13th European Quality Assurance Forum

Broadening the scope of QA

Hosted by WU (Vienna University of Economics and Business) and AQ Austria
15-17 November 2018

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Assuring the Quality of Credentials to support Learning Innovation

Abstract

The credential-space is currently seeing significant innovation, driven by twin priorities, namely the unbundling of learning, and the drive to digitise credentials as prioritised by the Bologna Digital Agenda and the EU's Digital Education Action Plan. While traditionally students could depend on recognition of widely understood signals of experience and expertise such as university degrees, the same cannot be said for the creatures of MOOCS such as 'nanodegrees' and 'specialisations'.

While it is clear that degrees from accredited HEIs form the gold standard in terms of their recognition and portability, no clear set of comprehensive criteria exists to assess the quality of new forms of credentials, nor for standards and technologies which are applied to credentials. The authors therefore propose a framework for such analysis in the form of a set of quality characteristics for credentials, based on work conducted by the OEPass project.

1. Digital transformation as a catalyst for new types of credentials

Digital transformation is already a reality for both labour markets as well as higher education systems. Although such developments have not been neglected in recent years, "the progress on integrating technology in education remains limited" (European Commission, 2018, p. 2). Especially the world of work increasingly demands a quick response from the education system to provide people with newly desired qualifications or "future skills" and technology can play a major role in this. In response to this increasing demand different education providers have developed open educational opportunities that go beyond the formal structures that make up current educational systems.

While it is clear, that degrees from accredited higher education institutions (HEIs) consist of the gold standard in terms of their reputation, recognition and portability, no clear set of comprehensive criteria exists to assess the quality of new forms of credentials. We argue that a discourse on the quality of credentials in the growing open education market is needed on two main aspects: A) The quality of open learning and the necessary information that has to be documented for formal and informal recognition of open learning and B) the quality of technologies and the required standards to enable the digital documentation of learning in the form of (open) credentials.

New types of credentials have been developed in recent years in order to make learning pathways as digestible and flexible as possible. This has been especially visible yet controversial in the context of Massive Open Online Courses (MOOCs). As a basic principle, in order to make university education available to a theoretically unlimited audience, traditional degrees are broken into smaller units made available online. As in the Bologna system, degrees are broken into modules, modules into courses. These courses can be even further split up into short segments based on empirical evidence on the effectiveness of smaller learning units. Universities are becoming part of this trend by partnering up with international MOOC platforms, applying such modular approaches themselves, and adding a certain degree of stackability. For example, EdX has a developed a MicroMaster system for university partners (Rampelt et al., 2018).[1] MicroMasters from a wide range of topics such as Supply Chain Management or Artificial Intelligence can either only be taken on their own or additionally count towards a full masters

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[1] Further information here: https://www.edx.org/micromasters

at universities such as the MIT. But also other MOOC platforms such as Coursera and FutureLearn also offer different university level units, from full-degrees to single courses – with content often offered for free and learners paying for assessment and credentialisation at the end of the course. Udacity has developed its own brand in the business with so-called "Nanodegrees"[2] that explicitly aim to serve labour market needs as an alternative to traditional degrees

However, while traditionally students could depend on the recognition and trust in widely understood signals of experience and expertise such as university degrees, the same cannot be said for the new different forms of unbundled education. A typical university may today offer several different types of credentials, ranging from certificates of MOOC participation all the way up to full degrees.

The private sector is proposing a host of solutions to recognise learning in smaller segments, from the aforementioned Nanodegrees or MicroMasters, to centralised skill-banks verified by standardised testing to online systems of recommendation similar to peer-reviewed literature (The Economist, Lifelong Learning Supplement, 2017).

Additionally, a mixture of technological developments, currently for example visible in the emergence of blockchain for educational credentials (Grech & Camilleri, 2018), and policy developments, in particular the focus on credentials as part of the European Commission's Digital Education Plan (European Commission, 2018) or the "Bologna Digital" initiative (Orr et al., 2018) make it even more clear that such an increased focus on innovation in credentials has to be accompanied by a discourse on standards and guidelines regarding the quality of technologies and the quality of open learning.

The authors therefore propose a framework for such analysis in the form of a set of required elements and quality characteristics of credentials, based on work conducted by the OEPass project.[3]

2. Types of credentials

A credential, in its most essential form, is a **statement** awarded from one party to another describing the latter's **qualities**. Credentials are used for the purpose of **proving to a third party** that the holder **qualifies for something**. An educational credential is typically awarded by a responsible and authorized body that attests that an individual has achieved specific learning outcomes or attained a defined level of knowledge or skill relative to a given standard. (ACE, 2016, p. 5)
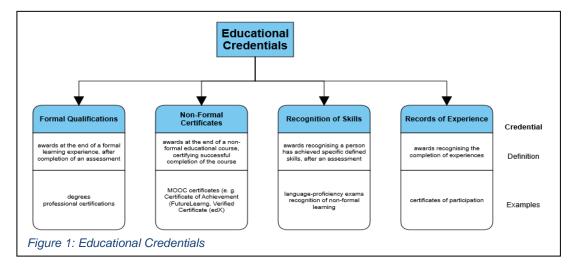
Examples of credentials might include:

- a degree is a *formal qualification* from a **university** to a **graduate** describing that they have **achieved expertise in a subject** (e.g. medicine). This credential can be used to prove to another **educational institution** that the holder qualifies for admittance into a **doctoral degree programme**;
- a job-reference is a *social recommendation* from an **employer** to a **previous employee** describing their **job performance and attitude**. This credential can be used to prove to a **recruiter** that the person qualifies for a **job**;
- a medical licence is an *identity* from a **medical chamber** to a **doctor** describing that they have the required **medical knowledge, skills and conduct**. This credential can be used to prove to a **patient** that the holder is qualified to **practice medicine**

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[2] Further information here: https://eu.udacity.com/nanodegree

[3] More information here: www.oepass.eu

In the context of OEPass, **educational** credentials, may be divided into the following categories:

Figure 1: Educational Credentials

For the purpose of this paper we have considered: 1) Formal recognition in higher education (2) formal recognition in the labour market and (3) Informal recognition in the labour market. For formal recognition of credentials in higher education the criteria for the value of a credential are based on existing standards and guidelines. In a European context these are the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG, 2015) but also practical guidelines for credential evaluators and admission officers developed from within the ENIC-NARIC network, especially the EAR Manual (2016).

3. Elements of a Credential Statement

In general, the standards that exist for formal recognition and quality assurance in higher education can and should also be applicable to any new forms of (open) learning, certification and credentialization. This means, that when assessing credentials as a proof for the quality of (open) learning, key elements of a qualification should always be considered, with **learning outcomes** being the most important criterion (Nuffic, 2016).

As part of the PARADIGMS project the Dutch NARIC Nuffic recently published a policy paper focussing on the evaluation of MOOCs that suggests seven criteria for the assessment of a MOOC certificate (Nuffic, 2018). These criteria can also be translated in the more general context of credentials and their trustworthyness for recognition in higher education. Based on a JRC report from 2016, the Nuffic policy paper also suggests the use of a basic traffic light model that describes different levels of meeting certain criteria (Witthaus et. al., 2016). For the characteristics of credentials that describe the required elements of a credential statement we made use of most of the criteria described by the PARADIGMS project for MOOCs and suggest additional criteria, adding up to a set of 8 criteria for the assessment of a credential for formal recognition in higher education. For the labour market, informal recognition could be based on some or all of these criteria.

Next to clearly defined **learning outcomes**, a credential also needs to contain transparent information on the **quality** of the programme or learning opportunity leading to the credential, the **level** of learning (ideally referenced to a a qualifications framework) and the **workload** required for getting the credential. The learning outcomes should also be backed up by a robust **assessment** mechanism described in the credential that also verifies the **identity** of the **learner** as well as the **issuing organisation**. Additionally, the **reputation** of the organisation issuing the credential can support trust in the credential

Based on this, we have slightly adapted the traffic light model suggested by the PARADIGMS project for the evaluation of the necessary elements of the credential statement (see figure 2).

When using such criteria to evaluate the quality of a credential it also has to be clear, though, that high quality credentials can have different characteristics and do not necessarily need to comply with all criteria to the same extent (also see Nuffic, 2018).

	Learning Outcomes	Quality of Learning	Level of Learning	Workload of Learning	Assessment of Learning Outcomes	Identity of Learner	Identity & Reputation of Issuer
Credential	o Red o Orange o Green o No Info	o Red o Orange o Green o No Info	o Red o Orange o Green o No Info	o Red o Orange o Green o No Info	o Red o Orange o Green o No Info	o Red o Orange o Green o No Info	o Red o Orange o Green o No Info

Figure 2: Elements of a Credential Statement

4. Quality of a Credential

As a document which proves the eligibility of the learner to qualify for something, it can be said to had three purposes, namely to act:

● as a unit of account;
● as a means of exchange;
● as a store of value

The more these characteristics are met by a credential, the higher its **fitness for purpose**, that is, the more likely it will be accepted by third parties. The importance attached to these characteristics depend on users and their intended use-case. Given this, we have developed a matrix to describe the fitness for purpose of the elements above:

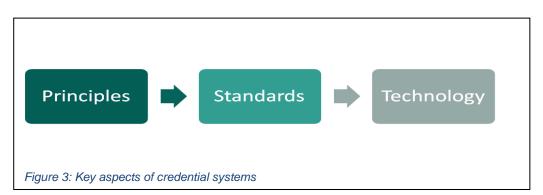|	**Quality of the Statement** *The statement should:*	**Quality of the Medium** *The medium should:*
Distinct	● represent a specific and identifiable and measurable experience, skill or fact ● be attributable to a single, identifiable person	● allow for the storage and display of the statement, as well as any and all associated metadata
Authentic	● contain enough information to: ● verify when, where and by whom it was issued ● trace and reproduce the conditions under which it was issued ● be able to be issued for a limited period and be revocable	● only allow an issuer to create a certificate; ● not allow for any kind of tampering or editing ● be able to store or link to the information required to verify ● display its validity status
Accessible	● be issued in a widely-spoken language or in a easy to read graphical format ● be issued in a standardised form, according to standardised processes	● represent a specific and identifiable and measurable experience, skill or fact

		● be attributable to a single, identifiable person
Exchangeable	● be modular, allowing for the credential to be subdivided into smaller credentials or stacked into larger credentials ● be convertible into other types of credentials	● allow for relational links to be created between credentials ● allow for credentials to be created out of other credentials
Portable	● be owned by the learner	● allow for the user to physically possess the credential in a place of their choosing ● easily shareable by the user

5. Conclusion and Outlook

The concept of assuring the quality of the credentials represents a genuine new frontier for European Quality Assurance. On the one hand, it must reflect standards with regard to the quality of the statement, respectively the quality of learning. This has already been successfully implemented throughout the European Higher Education Area. It is, however, still necessary to clarify with all relevant stakeholders what the minimum requirements are especially for the recognition of open learning.

At the same time, new standards and quality characteristics must be added that do justice to the complexity of credentials. Combining these different characteristics that form the quality of credentials is an approach that has just started to emerge and will still need several iterations in order to develop robust frameworks. A trusted system of credentials thus requires considerations of the following aspects holistically: Principles, standards and technology.

Figure 3: Key aspects of credential systems

Based on these considerations, we see the quality framework that is currently piloted within the OEPass project as having the following uses:

● As a design tool for institutions thinking of innovating in the credential space, to ensure that the eventual credentials meet appropriate quality standards from a holistic perspective;

● as a basic set of design-requirements for implementations of credential technology;

● as a transparency tool for students who are trying to determine equivalency between similar programmes offering different credentials;

● as a transparency tool for credential evaluators at higher education institutions who are trying to assess the quality of learning documented through a credential and at the same time need to build trust into the robustness and quality of new technologies.

For the acceptance of any new credential model to become a reality in the higher education context, it not only needs to complement the long existing standards, it needs to provide an easily adoptable mechanism, that can form part of the administrative, legislative and technological accreditation process. However, on the basis of our conceptual framework, we hope for a broad discourse on implementation possibilities, which has to be closely connected to real-world application with various stakeholders, especially including universities. Therefore, higher educational institutions have to inevitably consider themselves to be part of the change process in quality systems.

Discussion questions for the EQAF Workshop

1. Do credentials hold an 'independent' identity complementing the statement of the learning they represent?

2. Which of these quality characteristics are important enough that they should be considered 'minimum', and possibly be reflected in the ESGs or other standards and guidelines yet tob e developed?

3. Would such a framework for credential quality help support innovation in credentials?

References

- European Commission (2015): ECTS Users' Guide. Luxembourg: Publications Office of the European Union. Retrieved from https://europass.cedefop.europa.eu/sites/default/files/ects-users-guide_en.pdf

- European Commission (2018): Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Digital Education Action Plan. COM(2018) 22 final. Retrieved from https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

- Ganzglass, E., Everhart, D., Hickey, D., Casilli, C., & Muramatsu, B. (2016). Quality Dimensions for Connected Credentials. Washington, DC: American Council on Education. Retrieved from http://www.acenet.edu/news-room/Pages/Quality-Dimensions-for-Connected-Credentials.aspx

- Grech, A. and Camilleri, A. F. (2017) Blockchain in Education. Inamorato dos Santos, A. (ed.) EUR 28778 EN. Retrieved from http://publications.jrc.ec.europa.eu/repository/bitstream/JRC108255/jrc108255_blockchain_in_education%281%29.pdf

- Nuffic (Eds.) (2016). The European Recognition Manual for higher education institutions. Practical guidelines for credential evaluators and admissions officers to provide fair and flexible recognition of foreign degrees and studies abroad. Retrieved from http://eurorecognition.eu/Manual/EAR%20HEI.pdf

- Nuffic (2018). Oops a MOOC! Dealing with eclectic learning in credential evaluation. Retrieved from https://www.nuffic.nl/en/publications/find-a-publication/oops-a-mooc.pdf

- Open Badge Network (2016). O7A1 Open Badges and Quality Management. Retrieved from http://www.openbadgenetwork.com/wp-content/uploads/2017/09/O7A1_OpenBadgesandQualityManagement_Digitalme_FINAL.pdf

- Orr, D., van der Hijden, P., Rampelt, F., Röwert, R., & Suter, R. (2018a): Bologna digital. Position paper. Retrieved from www.hochschulforumdigitalisierung.de/bologna-digital

- Rampelt, F., Birnkammerer, H., Röwert, R., Suter, R. (2018). Opening up Higher Education in the Digital Age. On the Potential to unite the Social Dimension and the Digitalisation of Higher Education in Europe. Retrieved from https://www.ehea-journal.eu/en/handbuch/gliederung/#/Beitragsdetailansicht/689/2433

- Rampelt, F., Niedermeier, H., Röwert, R., Wallor, L., & Berthold, C. (2018): Digital anerkannt. Möglichkeiten und Verfahren zur Anerkennung und Anrechnung von in digitalen Bildungskontexten erworbenen Kompetenzen. Arbeitspapier Nr. 34. Berlin: Hochschulforum Digitalisierung. Retrieved from https://hochschulforumdigitalisierung.de/sites/default/files/dateien/HFD_AP_34_Digital_Anerkannt.pdf

- Rampelt, F. & Suter, R. (2017): Recognition of prior learning – outcome-oriented approaches to the recognition and assessment of MOOC-based digital learning scenarios. In L. Gómez Chova, A. López Martínez & I. Candel Torres (Eds.), EduLearn 2017. 9th Annual International Conference on Education and New Learning Technologies (pp. 6645–6653). Retrieved from www.researchgate.net/publication/318681668

- Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) (2015). Brussels, Belgium. Retrieved from http://www.enqa.eu/wp-content/uploads/2015/11/ESG_2015.pdf

- The Economist (2017): Lifelong Learning Supplement. Retrieved from https://www.economist.com/special-report/2017/01/12/lifelong-learning-is-becoming-an-economic-imperative

- Witthaus, G., Inamorato dos Santos, A., Childs, M., Tannhäuser, A., Conole, G., Nkuyubwatsi, B., & Punie, Y. (2016). Validation of Non-formal MOOC-based Learning: An Analysis of Assessment and Recognition Practices in Europe (OpenCred). Retrieved from http://publications.jrc.ec.europa.eu/repository/bitstream/JRC96968/lfna27660enn.pdf