

Designing MOOC

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**EMPOWER expert pool:
Course development &
Curriculum design**

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de Vries*

Innovative impact

The innovative impact of the paper can be highlighted by the following statements:

1. Applying the Group Concept Mapping, a non-traditional and power research methodology for objectively identifying the shared vision of a group of experts on MOOC didactical principles.
2. Defining MOOC didactical principles and their operationalisations in more concrete guidelines.
3. Formulating suggestions for combining xMOOC and cMOOC

Designing MOOC: a shared view on didactical principles

The paper reports briefly on the results of a study that applied the Group Concept Mapping (GCM) (Kane & Trochim, 2007; Stoyanov, Hoogveld, & Kirschner, 2010; Trochim and McLinden, 2017), to identify some didactic principles for designing MOOCs. It addresses the following research issues as found in the literature: (a) the discussion on MOOC didactics has been often replaced by debate on technological platforms; (b) the discourse has been on a very general level (e.g. xMOOC vs cMOOC); and (c) the research methods applied are mostly qualitative (Bali, 2014; Bayne & Ross, 2014; Kop, Fournier & Sui Fai Mak, 2011) or surveys by questionnaires (Margaryan, Bianco & Littlejohn, 2015). We first present the GCM, our main research methodology for data collection and analysis. Next, we describe the procedure and participants. Then we discuss some of the results. Finally we formulate some conclusions.

Group Concept Mapping

Group Concept Mapping is a mixed methods participative research methodology that facilitates a group of experts to arrive in an objective way at a shared vision regarding a particular issue (e.g., what are MOOC didactic principles). While the participants generate, sort and rate ideas independently and anonymously of each other, two advanced multivariate statistical techniques - multidimensional scaling (MDS) and hierarchical cluster analysis (HCA) - aggregate the individual contributions to identify patterns in the data and show the group's common understanding on the issue under investigation. Whereas GCM builds upon the strengths of other methods such as interviews, questionnaires, affinity diagram and Delphi method, it mitigates some of their weaknesses. The GCM shows how individual ideas are related to each other, how they are grouped in more general categories and how ideas and categories are prioritised.

Procedure and Participants

We invited all of the HOME project partners (<http://home.eadtu.eu/>) to take part in the study. 35 of them register to the study's web environment for data collection and analysis (Concept System Global Max, 2015). 25 of them participated in the brainstorming phase by generating ideas about specific instructional guidelines that should be taken into

Comparable examples

Write here any comparable examples to your paper, or anything else you believe is interesting to share here, if you have place left after entering the references and resources)

References

Bali, M. (2014). MOOC Pedagogy: Gleaning good practice from existing MOOCs. *MERLOT Journal of Online Learning and Teaching*, 1, 44-55.

Bayne, S., & Ross, J. (2014). *The pedagogy of the Massive Open Online Course: the UK view*. The University of Edinburgh, The Higher Education Academy.

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Higher Education Online: MOOCs the European way (HOME). European funded project, initiated and coordinated by EADTU, 2014-2016. Retrieved from <http://home.eadtu.eu/>

Kane, M., & Trochim, W. M. K. (2007). *Concept mapping for planning and evaluation*. Thousand Oaks, CA: Sage.

Kop, R., Fournier, H., & Sui Fai Mak, J. (2011). A Pedagogy of abundance or a pedagogy to support human beings? Participant support on Massive Open Online Courses. *The*

account when designing a MOOCs. 113 ideas were generated that were then a subject of editing for clarity and appropriateness to the project and reducing the raw statements to a group of unique ideas. The remaining 79 ideas were sent back to the participants for grouping the ideas on similarity of meaning and to rate them on importance (1 = relatively unimportant; 5 = extremely important) and difficulty/easy to apply to the MOOC didactic design (1 = very difficult; 5 = very easy). A group of 12 dedicated project' partners were involved in these two activities.

Results

The Multidimensional analysis (MDS) and Hierarchical cluster analysis (HCA) on the MDA coordinates identified 9 themes related to MOOC didactical principles, which could be further operationalised by the individual statements that each theme consists of. They are: Learning design, Curriculum design, Methodologies, Learning Network, Self-regulated learning, Assessment, Technology & scaling, and Participation and Organisation. See Figure 1.

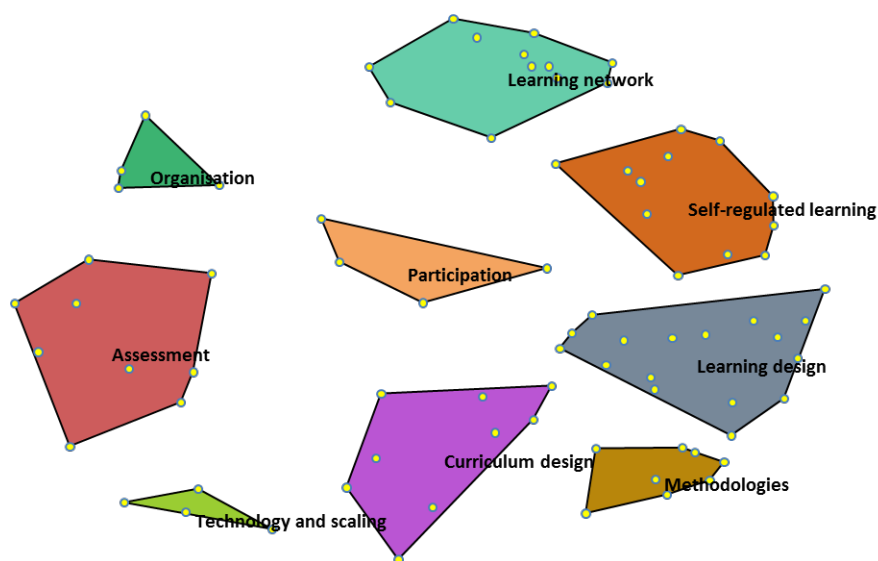


Figure 1. Themes MOOC didactical principles

Methodologies, Curriculum design, Learning Design, Self-regulated learning, Learning Network and Assessment are closely related to each other and specify directly MOOC didactical principles at different levels: macro, mezzo and micro. The other three, namely Participation, Technology & Scaling and Organisation, could be considered as supportive. The results of this study clearly suggest combining the instructional principles behind xMOOCs and cMOOCs and some concrete steps are

International Review of Research in Open and Distance Learning, 12(7), 74-93.

Margaryan, A., Bianco, M., & Littlejohn, A. (2015). Instructional quality of massive open online courses (MOOCs). *Computers & Education*, 80, 77-80.

Stoyanov, S., Hoogveld, B., & Kirschner, P.A. (2010). Imaging future learning: mapping major changes to education and training in 2025. *eLearning Papers*, special edition. European Commission, 9-23.

Trochim, W.M & McLinden, D. (2017). Introduction to a special issue on concept mapping. *Evaluation and Program Planning*, 60 (2017) 166–175.

Resources

List of resources

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proposed how it can be done.

Conclusions

The study identified some concrete guidelines for MOOC didactics, which are grouped into more general categories to be taken into account when designing a MOOC. The results clearly indicate the need for combining the instructional principles behind xMOOCs and cMOOCs and suggest some concrete measures for that. Self-regulated learning and the ideas inside this cluster plays a bridging role between more instructivist zone on the map (Curriculum design, Learning design Methodologies) and more connectivist zone (Learning network).

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Bali, M. (2014). MOOC Pedagogy: Gleaning good practice from existing MOOCs. *MERLOT Journal of Online Learning and Teaching*, 1, 44-55.

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