BRAIN@WORK

INFORMATION COMPETENCE AS BOOSTER FOR PROSPECTIVE SCIENTISTS

Co-funded by the Erasmus+ Programme of the European Union

FOCUS ON PROBLEM-BASED LEARNING (PBL)

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WHAT IS PROBLEM-BASED LEARNING ?

Definition : *"learning strategy that is directed at authentic problems experienced daily which invites students to think critically and skills in solving a problem" (Fatirul, Walujo, 2021)*

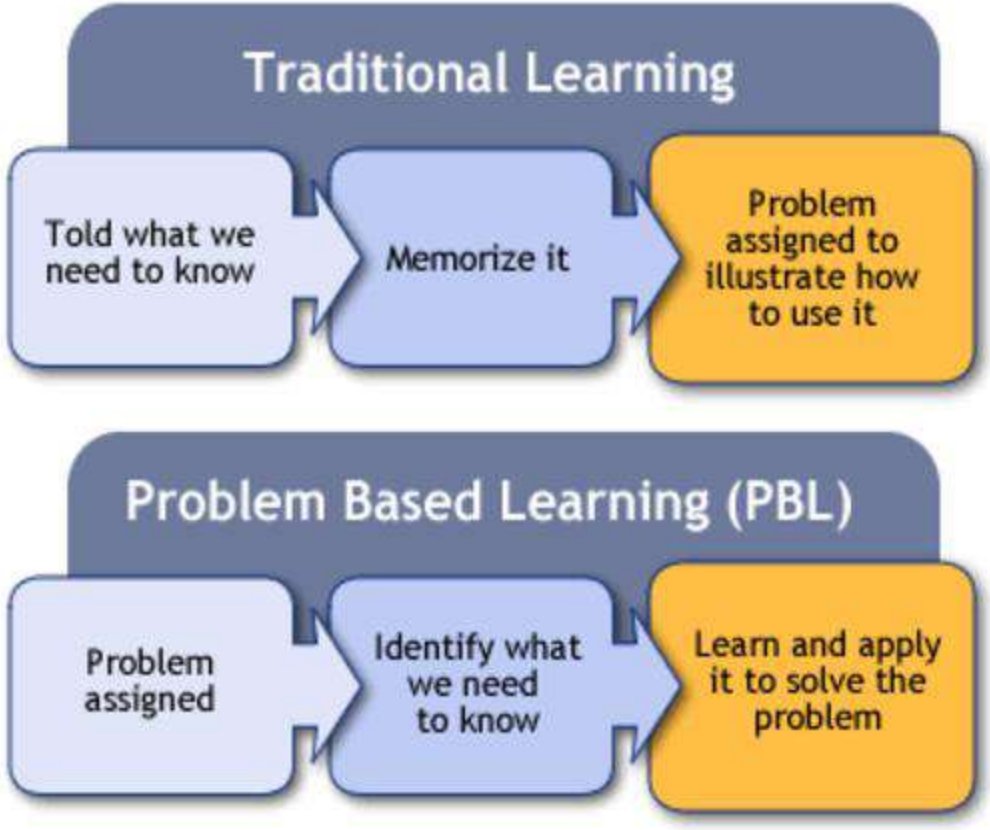
History

- First traces in McMaster University
- Used for medical and clinical studies
- A lot used in Anglo-Saxon's institutions

WHAT IS PROBLEM-BASED LEARNING ?

Principles

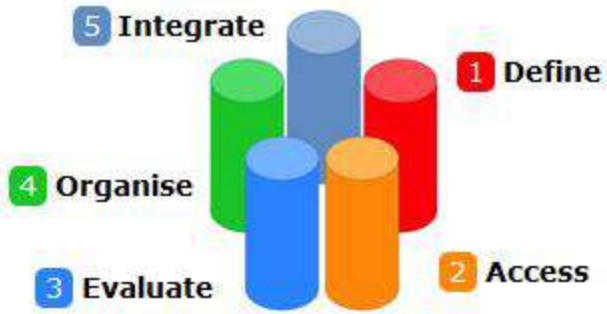
- Problem centered
- Organisation in a group
- Autonomy
- Incentive to search further
- “Learning by doing” approach



IMPLEMENTATION TO THE BRAIN@WORK PROJECT

Links to Information literacy

- Identify the information needed to solve the problem (define)
- Find the information to solve the problem (access)
- Verify the relevance and quality of the source of information (evaluate)
- Synthesize the information needed for the problem (organise)
- Applies the information to solve the problem (integrate)



https://infolit.be/5PMIS

IMPLEMENTATION TO THE BRAIN@WORK PROJECT

Construction of a Module

- Submit a Problem to student groups
- Give them tools and direction to search
- Give them time to coordinate as a group
- Evaluate the completion of their learning outcomes

DEMONSTRATION WITH THE LU1 MODULE

Module LU1 construction

- For the first learning unit, the first pillar is involved

Presentation

Construction of the framework

1. Define

1.1. Define scientific information literacy

1.2. Explain the role of scientific literature

1.3. Define the information landscape: sources of information

1.4. Define the information landscape: the publishing models

1.5. Define the informational landscape: tools

1.4. Define the information landscape: the publishing models

1 _ _ describe the role of publishers and the costs of scientific publishing

1 _ _ explain the principles of open access

_ 2 _ question the costs of scientific publishing (Article Processing Charges...)

_ 2 _ explain the excesses of scientific publishing (hybrid publishers, predatory publishers, etc)

_ _ 3 describe archiving and copyright policies

_ _ 3 Assess the relevance of new modes of scientific communication (researchers' blogs, research notebooks, preprint distribution, etc.)

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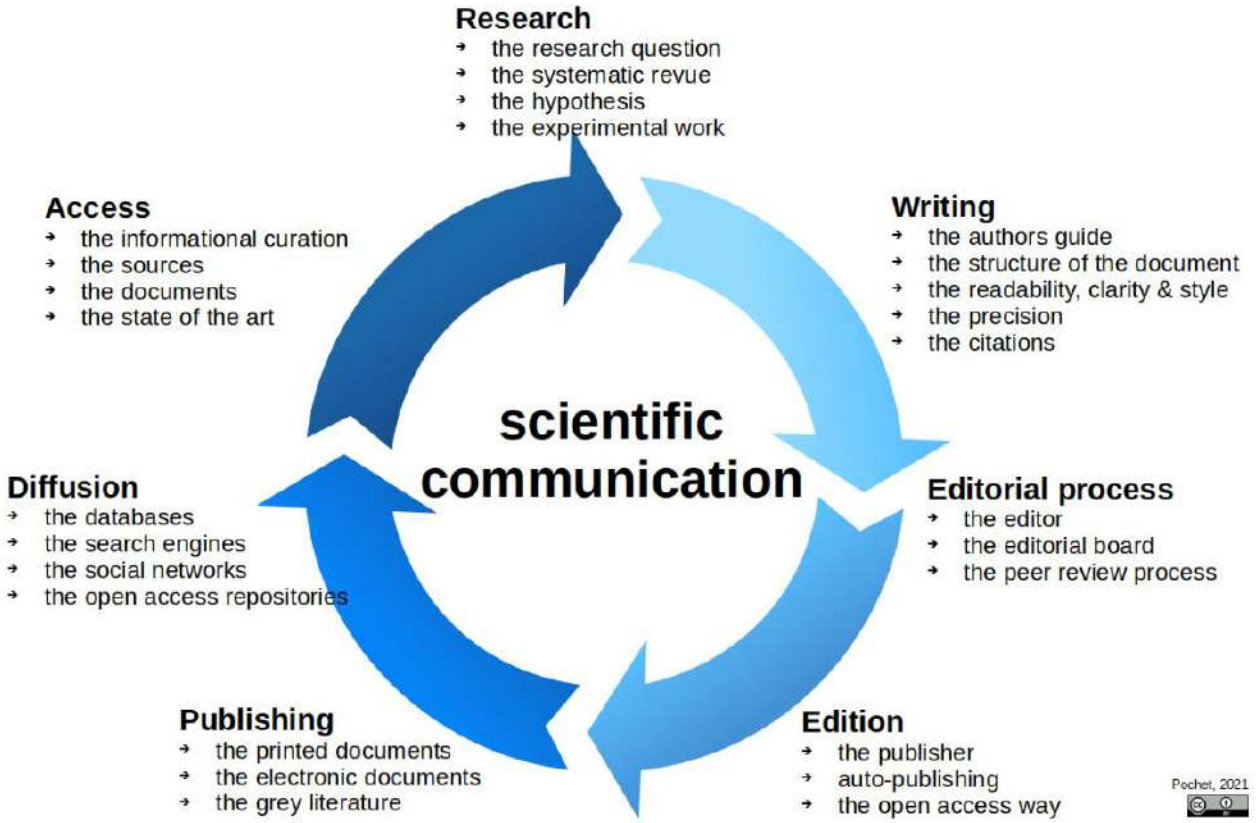
DEMONSTRATION WITH THE LU1 MODULE

Module LU1 construction

- Process of scientific communication and publication



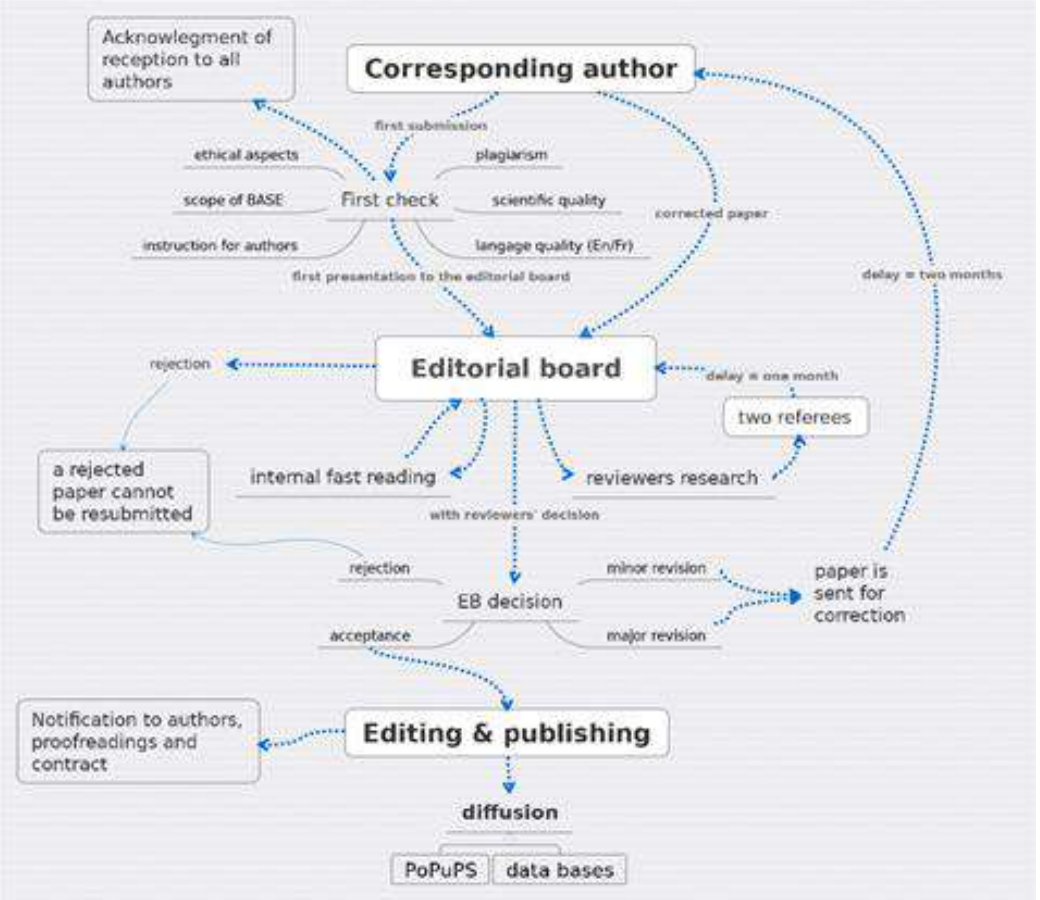
Pochet B., 2021

DEMONSTRATION WITH THE LU1 MODULE

Module LU1 construction

- Emphasis on the full understanding of the Editorial Process
  - How to submit an article
  - Identify what is important for this journal
  - Understand the specific process of a journal (time frames, people involved, validation process…)

- Tools to evaluate the quality of the journal (Editorial board, metrics etc.)



Pochet B., 2021

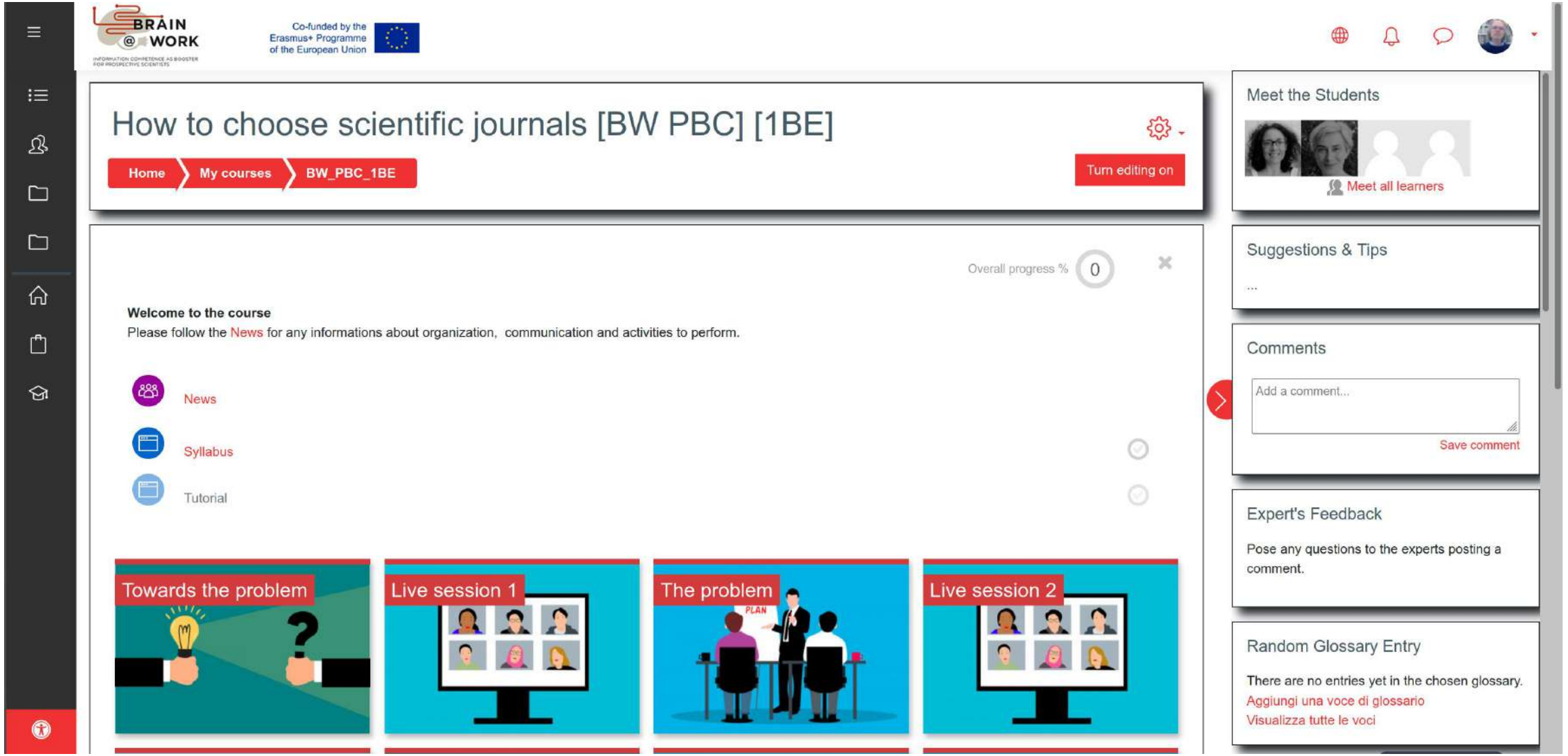
DEMONSTRATION WITH THE LU1 MODULE

Module LU1 construction

- Wanted outcomes
  - find scientific journals by topic or discipline
  - evaluate the quality of scientific journal
  - identify the news issues in research assessment practices
  - acquire effective strategies
  - acquire awareness about habits and behavior in this field

- Awareness to stakes of scientific publication for the author
  - the visibility of the scientific production (databases, territories…)
  - the final quality of the document
  - the prestige (but this is a mistake)

DEMONSTRATION WITH THE LU1 MODULE



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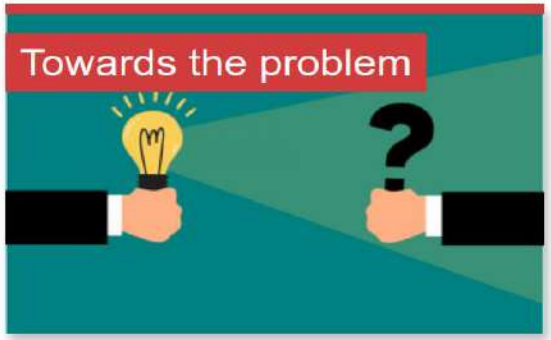

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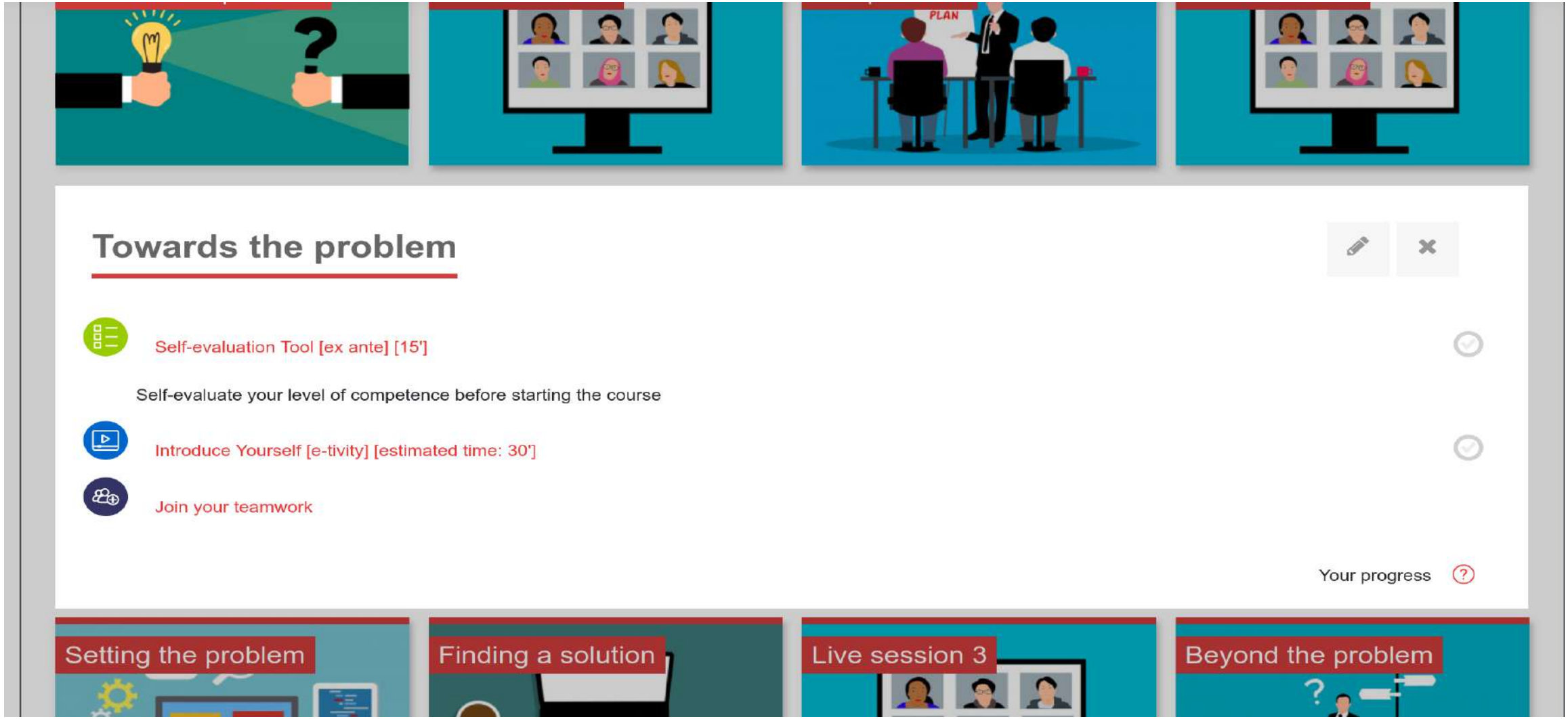

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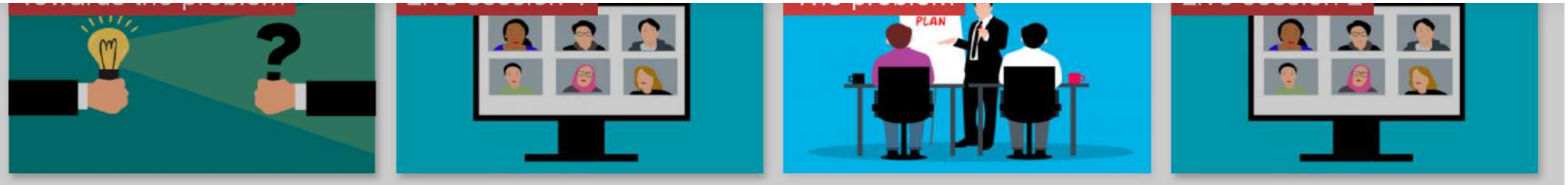


The problem

Watch carefully the introductory video by exploring interactive tips and resources.

Points for reflection

Think about the following:

1. What defines the value of scientific journal?
2. How can you evaluate a scientific journal?
3. Can publication aims, research assessment, open science influence the judgment? How?
4. Which other factors can or should be taken into account?

H5P The value matters [interactive video] [estimated time: 30']

The value matters [text of the problem]

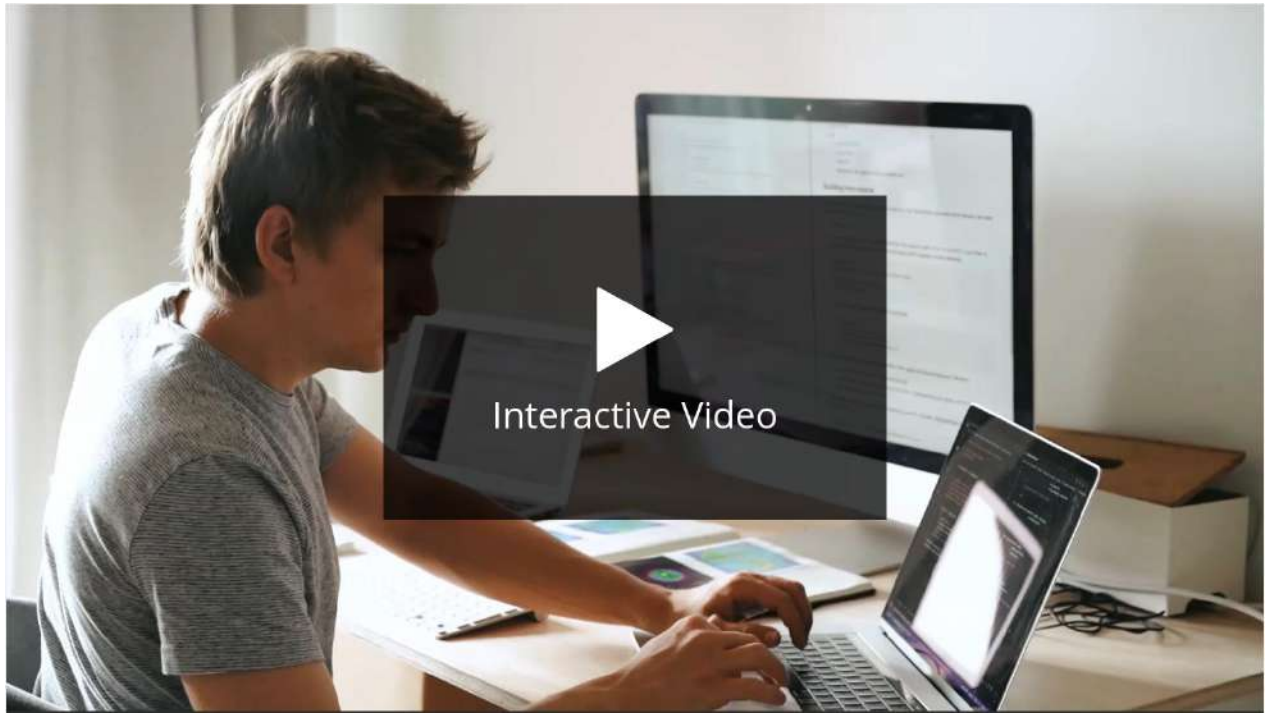
Activities

1. After reflecting, discuss freely with each other, following these simple rules:

DEMONSTRATION WITH THE LU1 MODULE

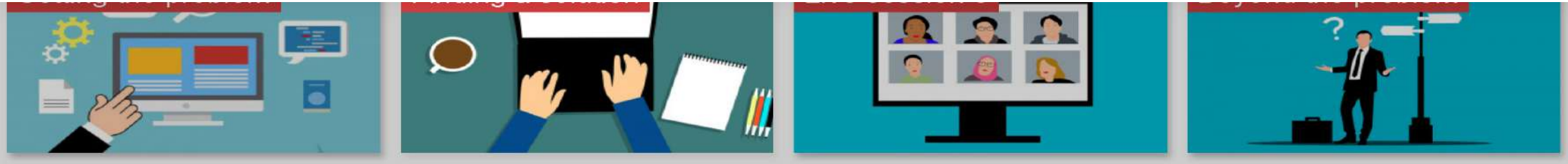
Walktrought of the module

- Case study presenting the problem with a video
  - “Paul is a young researcher who works as research fellow at public Research Center in a European Country…”



- Tools at their disposal revealed by the presentation
  - journal catalogs
  - the titles of “usual” journals in a research field
  - the titles of journals that appear after a documentary search
  - Examples : *DOAJ, Electronic Journals Library, Journal Finder…*

DEMONSTRATION WITH THE LU1 MODULE



Finding a solution

Observe the subway map below

The map displays a potential framework/approach for evaluating the quality of digital content on the web.

Each line represents an area of quality we want to evaluate, the stops are the criteria we can use to evaluate that aspect described by a list of potential values. Joints can represent indicators common to multiple areas.

The order of the stops can be random or structured based on what you consider relevant: objective to subjective, generalist to disciplinary, etc.

H5P Evaluate digital content [subway map]

Build your map

Based on the work done by your group, represent with a similar scheme the evaluation process adopted to select the list of journals.

Each map should at least distinguish between areas of evaluation and criteria adopted to assess each area.

Each map can be simply drawn or designed with a digital tool and then embedded in the collaborative journal.

DEMONSTRATION WITH THE LU1 MODULE

Resources

Knowledge Base [estimated time: 2H]

Repository in progess where learners and teachers can share any useful resource about all the issues concerning the problem and the related knowledge.

Collaborative Glossary [estimated time: 2H]

Glossary in progress where every participant can add entries about unknown concepts and, later on, complete related definition/description.

Building Knowledge [collaborative Journal] [estimated time: 12H]

Ebook where every team will describe the whole process, from scratch to the solution and beyond.

DEMONSTRATION WITH THE LU1 MODULE

Walktrought of the module

- Each group have a dateline (+- 6 weeks) to solve the problem
  - Each group have access to shared tools (Knowledge base, collaborative glossary)
  - Three trainers are available to evaluate progression in live sessions or give help or advise with a dedicated messaging tool

- They realise a strategic map dedicated to visualise the publication process and evaluate the proper journals to approach or to avoid (predatory journals)
  - They go next through the individual evaluation process to assess the control of the knowledge
  - This evaluation is compared with their self estimation of skills regarding the subject of the module

PRESENTATION OF OTHER MODULES

LU2 – Stay updated in your topic

- Analysis of a case study
  - Development of a query related to the submitted subject
  - Exploration and exploitation of watching and automatized tools
    - Mail alerts
    - RSS feeds
    - Social networks
  - Evaluation of the efficiency of the used tools

PRESENTATION OF OTHER MODULES

LU3 – Building and development of Researcher's Digital Identity (DigID)

- Checking the knowledge about Digital Identity based on presented case study
- Brainstorm about own student DigID and strategies available to improve it
- Analysis of the strategies through the case study
  - Series of assignments to schematize the decision-making process

PRESENTATION OF OTHER MODULES

LU4 – Agile Management in Scientific Writing

- Description of the Agile principles and the scrum framework
- Case study : writing a paper on a given subject
- Presentation and creation of a product backlog
- Creation of a release plan
- Plan a first sprint
  - Daily Scrum planning
  - Sprint review and retrospective
- Repeat the sprint cycle until final presentation

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Thank you