CONCEPT PAPER ON QUALITY ASSURANCE OF CREDENTIALS

IO 1 – Activity 1

OEPASS

Authors

Anthony F. Camilleri, Florian Rampelt

Contributors

Denes Zarka

Editors

Ildiko Mazar

Layout

Tara Drev

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The Oepass Consortium

Duale Hochschule Baden-Württemberg Heilbronn	DHBW	DE
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1 Introduction

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 degrees from accredited HEIs rarely raise concerns about recognition and portability, the quality of new forms of credentials is more questionable, due to the lack of commonly agreed standards, technologies and comprehensive criteria applied to their assessment. The OEPass project, therefore, set out to propose a framework for such analysis in the form of a set of quality characteristics for credentials.

This Concept Paper tries to establish a basic strategy to build up a quality assurance system to micro-credentials in higher education. This includes identifying and describing the key players of the field, the considerations that led to the selection of the suggested quality criteria as well as proposing an initial set of indicators.

1.1 Context – Digitaltransformation as catalyst for new credential types

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 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 at universities such as the MIT. But 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, therefore, may today offer several different types of credentials – ranging from certificates of MOOC participation all the way up to full degrees –, but these credentials would not have equal universal value and reputation.

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 OEPass Concept Paper therefore proposes a framework for such analysis in the form of a set of required elements and quality characteristics of credentials.

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

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

1.2 About OEPass

The OEPass project intends to address the challenges preventing official recognition of learning via OER and suggests creating a standard format for describing open education and virtual mobility experiences in terms of ECTS which:

- Addresses common criticisms (lack of trust) of open education, in particular with respect to student assessment and identity;
- Is scalable to hundreds or thousands of students through automatic issuing and verification of certificates;
- Can capture a wide range of non-formal and formal open education experiences.

1.3 Purposes of this Report

Since different credentials may have different value in the workplace and in academia for purposes of recognition, transfer and portability, this report introduces the concept of *quality assurance of credentials* whereby a high-quality credential would need to meet a set of minimum criteria in these areas.

The report writing started with parallel strands of activities involving partner consultations to agree on terms and definitions, literature review and report structure outlining, followed by subsequent stages of internal and external peer reviews, the adjustment and consolidation of the report content – based on the feedback received – and the finalisation of the present document.

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**.

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

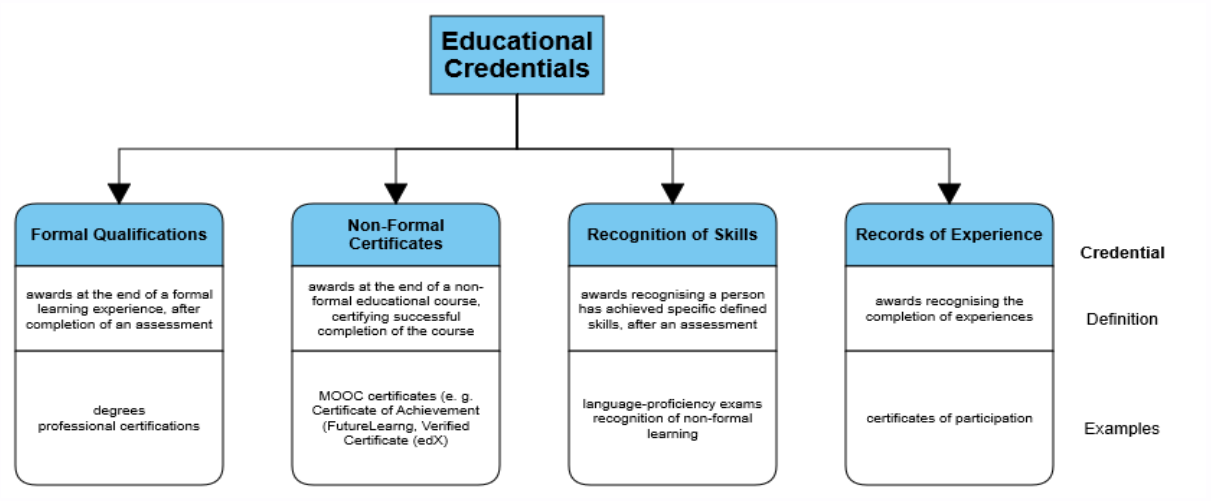

Figure 1: Types of Educational Credentials

For the purpose of the Concept 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 Roles in credentialing

Different key stakeholders interact differently with the same credential, therefore the quality of credentials has to be defined with all their interests and purposes in mind.A “role based” quality approach prompts us to distinguish between earners, issuers, consumers, endorsers and viewers. The key stakeholder groups that OEPass is concerned with could be characterised as follows.

- **Earners** are people who have participated in a learning process. Most of the time earners are face to face, part time or on-line students. In continuous professional development (CPD) we may also think of post graduate learners who hold bachelor, master or higher degrees, and participate in courses that require HE credentials as entry requirement.
- **Issuers**are the institutions that award credentials, in our case predominantlyhigher education institutions. In special cases issuers may have agreements to award mutual credentials (Joint or Dual Degrees) for the same learning experience.
- **Consumers** are those stakeholders who make decisions about the value and validity of credentials. Typically, they are either**Higher Educational Institutions** who require entry level credentials or prior learning experience or**recruiters andemployers** who make hiring or career advancement decisions based on their perceived value of a candidate’s credentials.

4 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 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 trustworthiness 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 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 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

	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

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).

5 Quality of a Credential

As a document, which proves the eligibility of the learner to qualify for something, it can be said to have 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 depends 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, 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 an easy to read graphical format • be issued in a standardised form, according to standardised processes	• allow for a credential to be issued in a widely-used and/or open format
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 • enable that the credential is easily shareable by the user

6 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, but it also has to consider 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.

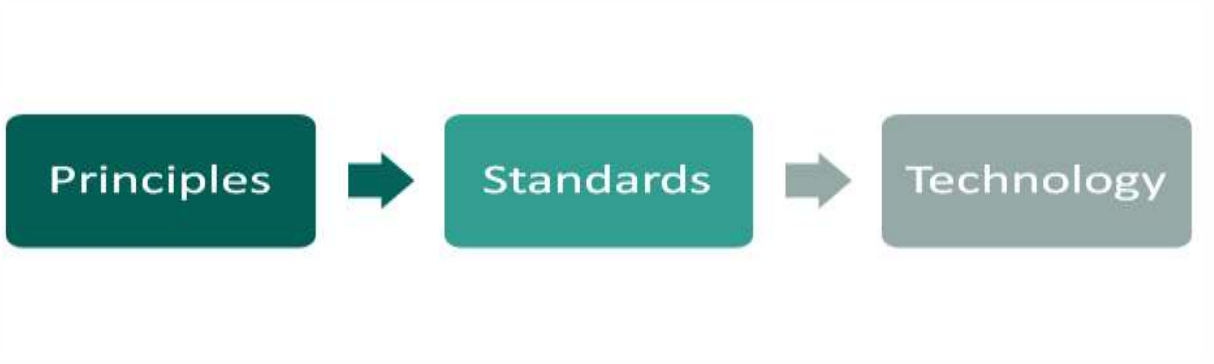

Figure 3: Key aspects of credential systems

Based on these considerations, we see the OEPass quality framework 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 does not only need 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.

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