# REPORT ON REALIZATION OF THE TRAINING

## *BOOSTING TECHNOLOGIES IN HIGHER EDUCATION I*

The realization of this course was related activity 3.3 (**TRAINING OF TEACHING STAFF FOR USING NEW EDUCATIONAL TECHNOLOGIES)**.

**General data:** In order to increase capacities of teaching staff in natural and mathematical sciences for knowing, using, and integrating new educational technologies into their teaching activity, the team from the University of Oviedo designed this course taught by experts in different fields related to this topic.

**The course material** was provided to the participants in terms of different presentations, documents and applications.

**The objectives of the course:** University and college teachers of natural and mathematical sciences are presented different tools for boosting active learning in Higher Education, different motivating resources and technology-based methodologies for supervising project-based learning.

**The realization of the course:**

**Mode of delivery**: The course was divided into two parts. It was delivered as an online course, using Microsoft Teams as the platform.

**Dates:** The duration of the full course was of 12,5 hours, including the two sessions of online lessons and the supervised individual work by participants. It was on December 15th-17th 2021.

**Agenda:**

**Module 1A. Attractive approach: active participation and creative presentations**

**Date: Wednesday 15th December 2021, from 16:00 to 17:00h ONLINE**

The inclusion of technology in the educational context offers new opportunities far removed from traditional classes. In the current context, it is essential that the starting point be dynamic, attractive and motivating, so that the active participation of the students and the support in which the information is presented become essential starting points to transmit this new look towards the way of acquiring knowledge.

**Objectives.** The aim of this module is to identify new strategies and technological resources to promote active participation in the classroom and create creative presentations.

**Contents.** · Perusall · Vevox · Mentimeter · ClassMaker · Turning · Canva · Pexels · FreePick · Mindomo · Coggle · Draw.10.

**Methodology.** This module will be developed through an online session on Teams. After the session, the participants will ask their questions and explain how they would introduce one of the identified resources in one of their class sessions.

### Module 1B. Motivating resources: gamification, augmented reality, and robotics

**Date: Wednesday 15th December 2021, from 17:30 to 19:00h ONLINE**

Motivation in the classroom is essential to achieve the involvement of students. For this, it is essential to use techniques and resources that promote said motivation. For this, gamification -use of the mechanics and dynamics of the game at the service of learning-, as well as motivating resources such as augmented reality or robotics, can offer great advantages to promote extrinsic motivation in learning and, with it, the acquisition of content and key skills from enjoyment and entertainment.

**Objectives.** The objective of this module is to learn to create gamified environments and activities as well as to identify augmented reality applications and robotics utilities to enrich the educational process.

**Contents.** · Genially · Classroomscreen · Kahoot · Socrative · Chess · ClassDojo · Aurasma · MergueCube · Geolocation · QR · Scratch.

**Methodology.** This module will be developed through an online session on Teams. After the session, the participants will ask their questions and explain how they would introduce one of the identified resources in one of their class sessions.

### Module 1 guided individual practice: 16th December 2021, from 9 to 14h. ONLINE

### Module 2. Project-based learning tracking from a Technological perspective

**Date: Friday 17th December 2021, from 10:00 to 12:00. ONLINE**

Project-based learning is a standard methodology in scientific and technological subjects. But, assessment of projects development and partial and global deliveries is a crucial issue in this context. Thus, this talk will analyze a case study of project-based learning on programming projects using GitHub. The case study will comprise the following steps: prepare the rubric defining the partial deliveries, the proposal of identification of the students, projects and partial deliveries, and analysis of the information obtained. Finally, the way to adapt this kind of tracking methodology will be analyzed for other projects.

**Objectives.** This module aims to study how to track the development of student projects in real-time and analyze the results of the obtained data.

**Contents.** · Project-based learning, typology of projects, kind of contents, code projects tracking,

**Methodology.** This module will be developed through an online session on Teams. After the session, participants will be required to design a straightforward task adapted to their subjects.

### Module 2 guided individual practice: 17th December 2021, from 12 to 15h. ONLINE

**Course participants:** The total number of course participants who attended the course was 56 (40 women and 16 men) from all Serbian and Albanian partner universities.

**Teachers**: The course was taught by 2 experts in that field: Nerea López-Bouzas and Enrique de la Cal, both from the University of Oviedo.

**Assessment:** During the guided individual practice the participants were in contact with the teacher and they developed different tasks related to the software and resources that had been introduced in the lessons.

**Nerea López Bouzas**

Nerea López-Bouzas is a Ph.D. student in Education and Psychology and has a tenure track grant. She is a Teacher of Early Childhood Education and has a Master's Degree in Research and Innovation in Early Childhood and Primary Education and collaborates with the Department of Educational Sciences and is a member of the research group TECN@: Technology and Learning at the University of Oviedo. Her lines of research focused on the integration of technological resources in the teaching-learning process, digital applications, augmented reality, gamification, analysis of audiovisual narratives, etc.

**Enrique A. de la Cal Marín**

Enrique A. de la Cal Marín received the Computer Science M.Sc. in 1995 (University of Oviedo). PhD degree in Computer Science from Oviedo in 2003 (University of Oviedo). Currently, he is a senior n Computer Science and Artificial Intelligence at the University of Oviedo. Previously, during 1995 was contracted as a pre-doctoral researcher in CSIC “Daza Valdes Research Institute”. And, in 1996, he started his career at the University of Oviedo contracted like a teaching fellow. His research interests are in two main groups of topics: i) Ambient Intelligence: Human Activity Recognition: Intelligent Sensors, Automatic Diseases Identification and ii) Applied Artificial Intelligence: Intelligent Data Analysis, Intelligent Analysis of Time Series, Fuzzy-Rule-Based Systems, Soft Computing Industrial Problem Modelling, Genetic Algorithms, and Genetic Programming. Also, he is co-author of 20+ papers on impact factor journals and more than 60 contributions to international conferences.He has organized several national and international conferences and special sessions. Besides, he has been the guest editor in several special issues for JCR indexed journals. Finally, he is a reviewer for several indexed journals (Sensors MDPI, Sensors Hindawi, Applied Intelligence - Springer).