



POLICY REVIEW OF OPEN BADGES FOR OPEN EDUCATION: WHAT DOES IT TAKE TO SCALE UP OPEN DIGITAL CREDENTIALS?

Ilona Buchem, Beuth University of Applied Sciences Berlin, Germany

Summary

The Internet and digital media have created unprecedented opportunities to connect, communicate and learn. In the digital age learners have abundant and diverse possibilities to engage in open learning in order to reach their personal, social, academic and work-related goals. Open learners can participate in open courses (e.g. MOOCs) and use open resources (OER) but they also need tools to recognise and communicate their open learning achievements on the web. Open credentials supported by open badges help learners aggregate learning achievements and evidence of learning from multiple sources in a portable, shareable and verifiable format. This policy review focuses on the question of how to scale up the adoption of open badges as building blocks of open education and open learning with the aims of capturing, recognising and communicating open learning achievements, such as acquired skills and competencies, across contexts and systems. The review builds on the discussion paper titled “Establishing Open Badges at Policy Level” published as one of the outputs of the Erasmus+ strategic partnership “Open Badge Network”. The review summarises key policy research findings and formulates policy recommendations for scaling-up the adoption of open, digital credentials in Europe and beyond.

Introduction

Improving assessment, recognition and validation of a full range of learning taking place in diverse learning contexts is one of the key challenges worldwide and is central to achieving education-related Millennium Development Goals (MDGs) and the objectives of the Education 2030 Framework for Action (FFA). The FFA reaffirms the vision of the worldwide movement for Education for All and sets out a new vision for education for the next fifteen years (UNESCO, 2016). UNESCO, UNICEF, the World Bank, UNFPA, UNDP, UN Women, UNHCR and other organisations have expressed their commitment to the Sustainable Development Goal 4 (<http://www.un.org/sustainabledevelopment/education>): “Ensure inclusive and quality education for all and promote lifelong learning” including “the provision of flexible learning pathways, as well as the recognition, validation and accreditation of the knowledge, skills and competencies acquired through non-formal and informal education” (UNESCO, 2016). Recognition of learning is considered as a key dimension of open education as proposed in the recent report by the European Commission’s Joint Research Centre (JRC): “Opening up Education: A Support Framework for Higher Education Institutions”. Much has

been undertaken in Europe to enhance recognition of learning in the recent years. A large number of frameworks and tools have been designed to support description, recognition and documentation of learning outcomes. This includes the Europass instruments, European and National Qualification Frameworks, ECTS (European Credit Transfer and Accumulation System), ECVET (the European Credit System for Vocational Education and Training) and recently ESCO (European Skills, Competences, Qualifications and Occupations).

However, despite the numerous frameworks and tools, a common technology which would allow to describe, recognise, validate and communicate learning outcomes from and across multiple contexts, experiences, interactions, environments and systems – thus taking into account how learning happens today, in the digital age – has not been established yet. Especially in context of open education, a policy response is missing about how learners can have their open learning outcomes effectively recognised and validated and share them on digital media to unlock new opportunities for education, employment, collaboration and self-development.

A technology capable of supporting such open, digital credentialing is the Mozilla Open Badge Infrastructure (OBI). OBI is an interoperable, open source technology which supports recognition, validation and communication of learning outcomes. Open badges as elements of the OBI have been used as open, digital credentials to recognise learning achievements and visualise learning pathways. Open badges can be easily shared by learners across the web. Schools, universities, employers and informal learning providers globally are already using open badges to capture life-long and life-wide learning which might have been unrecognised before. Open badges are also a global community of practice engaged in rethinking and transforming credentialing practices in line with the worldwide movement for open education.

This policy review focuses on the question of how to scale up the use of open badges as building blocks of Open Education aiming at capturing, recognising and communicating open learning across contexts. The review builds on the discussion paper titled “Establishing Open Badges at Policy Level” published in July 2016 as one of the outputs of the Erasmus+ strategic partnership “Open Badge Network” (<http://openbadgenetwork.com>) (Buchem, van den Broek, & Lloyd, 2016). The review presented in this paper starts with the background information about open badges, the Open Badge Network project and the rationale for policy support for open credentialing. It then presents research questions, methodology and selected results from policy research conducted with policy makers in Europe. Finally, the review formulates policy recommendations for scaling up the adoption of open credentials in Europe and beyond.

Background and rationale

The Internet and digital media have created unprecedented opportunities to connect, communicate and learn. In the digital age learners have abundant and diverse possibilities to engage in open learning in order to reach their personal, social, academic and work-related

goals. Open learners can participate in open courses (e.g. MOOCs) and use open resources (OER), but they also need tools to recognise and communicate their open learning achievements on the web. Open credentials supported by open badges help learners to aggregate learning achievements and evidence of learning from multiple sources in a portable, shareable and verifiable format. Open Badges are based on an open standard developed by Mozilla and have been specifically designed to be used as digital tokens or markers of learning and accomplishment (Casilli & Knight, 2012). Every open badge contains metadata about the learner, the badge description, the issuing organisation, the date it was issued, criteria defined as necessary to earn the badge, the web address that links to evidence and other information. The metadata travel with the badge once it is issued thus making it possible to process and recognise each open badge outside the issuing system (Grant, 2014). In this way, open badges enable representation, verification, and communication of skills and knowledge acquired in any digital and non-digital learning environment. Open badges have been used in many different ways, e. g. (a) to recognise skills, achievements, memberships, engagement, (b) to assess learning through summative and formative assessment, (c) to motivate learners, (d) to provide orientation through setting and visualising learning goals and tasks, and (e) to study learning based on the information contained in open badges (Casilli & Hickey, 2016).

Open badges have been supported by a number of initiatives and organisations around the world, most notably the Mozilla Foundation and the MacArthur Foundation (<http://openbadges.org>), the Badge Alliance (<http://www.badgealliance.org/about>) and the IMS Global in the USA (<https://www.imsglobal.org/pressreleases/pr150421.html>). In Europe, the Open Badge Network (OBN – <http://www.openbadgenetwork.com>) – a strategic partnership founded by the Erasmus+ program – has been dedicated to promoting open badges as a way to recognise life-long and life-wide learning. One of the key endeavours of the Open Badge Network is to formulate policy recommendations for open, digital credentialing with open badges to enhance recognition and validation of diverse forms of learning. Recognition and validation of non-formal and informal learning is one of the key topics in the European Agenda for modernising (higher) education (Cedefop, 2015). The recommendation of the European Council 2012 calls for European cooperation in validation of non-formal and informal learning and national arrangements “allowing individuals to value and make visible the outcomes of learning at work, at home, during leisure time and in voluntary activities” (Cedefop, 2015). The European Guidelines for Validating Non-formal and Informal Learning published by Cedefop in 2015 recognise validation as an important element of national policies on education, training and employment and emphasise the bridging character of validation. Also, the EC JRC 2016 report titled “Validation of non-formal MOOC-based learning: An Analysis of Assessment and Recognition Practices in Europe (OpenCred)” addresses digital credentialing with open badges and concludes that recognition of open learning is a key issue for policy development in view of the continuing rise of MOOCs and other forms of open education (Witthaus et al., 2016).

The policy recommendations in the Erasmus+ Open Badge Network build on policy approaches which address the changing landscape of education and credentialing in the digital age. The first discussion paper titled “Establishing Open Badges at Policy Level”, published in July 2016, emphasises the need for cooperation of key stakeholders and a harmonisation of a diversity of views and approaches related to the modernisation of educational credentialing and its progression towards open, digital credentialing (Buchem, van den Broek, & Lloyd, 2016). The OBN policy paper encompasses the results of the first cycle of policy recommendations. The forthcoming white paper will use key discussion strands and responses to the first publication to advance policy recommendations as part of the second cycle in 2017. Following up on the first OBN paper, the policy review presented here summarises key policy research finding and formulates policy recommendations for scaling-up the adoption of open, digital credentialing practices in Europe and beyond.

Research questions and methodology

Educational credentialing is a phenomenon which can be looked at from different perspectives, including economy, sociology and psychology (Buchem, van den Broek, & Lloyd, 2016). From an economic perspective, educational credentials fulfil a signalling function: Job-seekers select credentials as signals to maximise their employment opportunities and employers interprets the credentials of job-seekers as signals to distinguish one applicant from the other thus narrowing the information gap (Spence, 1973). From a sociological perspective, educational credentials contribute to the emergence of status groups, stratification of occupational and educational pathways and the development of credentialing markets controlling entry barriers to employment (Brown, 2001). From a psychological perspective, educational credentials play an important role in personal management and recruitment practices, especially as predictors of future work performance (Buon & Compton, 1990). Open badges provide a chance to rethink educational credentialing, posing such questions as:

- What should be recognised as learning in the digital age, in which learning takes place anywhere, anytime, on any device and in connection to anyone on the planet?
- Which methods are appropriate to recognise and make learning visible in times of increased personal responsibility for career development (employability) and flexibility of work (mobility)?
- What type of a social and technical system and tools for assessing learning, issuing, receiving and sharing credentials across contexts and environments are helpful in the digital age?

The key question of the policy research conducted in the Erasmus+ Open Badge Network (OBN) in relation to the policy dimension was how open badges as instruments of open, digital credentialing are perceived by policy-makers, especially if and how open badges may be used to recognise and validate (open) learning.

The methodology of policy research conducted in the Open Badge Network project encompasses (a) secondary research, such as policy reviews, collations any synthesis of existing policies and credentialing practices, and (b) primary research including online surveys and onsite consultations with selected policy makers. The results presented in this paper outline selected findings related to the aspect of scaling up the adoption of open badges. These results come from the primary research conducted in the first cycle. The following five research instruments were applied in the first half of 2016 to elicit the opinions of policy-makers:

1. European Policy Online Survey conducted with selected European policy makers at national and supranational levels (April – June 2016) – <http://goo.gl/forms/aTMDhvHEyjEEbVbI2>,
2. Germany Policy Online Survey focusing on establishing Open Badges at policy levels in Germany (March – April 2016) – <http://goo.gl/forms/oM3EpotjtioGc3j52>,
3. Consultations with representatives of the European Commission, DG EMPL in Brussels (May 2016),
4. Consultations with the Europass Working Group on Innovation (June 2016),
5. Consultations with the National Project Manager of PIAAC Italy, Programme for the International Assessment of Adult Competencies (July 2016).

Both online surveys, i.e. the European and the German policy survey were conducted using a similar set of questions developed jointly and iteratively within the Open Badge Network partnership. Two consultations, i.e. EC DG EMPL and the PIAAC consultations, were conducted as in-depth, semi-structured interviews with selected policy-makers using the set of question from the online surveys as an interview-guide. The Europass consultations were conducted in form of unstructured interviews to first develop a better understanding of the topic in focus, i.e. possible links between Europass instruments and Open Badges. All three consultations were conducted by different interviewers from altogether four OBN partner organisations. The online surveys were led by one partner organisation with other partner organisations contacting selected policy makers at the national level in the EU countries represented in the OBN partnership.

Findings and Synthesis

The European survey on policy recommendations for open badges was filled out by altogether 21 respondents representing different policy-making organisations from the following countries: Germany, Hungary, Italy, Netherlands, UK, Poland, Poland and Switzerland. There was one responded from South Africa, thus extending the reach of the survey. The German Online Survey was conducted as part of a master thesis at Beuth University of Applied Sciences Berlin with altogether 11 respondents from key policy making organisations including the Federal Ministry of the Interior (BMI), the Federal Institute for Vocational Education and Training (BIBB) and the German Institute for International Educational Research (DIPF). Respondents mostly represented organisations from the field of educational

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policy. Most respondents represented a governmental policy making organisation at a national level. The information about the respondents to both surveys is summarised in Table 1.

Table 1: Respondents to the two online surveys on policy recommendations for Open Badges

	European survey	German survey
Sample size	n = 21	n = 11
Organisation type*	Governmental – 30% Non-governmental – 25% Non-for-profit – 25%	Governmental – 64% Non-for-profit – 18% Non-governmental – 9%
Policy area	Education policy – 45% Research policy – 25% Employment policy – 15%	Vocational education policy – 36% Education and research policy – 27% Employment policy – 9%
Policy level*	National – 55% Communal – 25% Sectoral – 20% Global – 15% European – 10%	National – 91% European – 64% Regional – 36% Global – 36% Communal – 18%

*Multiple choice item

The collated results related to selected 3 out of 10 questions from both online surveys are outlined below:

(1) What is your view on the recognition of competencies in your country/region?

The answers show that the recognition of competencies in Europe differs depending on the country and context. There is a tendency towards a positive perception of recognition of learning in formal settings, followed by mediocre recognition in non-formal settings and a negative perception of recognition of learning in informal settings. The results are consistent in both online surveys, offering an interesting comparison of a European and a national perspective about the recognition of learning in different settings. This comparison shows that there may be different perceptions in different countries, e. g. a somewhat better perception of recognition of learning in Germany. The results indicate that open credentialing with open badges aiming at enhancing the recognition of life-long and life-wide learning may be particularly useful in the area of *non-formal and informal learning* and that there is a need for harmonisation of recognition at the European level. It is important to notice that non-formal and informal learning make up for most of open learning (cf. three types of open learning by Witthaus et al., 2016; p.10, i.e. Open Universities, Massive Open Online Courses, and Open Educational Resources). The clustered results related to the perception of recognition of learning from both online surveys are summarised in Table 2.

Table 2: Recognition of learning from the perspective of different policy-making organisations in Europe

	European survey	German survey
Formal: Recognition of learning in formal settings	good – 45% average – 40% poor – 15%	good – 73% average – 27% poor – 0%
Non-formal: Recognition of learning in non-formal settings	good – 5% average – 70% poor – 25%	good – 0% average – 64% poor – 36%
Informal: Recognition of learning in informal settings	good – 15% average – 30% poor – 55%	good – 9% average – 64% poor – 27%

Scale: 1 – 6 (1 *very good*, 6 *very poor*)

Clustered results: *good* (1 – 2), *mediocre* (3 – 4) and *poor* (5 – 6)

(2) How aware are you of Open Badges? Would you recommend Open Badges to other organisations?

The answers show that most respondents in the European survey are somewhat aware of open badges but are not sure how open badges can be used. Also a large part of respondents to the European survey are well aware of Open Badges and their use, while most respondents to the German survey are not aware of open badges at all (cf. Table 3). Despite the differences in the level of awareness, most respondents (72.5% on average) consider open badges as useful tools for recognition of learning, especially for groups at risk including refugees. These results indicate that there is a need for a policy response about how to scale up open credentialing to enhance recognition of learning, especially in view of Education for All including migrants, refugees and asylum-seekers.

Table 3: Awareness and perceived utility of Open Badges by policy-making organisations in Europe (OBN surveys 2016)

	European survey	German survey
Awareness of Open Badges	Not aware at all – 24% Aware, but not sure how to use – 38% Well aware and know how to use – 33% Other – 5%	Not aware at all – 55% Aware, but not sure how to use – 27% Well aware and know how to use – 18% Other – 0%
Useful for recognition of learning	yes (in general) – 90% yes (risk groups/refugees) – 86% no – 10%	yes (in general) – 55% yes (risk groups/refugees) – 73% no – 9%

(3) What are your recommendations for establishing Open Badges as recognition instruments in Europe?

The policy recommendations from respondents to both survey mostly focus on intensifying communication, dissemination and research on open badges. Some example recommendations include:

- Make open badges official in the EU, make them vastly used by law or cooperation with popular services like social media networks.
- Create a link with the European Guidelines for validation of non formal and informal learning, as well as with national systems for validation of non formal and informal learning, link to existing regulations.
- Provide research-based evidence that Open Badges are a reliable predictor of competences.
- Gain political support and involve stakeholders and decision-makers to gain reputation and recognition.
- Win support of more educational institutions/organisations by advertising and providing information in the country's home language.
- Provide information for employers about the meaning of Open Badges, to make it possible for them to appreciate the skills represented by an applicant's Open Badge.
- Provide quality assurance and global quality standards.

The last point, quality assurance, has been addressed by policy makers as a dilemma. To quote one of the respondents: "For providers it is attractive to define their own criteria for badges (for example for the MOOCs); for learners and employers on the other hand, reliable and comparable systems would be desirable." These results indicate that there is a need for policy support in scaling up the adoption of open badges, especially through gaining support of key stakeholders in the area of education and employment, but also conducting research to provide the necessary evidence and harmonising efforts on quality assurance.

To complement the results from both online surveys, the results of onsite consultations with selected representatives of policy-making organisations are summarised in Table 4 below:

Table 4: Recommendations for establishing Open Badges in Europe, results of the OBN policy consultations 2016

	Key policy recommendations for Open Badges
European Commission, DG EMPL	Link Open Badges to key EU instruments such as Europass, ESCO and EQF and NQFs, especially the description of Learning Outcomes (LO) linking to LO in the criteria field. Link to occupational standards and other definitions of competences in Open Badges.
Europass, Working Group on Innovation	Link Open Badges to the Europass next development in the area of "Personal Environment" which will include data verified by third parties like the endorsement feature of Open Badges. Develop an "Issuing Environment" built around ESCO and ECVET standards.
PIAAC, National Project Manager Italy	Invest a lot in communication, have a robust quality assurance and scientific foundation. Promote Open Badges to complete portfolios or CVs, especially for young people, refugees, and in general for the recognition and certification of non-formal and informal learning.

Conclusions and Implications

The following conclusions for scaling up the adoption of open badges as tools for open digital credentialing supporting the recognition of open learning, especially in non-formal and informal settings, are based on the results of the primary and secondary research in the Open Badges Network project (Policy Output).

Open credentialing based on open badges can help overcome some key challenges of the current educational credentialing systems, including: (a) a gap between what a credential represents and what can be performed – by providing evidence and endorsement attached to badges, (b) a problem of verification of the accuracy of a credential – by metadata embedded into each badge, and (c) discrepancies between educational credentialing and the world of work – by designing open badges to act as bridges between academic and business discourse.

The key policy implications for scaling up the adoption of open badges for open digital credentialing include:

- Policy response towards open digital credentialing is necessary to enhance recognition of open learning.
- European frameworks and standards, such as ESCO, EQF and Europass, should take open badges into account as instruments with a potential to accelerate the uptake and reach of own objectives.
- Policy support for research and development in the area of open digital credentialing systems is needed to advance current instruments and adjust them to European needs and

concepts, such as the ESCO taxonomy of learning outcomes which can be integrated with open badges.

- European policy makers at national and supranational levels should support and promote open digital credentialing to continue increasing emphasis on competence-based learning and assessment.
- European policy makers should support and promote open digital credentialing to continue increasing emphasis on life-long and life-wide learning including the recognition of informal and non-formal learning.
- European policy makers should support and promote open digital credentialing for better socio-economic outcomes and equal opportunities in education and employment including migrants and refugees.
- European policy makers should support and promote open digital credentialing to enhance the availability of tools that assist understanding and comparison of skills, competencies and qualifications.

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