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The Quality Reference Framework

for MOOC Design and Evaluation

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Abstract

This paper introduces "The Quality Reference Framework (QRF) for the Quality of MOOCs". It was developed by the European Alliance for the Quality of Massive Open Online Courses (MOOCs), called MOOQ. Overall, MOOQ could address and reach out to more than 100,000 MOOC learners, designers, facilitators and providers through dissemination and exploitation activities. Main objective of MOOQ was the development of the QRF finalized and published in the year 2018 after more than three years of revisions. In close cooperation with leading international institutions and associations, MOOQ could involve in the QRF finalization more than 10,000 MOOC learners, designers, facilitators and providers through divers means including the Mixed Methods research with the Global MOOC Quality Survey (GMQS), the MOOQ presentations and workshops at regional, European and international conferences as well as communication and collaboration in traditional channels and social media. The QRF consists of three dimensions: Phases, Perspectives and Roles. They were carefully selected, discussed and agreed with all MOOC stakeholder groups to cover the different views, requirements and responsibilities during the lifetime of a MOOC. The paper presents the two QRF quality instruments: the QRF Key Quality Criteria for MOOC experts and the QRF Quality Checklist for MOOC beginners.

Keywords: Massive Open Online Courses (MOOCs), MOOC design, MOOC quality, Quality Reference Framework (QRF), QRF Key Quality Criteria, QRF Quality Checklist

The QRF - based on a broad and truly international collaboration

"The Quality Reference Framework (QRF) for the Quality of MOOCs" was developed by the European Alliance for the Quality of Massive Open Online Courses (MOOCs), called MOOQ. MOOQ was started due to the huge demand for improving the quality of MOOCs from research as well as from practice (Daniel, 2012; Liyanagunawardena, Adams, & Williams, 2013; Gaskell, & Mills, 2014; Conole, 2015; Reich, 2015; Veletsianos, & Shepherdson, 2016; Stracke, 2017a, 2017b, 2018, 2019; Zawacki-Richter, Bozkurt, Alturki, & Aldraiweesh, 2018). Overall, MOOQ could address and reach out to more than 100,000 MOOC learners, designers, facilitators and providers through dissemination and exploitation activities. The main objective of MOOQ was the development of the QRF that was finalized and published in the year 2018 after more than three years of revisions and refinements. In close cooperation with leading European and international institutions and associations, MOOQ could involve in the QRF finalization more than 10,000 MOOC learners, designers, facilitators and providers through divers means including the Mixed Methods research with the Global MOOC Quality Survey (GMQS), the MOOQ presentations and workshops at regional, European and international conferences as well as communication and collaboration in traditional channels and social media.

The three dimensions of the QRF

The QRF consists of three dimensions: Phases, Perspectives and Roles:

Table 1: Three dimensions of the QRF

Dimension 1: Phases	Analysis, Design, Implementation, Realization, Evaluation
Dimension 2: Perspectives	Pedagogical, Technological, and Strategic
Dimension 3: Roles	Designer, Facilitator, and Provider

These three dimensions were carefully selected, discussed and agreed with all MOOC stakeholder groups to cover the different views, requirements and responsibilities during the lifetime of a MOOC.

They are mainly based on the results from the Mixed Methods research by MOOQ (Stracke, & Tan, 2018; Stracke et al., 2017, 2018): That included the realization and evaluation of the first Global MOOC Quality Surveys (for MOOC learners, designers and facilitators), the 27 semi-structured interviews conducted with MOOC experts (MOOC designers, facilitators and providers) and the MOOQ Workshops at eight international conferences (ICDE 2015 in Sun City, South Africa, OE Global 2016 in Krakow, Poland, EC-TEL 2016 in Lyon, France, OE Global 2017 in Cape Town, South Africa, IEEE EDUCON 2017 in Athens, Greece, ICALT 2017 in Timisoara, Romania, EARLI 2017 in Tampere, Finland and EC-TEL 2017 in Tallinn, Estonia). Furthermore, the QRF has adapted the International learning quality standard ISO/IEC 40180 (former ISO/IEC 19796-1) to the specific requirements and needs for MOOCs.

The QRF dimensions are explained more in detail in the following sub-sections.

QRF Dimension 1: Phases

The QRF consists of five phases that normally overlap and can be repeated in iterative cycles:

1. **Analysis** (A): identify and describe requirements, demands and constraints

2. **Design** (D): conceptualise and design the MOOC

3. **Implementation** (I): implement a MOOC draft and finalize it through testing

4. **Realization** (R): realise and perform the MOOC including support and assessment

5. **Evaluation** (E): define, run and analyse the evaluation and improve the MOOC

QRF Dimension 2: Perspectives

The QRF distinguishes three perspectives that have to be addressed and focused during the different phases:

1. **Pedagogical** (P): how has the MOOC to be designed and developed?

2. **Technological** (T): how has the MOOC to be implemented and realized?

3. **Strategic** (S): how has the MOOC to be managed and offered?

QRF Dimension 3: Roles

The QRF covers three roles and indicates their involvement and responsibilities in relation to the phases and perspectives:

1. **Designer**: Designer includes content experts, content authors, instructional designers, experts for MOOC platforms, technology-enhanced learning and digital media as well as any others who may contribute to the design of a MOOC.

2. **Facilitator**: Facilitator includes the pedagogical facilitators and experts with content knowledge (such as moderators, tutors, teaching assistants) who manage forum, provide feedback and monitor learning progress, the technical facilitators (such as technical support for learners) as well as others who may contribute to support participants in their learning process in a MOOC.

3. **Provider**: Provider includes the (internal and external) MOOC providers, the technical providers (such as technology providers, programmers, software designers and developers), managers, communication and marketing staff as well as others who are involved in the decision-making processes leading to the delivery of a MOOC.

The structure of the QRF

The QRF presents the quality framework as general template to be adapted together with two applications: the QRF Key Quality Criteria for MOOC experts and the QRF Checklist for MOOC beginners.

QRF Key Quality Criteria for MOOC experts

The QRF Key Quality Criteria are provided in a table for experienced MOOC designers, facilitators and providers. They are intended as support for analysing, designing, implementing, realizing and evaluating a MOOC. The QRF Key Quality Criteria are defined as action items for potential activities in the different processes.

QRF Quality Checklist for MOOC beginners

The QRF Quality Checklist presents leading questions for all three QRF dimensions. They are intended for both, beginners and experts in the MOOC design and development. Therefore, the QRF Quality Checklist serves as a starting point and a reminder on critical issues to be addressed. It complements the QRF Key Quality Criteria that defines the phases and processes of the MOOC design and development.

Usage and benefits of the QRF

To use the QRF, it is most important to adapt it to own specific needs. MOOC designers, facilitators and providers have to select and define the relevant phases including their perspectives and roles according to their own situation, learning objectives, target groups, context and further conditions. Such adaptations should be documented to inform all

involved stakeholders as well as to allow their review in the evaluation and further improvement of the MOOCs.

There are four core benefits of the QRF:

1. First, the QRF provides a generic framework that can be adapted to each specific context.
2. Second, the QRF identifies key quality criteria for better orientation on the MOOC design.
3. Third, the QRF presents a checklist for the quality development and evaluation of MOOCs.
4. And fourth, the QRF enables a continuous improvement cycle for MOOC design and provision.

Innovative impact

The QRF has already achieved direct short-term innovative impact: It was used for the design and implementation for the development of two MOOCs as pilot implementations. They were following different pedagogical approaches (one xMOOC as traditional online course and one cMOOC for collaborative online learning). In both cases, the usage of the QRF was considered as very helpful by the MOOC designers and leading to reduced efforts due to the design support provided by the QRF.

Thus, the QRF will achieve long term innovative impact for the development of MOOCs, too. In addition, the QRF will also help MOOC providers and MOOC facilitators to improve the provision and facilitation of future MOOCs: The QRF Key Quality Criteria and the QRF Quality Checklist are addressing all stakeholder groups offering support for beginners as well as experts.

The QRF can be downloaded for free with an open Creative Commons license CC-BY from: www.MOOC-quality.eu/QRF

Conclusions

The QRF is the first and unique guideline for the quality of MOOCs based on Mixed Methods research and involvement of the global MOOC community. The included QRF Quality Checklist offers MOOC beginners an easy tool for the design and implementation of a first MOOC. And the QRF Key Quality Criteria support MOOC experts to continuously evaluate and improve their MOOC designs. Thus, the QRF will improve the future MOOCs and online learning in general.

References

Conole, G. (2015). Designing effective MOOCs, *Educational Media International*, *52*(4), 239-252. doi:10.1080/09523987.2015.1125989

Daniel, J. (2012). Making Sense of MOOCs: Musings in a Maze of Myth, Paradox and Possibility. Retrieved from http://sirjohn.ca/wordpress/wp-content/uploads/2012/08/120925MOOCspaper2.pdf

Gaskell, A., & Mills, R. (2014). The quality and reputation of open, distance and e-learning: what are the challenges? *Open Learning*, *29*(3), 190-205.

Liyanagunawardena, T., Adams, A., & Williams, S. (2013). MOOCs: A systematic study of the published literature 2008-2012. *The International Review of Research in Open and Distributed Learning*, *14*(3), 202-227. doi:http://dx.doi.org/10.19173/irrodl.v14i3.1455

Reich, J. (2015). Rebooting MOOC research. *Science, 347*(6217), 34-35. doi:10.1126/science.1261627.

Stracke, C. M. (2019). Quality Frameworks and Learning Design for Open Education. *The International Review of Research in Open and Distributed Learning, 20*(2), 180-203. doi:10.19173/irrodl.v20i2.4213

Stracke, C. M. (2018). Como a Educação Aberta pode melhorar a qualidade de aprendizagem e produzir impacto em alunos, organizações e na sociedade? In M. Duran, T. Amiel, & C. Costa (Eds.), *Utopias and Distopias da Tecnologia na Educação a Distância e Aberta* (pp. 499-545). Campinas: & Niterói: UNICAMP & UFF. Retrieved from http://www.opening-up.education

Stracke, C. M. (2017a). The Quality of MOOCs: How to improve the design of open education and online courses for learners? In P. Zaphiris & A. Ioannou (Eds.), *Learning and Collaboration Technologies. Novel Learning Ecosystems. LCT 2017, Part I, LNCS 10295* (pp. 285–293). doi:10.1007/978-3-319-58509-3_23

Stracke, C. M. (2017b). Open Education and Learning Quality: The Need for Changing Strategies and Learning Experiences. *Proceedings of 2017 IEEE Global Engineering Education Conference (EDUCON)* (pp. 1044-1048). doi:10.1109/EDUCON.2017.7942977

Stracke, C. M., & Tan, E. (2018). The Quality of Open Online Learning and Education: Towards a Quality Reference Framework for MOOCs. In J. Kay, & R. Luckin (Eds.), *Rethinking learning in the digital age. Making the Learning Sciences Count: The International Conference of the Learning Sciences (ICLS) 2018* (pp. 1029-1032). doi:http://hdl.handle.net/1820/9909

Stracke, C. M., Tan, E., Texeira, A., Pinto, M., Vassiliadis, B., Kameas, A., Sgouropoulou, C., & Vidal, G. (2018). *Quality Reference Framework (QRF) for the Quality of Massive Open Online Courses (MOOCs)*. Retrieved from http://www.mooc-quality.eu/QRF

Stracke, C. M., Tan, E., Texeira, A. M., Pinto, M., Kameas, A., Vassiliadis, B., & Sgouropoulou, C. (2018). Gap between MOOC designers' and MOOC learners' perspectives on interaction and experiences in MOOCs: Findings from the Global MOOC Quality Survey. In M. Chang, N.-S. Chen, R. Huang, Kinshuk, K. Moudgalya, S. Murthy, & D. G. Sampson (Eds.), *Proceedings 18th IEEE International Conference on Advanced Learning Technologies (ICALT)* (pp. 1-5). doi: 10.1109/ICALT.2018.0000

Stracke, C. M., Sgouropoulou, C., Kameas, A., Vassiliadis, B., Texeira, A. M., & Pinto, M. (2018). Fostering Quality in MOOCs: a European Approach. In K. Ntalianis, A. Andreatos, & C. Sgouropoulou (Eds.), *Proceedings 17th European Conference on e-Learning (ECEL)* (pp. 533-538).

Stracke, C. M., Kameas, A., Vassiliadis, B., Sgouropoulou, C., Texeira, A. M., Pinto, M., & Vidal, G. (2017). The Quality of Open Online Education: Towards a Reference Framework for MOOCs. In *Proceedings of 2017 IEEE Global Engineering Education Conference (EDUCON)* (pp. 1712-1715). doi: 10.1109/EDUCON.2017.7943080

Veletsianos, G., & Shepherdson, P. (2016). A Systematic Analysis and Synthesis of the Empirical MOOC Literature Published in 2013-2015. The International Review of Research in Open and Distance Learning, 17(2), 198-221. doi:10.19173/irrodl.v17i2.2448

Zawacki-Richter, O., Bozkurt, A., Alturki, U., & Aldraiweesh, A. (2018). What Research Says About MOOCs – An Explorative Content Analysis. *The International Review of*

Research in Open and Distributed Learning, *19*(1), 242-259.

doi:10.19173/irrodl.v19i1.3356