Workshops

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Title:
MOOC for mathematics teacher education: a collaborative space for learning

Abstract:
MOOC (Massive Open Online Courses) are a worldwide emerging educational phenomenon. In the workshop, we will do an overview of them, to underline how they are classified and which kind of MOOC are less spread than others. Among these, the MOOCs for mathematics teacher education need a great effort by their designers to reach a high completion rate. We are MOOC designers since 2015, and our MOOCs had completion rates equal to 36% and 43% (values very different from those reported in the literature: 12% for the same kind of MOOCs). During the workshop, we will expose some of our distance educational practices that foster teachers collaboration within these online environments. Moreover, we want to involve participants to use some of the tools that we incorporate in our MOOCs, to let them experience firsthand how these tools are collaborative.

Keywords:
MOOC, mathematics teacher education, collaboration, technological resources, e-learning

Text: 486 words

The introduction of Massive Open Online Courses (MOOCs) in 2008, enabled by technology and social networking, has opened new educational possibilities. MOOCs build on the active engagement from some hundreds to several thousands learners who self-organise their participation according to learning goals, prior knowledge and skills, and common interests.
According to their pedagogical design, MOOCs can be classified in three main categories: (i) xMOOCs, that are designed as structured courses with video presentations, short quizzes and testing; (ii) cMOOCs or connectivist MOOCs, that are based on a connectivism theory of learning and a participative pedagogical model; and (iii) quasi-MOOCs, which provide online open educational resources aiming at supporting learning-specific tasks and do not offer the social interaction given by cMOOCs or a structured course as in xMOOCs.
Although there is a wide choice of topics covered by more than 6800 MOOCs available worldwide (in 2016: https://www.class-central.com/report/mooc-stats-2016/), the use of MOOCs for teacher professional development is still uncommon, especially in mathematics. However, there is a growing interest in designing technology-mediated teacher professional development programmes and the MOOC format seems to be able to support a co-working model of professional development for the community of teachers (Taranto et al., 2017). Nevertheless, collaboration cannot be considered as a spontaneous way of working (and of learning as a consequence), especially within such remote contexts. Designers have to make it possible through specific techniques.
We are researchers in Mathematics Education from the Department of Mathematics at Turin University and members of a team of experienced MOOC designers. Since October 2015, we are delivering MOOCs for mathematics teacher education based on the main topics in the Italian national Curriculum (Arithmetic and Algebra, Geometry, Change and Relation, Uncertainty and Data). So far, we have delivered MOOCs on the first two topics. The third one, on Change and Relation, will start on January 29th.
In this workshop, we want to stress how the collaboration is supported in a MOOC environment during both its design and its delivering. In fact, during the MOOC delivering the enrolled teachers have occasion to interact with each other thanks to suitable communication message boards, provided by researchers as

designers. Depending on their facets, these boards allow the teachers to share not only texts, but also pictures, audio-video, and mathematical files. In this way, the communication is really enriched and the interaction among teachers produces shared materials and practices. Furthermore, also the researchers as designers can experiment collaborative moments, thanks to the digital tools used to transpose the material in the web. Thanks to all the digital tools used in the MOOC, the trainers are able to communicate their training intentions at distance, to share research results, methodologies and teaching strategies that can be used in the classroom with students.
During the workshop we will introduce the audience to some tools that we use in our MOOCs to share how it is possible co-working and co-learning also in online courses.

Technical facilities needed for the workshop:
For our workshop, it is important that participants can work on a device (laptop, tablet, …). It is not essential that each person has a device at disposal; every person could work in a group of 3. In particular internet connection is needed.