Contribution ID: **70** Type: **Workshop**

THE "OPEN DISCOVERY OF STEM LABORATORIES" WORKSHOP: AN INQUIRY-DRIVEN MOOC APPROACH IN TEACHING PHYSICS

Tuesday, 2 October 2018 11:30 (1h 30m)

The "Open Discovery of STEM Laboratories" (ODL) has been an Erasmus+KA2 project aimed to implement teacher collaboration in creating and using micro-MOOCs (very short version of Massive Open Online Courses, MOOCs) for the insertion of STEM remote/virtual laboratories in the everyday teaching practices (http://opendiscoverylabs.eu). In order to support educators on creating innovative STEM school curricula by employing new technological teaching/learning tools, the ODL consortium offered to the teachers the opportunity of acquiring both technological and pedagogical skills for assembling separate educational materials within coherent learning paths. The consortium defined a methodology for the micro-MOOC design by adopting the well-known 5E model of instruction within an inquiry-based approach of science education. The most innovative aspects of the project include the use of online remote and/or virtual laboratories, the development and re-use of open education resources (OERs), the sharing of teaching/learning good practices. From November 2015 to April 2018, the project educators created more than 100 multidisciplinary micro-MOOCs and, during the multiplier events, they trained about 500 European teachers to design their own micro-MOOCs and implement them in their classrooms.

Starting from the guiding idea of sharing expertize, two educators from the ODL project team will introduce the participants attending this workshop to the main pedagogical aspects of the ODL project and will engage them into a practical BYOD-based working session. The ODL team will briefly report the outcomes from the pilot studies on the classroom experimentation of those micro-MOOCs focused on Physics topics. The feedback from both teachers and students highlighted that the use of micro-MOOCs enriches the lessons and raises student interest in the subject, encouraging and motivating these latter to learn. The students appreciated very much the exploration phase by the use of online virtual/remote laboratories. Globally, they enjoyed very much the micro-MOOC-based class, wishing to attend similar lessons in the future. The most part of the workshop will be devoted to a fruitful interaction with the audience, supporting participants working in small groups aimed at designing and implementing their own inquiry-based micro-MOOC. At the workshop, the participants will have the chance to make them familiar with the edX-based ODL platform and to convert their scenarios into educational resources. The method on how to incorporate their micro-MOOCs into STEM curricula will be also addressed. At the end of the workshop, all groups will present their micro-MOOCs and an overall discussion will support the sharing of participant experiences.

Apply to be
 considered for a student
   award (Yes / No)?

No

Level for award
 (Hons, MSc,
   PhD, N/A)?

N/A

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Session Classification: Parallel Session 1

Track Classification: Track F - ICT and Multimedia Revolution in Physics Education