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TEACHER PROFESSIONAL DEVELOPMENT IN THE CONTEXT OF THE "OPEN DISCOVERY OF STEM LABORATORIES" PROJECT

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The "Open Discovery of STEM Laboratories" (ODL) project, funded by the European Erasmus+ KA2 program (Cooperation for Innovation and the Exchange of Good Practices - Strategic Partnerships for school education) for 30 months, starting from November 2015, was aimed at introducing the use of MOOCs in school curricula. In particular, it fostered teacher collaboration in creating and using microMOOCs (very short version of MOOCs with an overall educational activity of about 30 up to 45 min in the classroom) for the inclusion of STEM (Science, Technology, Engineering and Mathematics) online remote/virtual laboratories in the everyday teaching practices (http://opendiscoverylabs.eu). The project focused on teachers, educators and curriculum designers with the aim to strengthen their profile by supporting them to deliver high quality teaching practices and to adopt new methods and tools. Thanks to the project, in service and pre-service teachers had the opportunity to extend their knowledge about the inquiry-based science teaching approach, improve both digital skills and pedagogical competences, experience international collaborative work, explore attractive open education resources helpful to design creative lessons on STEM topics. During the project, the ODL team educators created more than 100 multidisciplinary microMOOCs and organized several multiplier events, national meetings and an international teacher summer school, where they trained about 500 European teachers to design their own microMOOCs and implement them in their classes. In particular, the ODL partners organized two rounds of Multiplier Events in each country: "MOOC in the school sector" and "MicroMOOC in your class", whose activities were aimed at making teachers familiar with the microMOOC scenarios and the edX-based ODL platform. During the workshops, the microMOOCs were presented as good examples of resources to be used in teaching practice. Teachers had the opportunity to learn how to convert their scenarios into educational resources and received useful suggestions on how to incorporate their microMOOCs into school curricula. The ODL training stimulated teachers to: (1) explore, collect and organize new open educational resources on Physics remote and virtual laboratories; (2) build microMOOCs on interdisciplinary STEM topics; (3) manage inquiry-based lesson plans, designing highly engaging student-centred learning activities, as laboratory and practical work.

The relationship between our training intervention and the teacher affective development and motivation to adopt new methods and tools has been quantified by means of a questionnaire suitably designed to assess the experience acquired by the participants in relation to a specific activity. The questionnaire was administered to the teachers at the end of the training activity and the collected answers provided us a general overview of the teacher satisfaction on a five-point Likert scale. At the ICPE-SAIP-WITS Conference, we will show and discuss the results from the ODL teacher training in Italy, showing the valuable feedback collected by teachers on the impact of the ODL pedagogical approach on Physics education at secondary school, highlighting strengths and possible weaknesses of the proposed methodology. The outcomes from the first pilot studies in classroom will be also presented and discussed.

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No

Level for award
 (Hons, MSc,
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