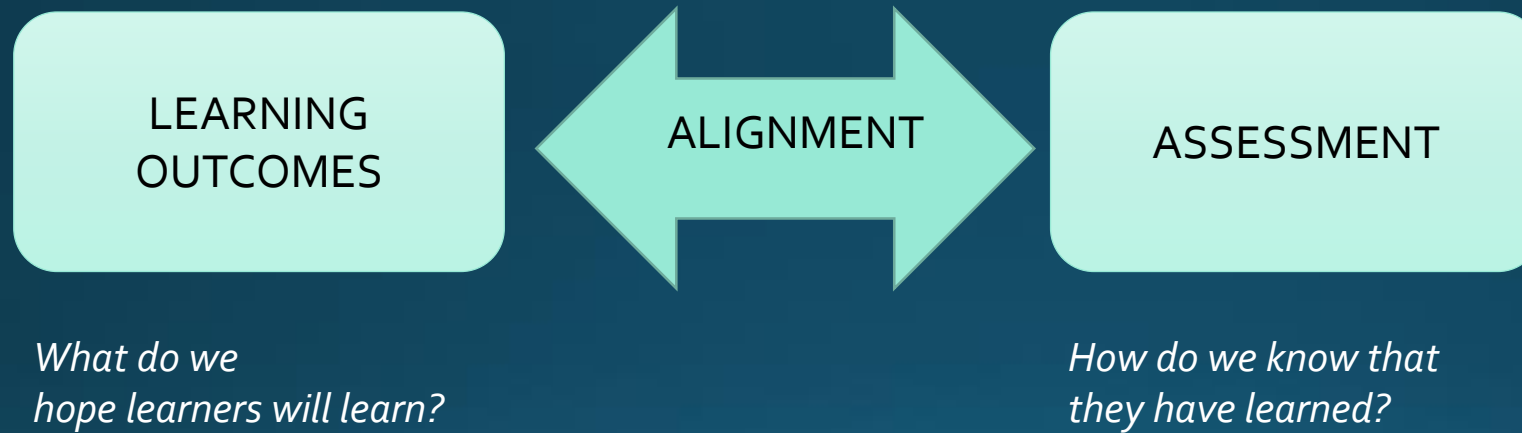
# Proposal – why?

- Work based learning – Provider, employer, individual, learning contract
- LLL and Elearning – EUCEN vs EDEN, Imperial College, Aalto, Stanford
- VET – Expert DGEMPL, Expert providers group
- Accreditation and validation – NFIF and competence assessment, badges
- SME – Thematic networks, observatory, Eportfolios

# Employers

- Little or No time for external training
- Needs are Just in time
- Diversity of training
- None or small funds

# *What should be assessed?*



# Why?...

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

THE FOCUS IS ON THE  
LEARNERS!



# 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*



# Assessment

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

*(Brown et al)*

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

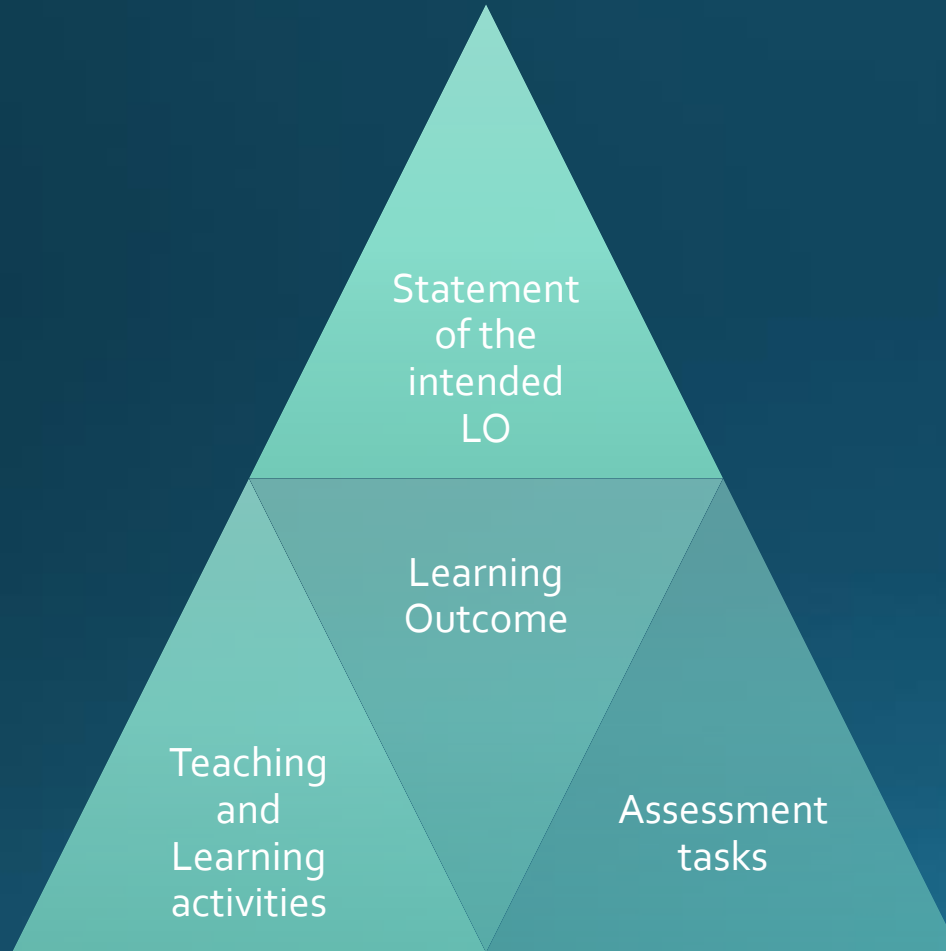
*(JISC)*



# Categories of assessment

- Multiple choice questions
- Short Answer Questions
- Problems
- Essays
- Practical work
- Reflective practice

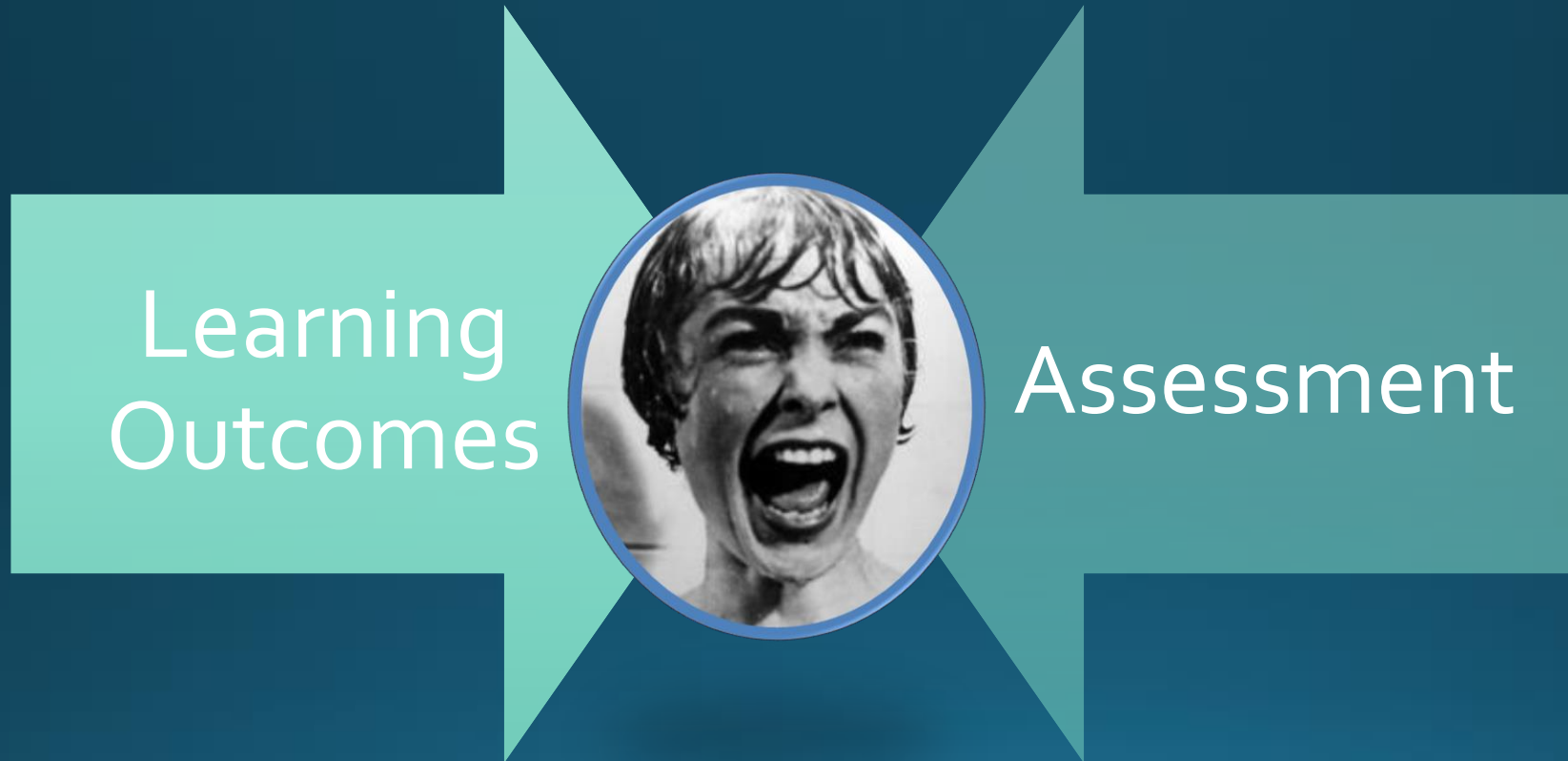
# Alignment



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

*(Anderson et al)*

# Simple problem...?



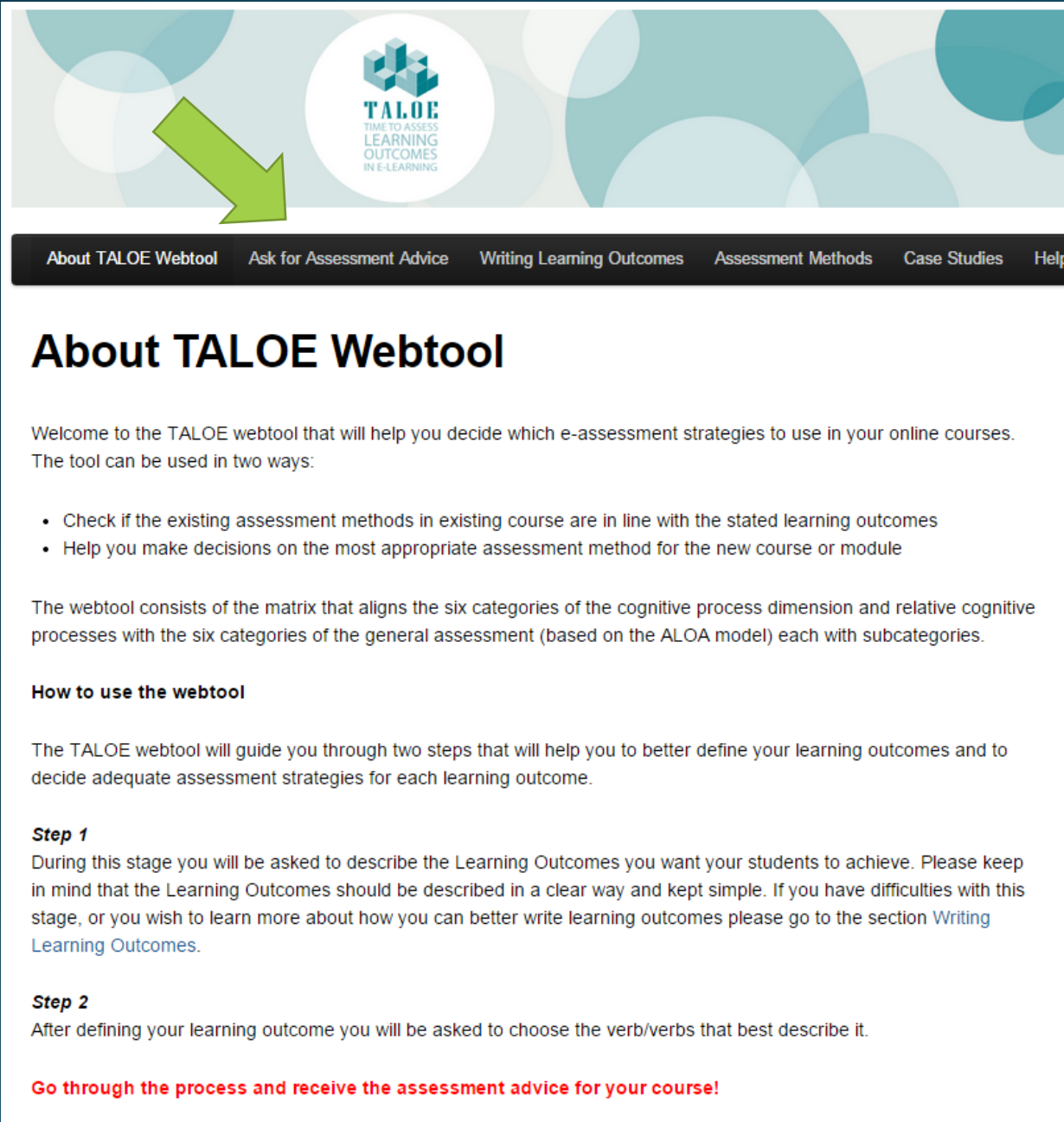
## Analysis of LOs with BLOOM (revised)

*The learner should be able to describe the main components of a personal computer.*

NOUN / KNOWLEDGE

VERB / COGNITIVE PROCESS

# Select the option “Ask for assessment Advice”



The screenshot shows the TALOE Webtool website. At the top, there is a header with the TALOE logo (a stylized 'T' made of cubes) and the text 'TALOE TIME TO ASSESS LEARNING OUTCOMES IN E-LEARNING'. Below the header is a navigation bar with the following links: 'About TALOE Webtool', 'Ask for Assessment Advice', 'Writing Learning Outcomes', 'Assessment Methods', 'Case Studies', and 'Help'. A green arrow points to the 'Ask for Assessment Advice' link. The main content area has the title 'About TALOE Webtool' and a welcome message. It lists two ways to use the tool: checking existing assessment methods and helping with decisions on new courses. It also describes the webtool's matrix and provides instructions on how to use it, including two steps: describing learning outcomes and choosing verbs.

**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!**



## 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

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

Check assessment methods

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[2nd TALOE Newsletter is now available](#)

[TALOE Assessment Platform >](#)  
[Ask for Assessment Advice](#)

TALOE - Time to Assess Learning Outcomes in  
E-learning

**Reference No:**

543097-LLP-1-2013-1-PT-KA3-KA3MP

**Duration:**

01.01.2014 - 31.12.2015


**Key Activity 3:** Multilateral projects



With the support of the  
Lifelong Learning programme  
of the European Union

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

The second step is selecting the category(ies) of cognitive process(es)



[About TALOE Webtool](#) [Ask for Assessment Advice](#) [Writing Learning Outcomes](#) [Assessment Methods](#) [Case Studies](#) [Help](#)

## Ask for Assessment Advice

**Step 1:** Choose the learning outcome you want your students to achieve. You can enter 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
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☐ 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  
☐ Inferring – Drawing a logical conclusion from presented information  
☐ Comparing – Detecting correspondences between two ideas, objects and the like  
☐ Explaining – Constructing a cause-and-effect model of a system

Check assessment methods

Select up to 3 cognitive processes that better describe your Learning Outcome/Competence



**TALOE**  
TIME TO ASSESS  
LEARNING  
OUTCOMES  
IN E-LEARNING

[About TALOE Webtool](#) [Ask for Assessment Advice](#) [Writing Learning Outcomes](#) [Assessment Methods](#) [Case Studies](#) [Help](#)

## Ask for Assessment Advice

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Check assessment methods



# The results page lists and describes the assessment methods that are suggested for your type of Learning Outcome

[About TALOE Webtool](#)[Ask for Assessment Advice](#)[Writing Learning Outcomes](#)[Assessment Methods](#)[Case Studies](#)[Help](#)

## 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

[About TALOE Webtool](#) [Ask for Assessment Advice](#) [Writing Learning Outcomes](#) [Assessment Methods](#) [Case Studies](#) [Help](#)

## Essays

[back](#)

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 a 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**

The diagram consists of two green arrows pointing left. The top arrow, labeled 'Specific assessment methods', points from the list of essay types to the 'E-assessment implementation of essays' section. The bottom arrow, labeled 'E-assessment strategies', points from the 'E-assessment implementation of essays' section to the 'Discussion Forum' section.

## Examples of Application for Learning Outcome/Competence Verification

- Started with project VIRQUAL – Virtual Qualifications  
<http://virqual.up.pt>
- Continued with PhD Thesis of Rita Falcao – UPorto and UTexas joint doctoral program: ALOA Model
- Used by the ISHCCO Qualification Framework of Construction Safety Coordinators [www.ishcco.org](http://www.ishcco.org)
- Used in the TUNING Assessment Framework of Subject Area Group in Civil Engineering of CALOHEE (Comparing Achievements of Learning Outcomes in Higher Education in Europe – [www.calohee.eu](http://www.calohee.eu))

## Example from CALOHEE

Dimension 6: Decision making			
	Knowledge	Skills	Wider Competences (Responsibility and Autonomy)
Level descriptor	Demonstrate awareness of the key aspects of professional, ethical and social responsibilities linked to management of civil engineering activities, decision making and judgment formulation.	Manage work contexts in civil engineering subject area, take decisions and formulate judgments.	Identify appropriate and relevant approaches to manage work contexts in civil engineering subject area and reflect on professional, ethical and social responsibilities in taking decisions and formulating judgments.
Assessment approaches	Essays Problem Solving Practical Work	Essays Problem Solving Practical Work	Problem Solving Practical Work Reflective Practice Assignments

# Proposal – 1

## ✓ Profiling – Individual

- Needs analysis – Past, current, future
- Recording – Valorie, eportfolio
- Qualification Frameworks – EQF, CALOHEE, EUSAFE
- Personal Development Plan – Engineering, LLL

# Proposal – 2

## ✓ Tools and methods

- Database – case studies and modules
- MOOCs – search engine or guidance
- Thematic networks – platforms for sectors
- Cluster – networks

# Proposal - 3

## ✓ Added value

- Learning – when and where necessary
- Contract – commitment
- Recording – eportfolio and Europass
- Assessment – self evaluation and peer review

# Proposal –4

## ✓ Potential benefits

- External – professional and academic
- Validation – recognition and self development
- Employer qualification – productivity and image
- Transparency – clear and available



# THANK YOU!

[avsoeiro@fe.up.pt](mailto:avsoeiro@fe.up.pt)