4 Quality

BizMOOC Discussion paper 4

Existing MOOC quality models

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Author: Darco Jansen (EADTU)

1. Abstract

This paper discusses the different dimensions related to the quality of MOOCs. First, four different kinds of perspectives are identified as 1) learner's point of view ; 2) pedagogical framework of MOOCs ; 3) input elements 4) output measures. Second, a worldwide review to quality models of online education is discussed along with more holistic quality labels. These labels are also applied to MOOCs as demonstrated by the OpenupEd Quality Label.

2. Introduction

Considering the quality of MOOCs, it is essential to guarantee a worthwhile learning experience for the learner and at the same time to reach the goals the provider/institution has for the education provision. On the one hand, the publicity surrounding MOOCs has been tempered by scepticism
concerning the quality of MOOCs. The possible flaws of MOOCs include the quality of the deployed pedagogies, low completion rates, and a failure to fulfill the promises of inclusive and equitable education for all. On the other hand ,giving a boost to open and online education, MOOCs have become a symbol of a larger modernisation agenda for universities, and are perceived as tools for universities to improve the quality of their blended and online education, both in degree education and CPD.
The MOOC provision is also much more open to external scrutiny as part of a stronger globalising higher education market. This has important consequences for quality frameworks and quality processes that go beyond the needs of a single MOOC or MOOC provider.

3. Quality perspectives on MOOCs

Concept of Quality

The concept of online education quality could be interpreted from various perspectives many dimensions. One perspective is the quality of products and/or of processes. Quality can be viewed from the perception of many stakeholder involved (“in the eye of the beholder”): not only learners and educators, but also higher education institutions (HEIs) and MOOCs platform providers, quality agencies, government, potential employers and others who might recognise achievement in a MOOC. This multi stakeholders perspective considers quality as “conformance to requirements” (Crosby, 1979). Assuming the

existence of a set of requirements that an institution is offering to MOOCs and of its learners, this perspective is described in such a way that no misunderstanding is possible. Another perspective concerns “fitness for use” (Juran, 1998). For a MOOC, this formulation assumes a group of users, within which everyone has their own requirements and expectations of MOOCs. Although both views appear to be unrelated, they complement each other in reality. In addition, Nordkvelle, Fossland & Nettleland (2013) states that quality could be examined from the macro (national/global), meso (institutional) and micro (course/module) level.

Consequently, QA on MOOCs cannot be easily standardised. Even within one single MOOC there is not any uniform aim among actors involved (institution, responsible teaching staff and participants). Since MOOCs are designed for various target groups– even within one target group– motivations and intentions of MOOC participants vary greatly. Hence, quality systems will differ by the level and the aim.

International Context

Quality of MOOCs can be considered from the following four dimensions (see also Jansen et al, 2016):

1. Quality from the learner’s point of view.
    - A participant might select a MOOC based a notion of brand reputation attached to the MOOC platform, such as the originating institution, and the course author.
    - Other quality dimensions are needed, such as one that is related to learner satisfaction. Some MOOC portals (For example coursetalk.com, mooc-list.com, class-central.com) enable people to rate different MOOCs by their platforms and providers.
    - Considering quality from the perspective of learners requires an engagement with diverse goals, expectations, learning behaviours, and

abilities of learners to facilitate their own learning.

- MOOCs attract a diverse range of learners, who come from different backgrounds and have a wide range of motivations for enrolling in a particular MOOC (e.g. Hill, 2013; Kizilcec, Piech & Schneider, 2013).
- To make the personal learning objectives more visible, experiments with digital badging systems can be applied (Schön et al. 2013)
- In addition, schemes can be applied to measure the motivations and intentions of participants (Kalz et al., 2014).

2. Quality connected to the pedagogical framework of the MOOC
    - By MOOC's definition the pedagogical model of MOOCs should be designed to scale gracefully to unlimited numbers of participants, meaning that the teaching and support efforts **do not** increase significantly as the number of participants increases.
    - Current research begins to examine qualitative indicators for the dialogue and the interaction that can guide the choice of MOOC's pedagogical model.
    - Downes (2013) has formulated four key factors to success in this area: autonomy, diversity, openness and interactivity.
    - Dalziel et al. (2013) describes different learning design principles that could be applied on MOOCs as well.
3. Quality related to the input elements
    - This may include aspects such as instructional design, the content and resources, multiple choice questions and assessments, the deployed technology, and the quality of instructors. These aspects are aligned in the conventional criteria

of course quality.

- Margaryan et al. (2015) evaluated the instructional quality of 76 MOOCs and concluded that they all scored poorly overall.
- Lowenthal & Hodges (2015) reviewed six MOOCs applying quality schemes intended for traditional for-credit online courses. They concluded that "two of the MOOCs passed the review and therefore could be considered as high quality online courses".
- Costello, Brown & Holland (2016) found a number of flaws when analysing the multiple choice questions on several MOOCs.

4. Quality based on outcome measures
    - These might include the number of learners who complete a MOOC or achieve the certification. These metrics are (relatively) easy to be measured.
    - Neuböck et al. (2015) and Macleod et al. (2015) have confirmed the earlier findings by Hollands and Tirthali (2014, p. 42) that only "3% to 15% out of the total enrollers completed a course"
    - MOOCs mostly attract well-educated learners who already have higher education qualifications, and are employed (Macleod, Haywood, Woodgate & Alkhatnai, 2015).
    - Learning outcomes can also be measured qualitatively. This overlaps with the first dimension, namely, the quality from the learner's point of view can be measured through the pre- and post-test of the motivations and intentions of MOOCs participants.
    - However, due to the fact that not all learners follow the instructional pathway of a MOOC, taking the completion rate as a measure for the quality of a MOOC has therefore been criticised (e.g. Jordan, 2015). It is argued that the low values of

> conventional measures, such as retention and completion rate, may not signal poor quality.

Ossiannilsson et al. (2015) have studied the existing quality models for online education, including MOOCs. They have identified and analysed several quality models worldwide. They categorised these quality models by the following functions and uses (p7-8):

- certification granting a label as a level of recognition after some form of review
- benchmarking as a comparison of institutional performance with that of others
- accreditation as a form of mandatory certification or licensing by formal regulatory agencies
- advisory purposes offering structured guidance

In addition they align different quality systems based on a maturity model: low maturity systems are characterised by norms being set externally and a focus on product, whereas in high maturity quality systems institutions have embedded processes aiming at quality enhancement towards their own objectives. The latter focuses on quality process.
Ossiannilsson et al. (2015) found that most models take a holistic view of quality, recognising the need to address many aspects of an enterprise. Quality must be seen as the result of the application of a systematic process of design and evaluation with the aim to improve that over time. As such, the quality enhancement for MOOCs is an iterative process, and the design methodology at different levels of granularity can support this.
Ossiannilsson et al. (2015) developed eleven recommendations regarding quality assurance for online education. Regarding MOOCs, they in general state that one needs to apply generic quality systems to MOOCs that allows high degree of flexibility, contextualisation and allows for designing personalised quality management system. In addition, they recommend that one needs to a) support audits and benchmarking

exercises; b) make these applicable to non-traditional MOOC providers as well (unbundling); c) address quality issues concerning credentialisation through qualifications frameworks and d) encourage, facilitate and support the implementation of quality assurance.

European Context

Ossiannilsson et al (2015) found that quality models for online education vary considerably regarding their details and the number of quality indicators, while most of them cover a consistent set of important dimensions. In Europe the most recognised one is E-xcellence (Kear, Williams & Rosewell, 2014). This framework uses six dimensions: Strategic Management, Curriculum Design, Course Design, Course Delivery, Staff Support and Student Support.

If there is a consensus that this range of dimensions is appropriate for e-learning generally, it seems appropriate for MOOCs to use a similar framework. Based on the E-xcellence framework a quality model for MOOCs was developed. The OpenupEd Quality label (Rosewell & Jansen, 2014) describes a self-assessment and review quality assurance process for the MOOCs on the European OpenupEd portal (http://www.openuped.eu), but this OpenupEd framework can be used for quality assurance of any MOOC. The partners in OpenupEd have a commitment to opening up education through MOOCs to the benefit of both learners and wider society. To this end, partners endorse the eight distinctive features described in Table 1 as the guiding principles for their MOOCs offering. The OpenupEd Quality Label requires courses to address openness to learners and open licensing and is thus firmly rooted in the Open Education movement (next to online education). As such the OpenupEd label requires that the quality of MOOCs are “fitness for use” (Juran, 1998) to these features.

OpenupEd distinctive features	Explanation
Openness to learners	This captures aspects such as: open entry (no formal admission requirements), freedom to study at time, place and pace of choice, and flexible pathways. A broader perspective stresses the importance of being open to learners' needs and providing for a wide variety of lifelong learners.
Digital openness	Courses should not only be freely available online but also allow application of open licensing so that material and data can be reused, remixed, reworked and redistributed (e.g. using CC-BY-SA or similar).
Learner-centred approach	Courses should aid students to construct their own learning from a rich environment and to share and communicate it with others; they should not simply focus on the transmission of content knowledge to students.
Independent learning	Courses should provide high quality materials to enable an independent learner to progress through self-study.
Media-supported interaction	Course materials should make the best use of online affordances (interactivity, communication, collaboration) as well as rich media (video and audio) to engage students in their learning.
Recognition options	Successful course completion should be recognised as indicating worthwhile educational achievement.

Quality focus	There should be a consistent focus on quality in the production and presentation of a course.
Spectrum of diversity	Courses should be inclusive and accessible to a wide diversity of citizens; they should allow a spectrum of approaches and contexts, accounting for a variety of language, culture, setting, pedagogics and technologies.

Table 1. The distinctive features of OpenupEd MOOCs (Jansen et al, 2016)

The OpenupEd Quality Label provides a process-based quality enhancement framework for MOOCs and their providers. The benchmarks statements in this label, derived from benchmarks produced by the E-xcellence framework, are divided into two groups: those that are applied at the institutional level and those that are designed for individual courses (MOOCs). The benchmarks at the institutional level are grouped into the same six areas as the E-xcellence benchmarks. Table 2 and 3 shows the framework at both levels, i.e. institutional and course respectively. For the institutional level, the examples (when appropriate) are derived from those that are provided as examples in the E-xcellence framework in the previous paragraph.

Institutional level	
Area	**Example of a benchmark**
Strategic management	The institution has a MOOC strategy that is related to its overarching strategies for e-learning, open education and open licensing.
Curriculum design	The institution makes explicit the relationship between its MOOC portfolio and its mainstream curriculum.

Course design	The institution provides templates or guidelines for the layout and the presentation of MOOCS that ensure the consistency across all portfolios while maintain the flexibility to accommodate a range of teaching and learning methods.
Course delivery	The MOOC platform provides a range of online tools that are appropriate for the adopted educational models.
Staff support	The institution provides adequate support and resources to MOOC staff and manages workloads appropriately.
Student support	MOOC students are provided with clear and up-to-date information about courses including its aims/objectives, learning and assessment methods, workload and prerequisite knowledge.

Table 2: Framework for the OpenupEd Quality Label at the institutional level

In the framework of the pedagogical research developed as a collaboration with different EU-funded MOOC projects, a more comprehensive definition was adopted, which is “an online course designed for large number of participants that can be accessed by anyone anywhere, as long as they have an internet connection, is open to everyone without entry qualifications and offers a full/complete course experience online for free” (Brouns et al., 2014). In 2015, this definition has been validated amongst European institutions (Jansen et al., 2015). Additional criteria for MOOC development were defined as well (http://www.openuped.eu/images/docs/Definition_Massive_Open_Online_Courses.pdf), such as massive dimension and scalability (The pedagogical model of the course is such that the efforts of all services (including of academic staff on tutoring, tests, etc.) does not increase significantly as the number of participants increases).

Course level
A clear statement of learning outcomes for both knowledge and skills is provided.
There is reasoned coherence between learning outcomes, course content, teaching and learning strategy (including the use of media), and assessment methods.
Course activities aid students to construct their own learning and to communicate it to others.
The course content is relevant, accurate, and current.
Staff who write and deliver the course have the skills and experience to design and deliver the course successfully.
Course components have an open licence and are correctly attributed. Reuse of material is supported by the appropriate choice of formats and standards.
Course conform to guidelines for layout, presentation and accessibility.
The course contains sufficient interactivity (student-to-content or student-to-student) to encourage active engagement. The course provides learners with regular feedback through self-assessment activities, tests or peer feedback.
Learning outcomes are assessed using a balance of formative and summative assessment appropriate to the level of certification.
Assessment is explicit, fair, valid and reliable. Measures appropriate to the level of certification are in place to counter impersonation and plagiarism.
Course materials are reviewed, updated and improved based on feedbacks from stakeholders.

Table 3: Framework for the OpenupEd Quality Label at the course level

4. Conclusions

Quality models of MOOCs are becoming more mature. Starting from various different perspectives and dimensions, more holistic quality labels are developed based on experiences in both open and online education. These quality labels are based on existing systems of open and online education. The OpenupEd label published in 2014 seems to be the most elaborated one based on a long history of the E-xcellence label in Europe.

Note

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