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## **Brain@Work - Information competence as booster for prospective scientists**

Project number 2019-1-IT02-KA203-062829

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### **Training of Trainers Educational strategies in STEM Information Literacy**

#### **Objective**

The courses will train teachers or librarians to become coaches on the potentialities of Information Literacy for scientific studies.

#### **Duration**

8 hours in total, divided in 2 days.

### **Training programme**

Day 1 (February 22<sup>nd</sup>, 2022, 3-7PM)

#### ***Module 1: Problem based Learning (50 min.)***

Trainer: Mario Rotta (Smart Skills Center, Italy)

Problem-based Learning (PBL) is a curriculum model that emphasizes the effective use of task-based problems to engage students in active and multidisciplinary learning. Through problem-based learning, students learn how to solve problems that are ill-structured, open-ended or ambiguous. Problem-based learning engages students in intriguing, real and relevant intellectual inquiry and allows them to learn from life situations (Barell, 2007).

The module will cover training methodologies and tools that can support trainers in the process of designing, implementing, evaluating, and communicating educational activities and teaching materials in support of this activity, technologies to support educational actions and training strategies.

This module will also cover the aspects of problem-based learning, their benefits, their disadvantages, some examples (Hunschool, 2022), best practices, and potential barriers and how to overcome them.

Regarding best practices the following items will be discussed: to focus on very real, local problems, in this way, students will see the fruits of their labour and develop a sense of accomplishment; to set a reasonable

scope for the activity by considering students experience (gather the students to discuss project goals, deadlines and materials, to brainstorm some action steps for the project), to make sure the assignment has no one right answer; to consider how students will present the solution of the problem (e.g. a multimedia presentation).

Regarding barriers students sometimes run into problems such as the lack of community support and lack of resources.

### ***Module 2: The process of the scientific publishing (1,5h. including a middle session break)***

Trainers: Bernard Pochet (University of Liège, Belgium), Rui Sousa and Dinis Carvalho (University of Minho, Portugal)

The module will go through the different processes included in the available Brain@Work project learning units:

- Selecting the right journal.
  - Find scientific journals by topic or discipline
  - Evaluate the quality of scientific journals
  - Acknowledge the news issues in research assessment practices
  - Acquire effective strategies
  - Acquire awareness about habits and behaviour in this field
- Dissemination of scientific work
- Scrum methodology
- Data publishing methodology

### ***Module 3: How to develop new Learning Units (50 min.)***

Trainer: Mario Rotta (Smart Skills Center, Italy)

- Selecting the right topic
- Writing appropriately the general and specific objectives following the Bloom's Taxonomy Pyramid
- Developing the Dossier
- Fundamental DOs and DON'Ts to teach Information Literacy in digital environment
- Useful links and bibliography

### ***Module 4: Assessment in the PBL approach (30 min.)***

Trainer: Bernard Pochet (University of Liège, Belgium)

Assessment of acquired competencies: templates and practical exercises examples.

After module 4, the participants will discuss and select the Learning Units they will develop as a practice case during the second day. Group organization (10 groups x 6 participants), topics distribution.

## **Day 2 (March 8<sup>th</sup>, 2022, 3-7PM)**

### **Practical sessions**

Facilitated by the Brain@Work Team

Practical sessions where participants will develop the previously selected Learning Units.

Methodology:

- Summary of the PBL method (15 min.)

- Tutorised group-based development:
  - Course contents (50 min.)
  - Assessment tool (50 min.)
- Presentation of results and feedback (10 min./group x 10 groups, short break between every 2 or 3 presentations)
- How to repurpose/redirect the course contents for an autonomous learning course
- Closing remarks.

## **References**

Barell, J. F. (2006). *Problem-based learning: An inquiry approach*. Corwin Press.

HunSchool (2022) <https://www.hunschool.org/resources/problem-based-learning>

Jones, Ronald W. "Problem-based learning: description, advantages, disadvantages, scenarios and facilitation." *Anaesthesia and intensive care* 34.4 (2006): 485-488.

Hung, Woei. "Theory to reality: A few issues in implementing problem-based learning." *Educational Technology Research and Development* 59.4 (2011): 529-552.