Teachers, Trainers and Headmasters Training towards Problem Based-Learning: Contributes of the SCENE Project

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1 Background

- The constructivist theory challenged the way we understand knowledge and therefore education and teaching practices [1].

- Problem-Based Learning, a constructivist-based methodology, has risen from successful experiences in chemistry and medicine courses [2] [3].

- Over the past decades much research was done in other university courses but also in educational levels [3] [4] [5] [6] [7].

- Not minimizing the "hard skills", PBL mobilizes "soft skills" such as collaboration, problem solving, independent learning, planning and scheduling [8] [9], the so-called "21st century skills" [10] [11] [12] [13].

1 Background

- The optimal implementation of PBL involves [14]:
    - the integration between theory and practice,
    - the definition of good problems and help in structuring projects,
    - the implementation of continuous and systematic evaluation of students' progress,
    - display appropriate bibliographic support and adequate structure of the classroom,
    - promoting teamwork and appropriate supervision by the teacher.

- Schools and universities should cooperate to prepare teachers to use PBL consistently and successfully.
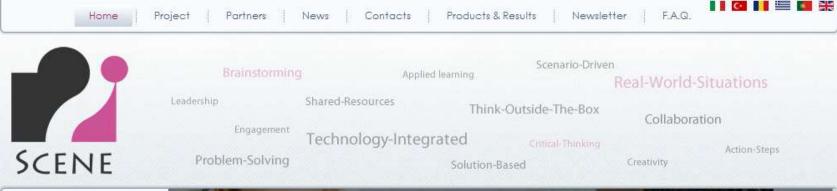
2 The SCENE Project

The SCENE project - "Professional Development for an Effective PBL approach: a practical experience through ICT-enabled Learning Solutions" - includes core activities, such as [15]:

1. design a PBL working environment;

2. develop and evaluate a teachers/trainers/headmasters training course; and

3. develop a Virtual Facilitator and PBL repository that allow the sustainability of the project.

"SCENE PBL working environment" integrate: the e-learning platform, the virtual facilitator and the PBL repository. It might be consulted online at www.sceneproject.eu (figure 1).

The SCENE Project

- **The course** was developed, in two pathways for a total of 64 hours.

Teachers and trainers	Headmasters and vocational school managers
Self-reflection and introduction to PBL	Self-reflection and introduction to PBL
Designing a Problem Scenario	Designing a Problem Scenario
Assessing of a Problem Scenario	Assessing a Problem Scenario
Managing a Problem Scenario	Managing a Problem Scenario
	Towards a "Constructivist School"

2 The SCENE Project

- **Virtual Facilitator** was developed with the "Intelligent Agent Technology" to support users with the selection and writing of new PBL scenarios but also promote guidance to assess each PBL sessions to be delivered to students.

- **PBL Repository** is a Learning Management Systems (LMS) where SCENE participants can upload their PBL scenarios and download others.

3 Contributes of SCENE

- The development of an evidence-based e-course.

- 147 individuals completed their training (from 179).

- The courses were positively evaluated in what concerns to contents, activities and feedback from tutors.

- Is consensual the relevance of the course for improving their pedagogical practices.

3 Contributes of SCENE

- The materials and PBL repository allowed the comprehension of main PBL features supporting the development of their own PBL projects.

- Participants had positive feedback either on the opinion of their students, either on the outcomes of learning acquired.

- It is suggested a review of forum interaction: participants are not always available to be online at the same time.

3 Contributes of SCENE

- Progressive consensus about the need to promote new skills in youth, designated as "21st century skills" [10] [11] [12] [13], however, imply significative changes at a political, institutional and continuous training level.

- The emergence of ICTs and new methodologies might allow teachers to direct their effort for new roles, involving students in their learning, as an active element of this process, and focus on the promotion of new skills as collaboration, problem solving, self-directed learning, critical thinking, creativity or others.

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Thank you!

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