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Open Badges in Education and Training in Europe

the Open Badge Network and ReOpen projects

Introduction

The article gives an overview of open badges, a type of micro-credentials spreading lately in Europe applied to recognize non-formal and informal learning actions and outcomes. Open badges are viewed by many experts as the greatest potential for a reliable presentation of skills gained outside the formal education system, in many cases in adult learning. Specifically, open badges very often record and prove the acquisition of so called 21st century skills (i.e. communication, creativity, cooperation and critical thinking) considered by a large majority of the employers as a significant aspect of selection.

What exactly digital open badges are? How, by whom and to whom are they awarded? How is the validity of information and the quality of content represented by the badges assured? To what extent are the employers aware of the value of open badges, and how much individuals know how they can capitalize on the collection of their badges?

The article attempts to offer some views on the above questions by structuring the relevant findings and outcomes of the Open Badge Network and the ReOpen projects.

The open badge movement

Shift in the learning system: new forms of recognition are needed
The world is experiencing a major shift in the learning system. Learners develop their skills and competences in a variety of learning environments, and not only in the context of formal education (for example schools and universities). Economists of innovation recognise knowledge, and therefore learning, as the most important resource in today's society. However, the formal education system seems unable to cope with these rapid societal changes. Companies and institutions struggle to find the appropriate skills for their job vacancies, and at the same time individual learners lack tools for certifying the whole set of capacities and experiences that they own, very often gained outside the formal education and training system. The previous forms of recognition of learning are becoming obsolete, and so are the referencing definitions and taxonomies related to education and training. *The Open Badge system tries to address these issues by providing a flexible and adaptive technology of certification of competences, which could be potentially applied to all learning environments.*

However, in order to become widely recognised as a credible certification method, open badges must resolve some critical issues, which still represent a source of debate among experts. These are related to the *reliability, validity and quality of the credentialing with open badges.*

Concept of open badges and the open badge ecosystem

What are open badges?
An open badge, a novel form of digital credential consists of a badge image connected with a set of meta data - reflecting the collection of knowledge, skills, values and attitudes (in short: competences) an individual has acquired and/or is able to demonstrate after completion of a learning process. In most cases the learning process takes place in an open non-formal or in informal learning environment. It can attest a one-time or reoccurring participation at events (workshop, short-term

training, conference, webinar etc.) both as participant or as a facilitator, speaker. Other type of badges may be issued to certify the attendance or completion of a course, which may take place again in a non-formal or even in formal circumstances.

Badges- what for?
Badges can be designed for practically anything, e.g. for:

- interest and engagement;
- attendance or participation;
- membership;
- knowledge or dispositions;
- formal certification (degrees, certificates);
- learning, achievement of skill or competency on various levels of proficiency;
- affiliation;
- project-complete;
- credential.

Badges that exist only in digital form are called digital badges. The idea of digital badges is a relatively recent development drawn from research into [gamification](1)[1]. As game elements, digital badges have been used by organizations such as [Foursquare](1) and [Huffington Post](1) to reward users for accomplishing certain tasks.[2]

In 2010 education providers began viewing digital badges not as game like elements but also as tools to certify learning achievements. Examples of instructional sites using digital badging systems include P2PU and Khan Academy.

Digital badges can be created and issued by anyone: schools, individuals, online spaces, cultural and civic institutions, community and professional organizations. Digital badges are now widely used in education.

Why do we use badges in education?
Knowledge and skills should be recognized throughout learning. Digital badges are symbolic (visual) representations of an accomplishment, skill, quality or interest that can be easily shared and communicated across contexts such as academic and work-related contexts (Knight, Erin & Casilli, Carla (2012). Digital badges are *image files available online*, contain metadata including *links* to help e*xplaining the context, the meaning, the process* how they were earned as well as *the result of the activity*. In a concise form, a digital badge is an online visual representation of a skill someone has earned. Application of digital badges is a new form of digital credentialing primarily in open non-formal learning, although there are also attempts to use digital badges in formal education as well.

The learner can acquire knowledge and skills from various sources and in various ways, from attending a training institution, through online learning or just taking part in volunteering. If these achievements are awarded by open digital badges, these badges can be collected, stored and displayed in his/her Badge Backpack. The Badge Backpack is a digital tool to store/display the Open Badges someone has earned, and makes it easy to share them between platforms, anywhere on the web.

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[1] https://en.wikipedia.org/wiki/Digital_badge
[2] https://en.wikipedia.org/wiki/Gamification

The badges collected in the Badge Backpack can then be uploaded to his/her personal website, or to various social media channels like Facebook, Twitter, etc. These appearances in the digital space might unlock new possibilities, new job opportunities or might clear the way to lifelong learning.

Digital badge ecosystem
The actors of the badging process (learners, training providers, employers, accrediting organizations, elements of the technical background) and their connections form the **digital badge ecosystem** sometimes called ecosphere or badgeosphere.

Badges are usually _issued_ by some kind of a learning provider, which can be both an individual or – more often – an organization and are awarded/issued to the badge _earner_. Earners are - in most cases – individuals who completed a learning action (participated at an event, completed a course etc.), but in special cases earners can be organizations, which are certified, quality assured from a specific aspect (e.g.: being a high quality training provider).

A **badge issuer**, the learning experience provider, defines, creates and assesses learning achievements and competencies, through the badges they issue (Everhart et al., 2016). Badge issuer can be any individual or organization offering educational programme, after-school programme, online course or open courseware, community of practice, professional association, teacher, tutor, coach etc.

After the badge issuer defines the criteria the learner or user needs to meet in order to receive the badge, and establishes the processes and infrastructure for issuing badges, the process of badge delivery can begin. Every user or learner who satisfies the criteria is a **badge earner**. The learner might accept the badge, but also have the right to decide not to share it further. In the simplest case the offer is sent to the learner's e-mail address identifying the **earner**.

The earned badge than can be stored in the individual's *backpack* (with all other badges previously acquired) and then displayed at different platforms for **viewers/consumers**, who are interested in earner's accomplishments.

The individual can display different badges in different locations, depending on what skills and knowledge are important to the prospective **viewer/consumer**, usually employers and administrators of education institutions. After the badge is displayed, the badge **viewers/consumers** can easily access the details and find more information about the badge such as badge description, issuer, criteria, etc. The **viewer/consumer** should be able to check the identity of the **issuer**, the **earner** and the evidence behind the badge. This property of the badge is powerful and has the potential to change the credential system.

The badges earned are then placed in the "backpack" of the earners, where the image and the meta-data of the badges are kept and can be viewed by the _viewers/consumers_, who are usually employers interested in the qualities of an applicant. The "backpack" is a platform of presenting the collected badges, it is a _displayer_ of the badge items. There are several different displayers in the market (Mozilla Backpack, Open Badge passport etc.) as well as there are more than one _developer_ platforms (Open Badge Factory, Open Badge Academy) where the badges can be created by the issuers.

One of the questions in focus of the debates about open badges addresses the issue of credibility. Why should one trust a badge? How can we now be sure that the information behind the badge is valid, and that it certifies high quality standard. One answer to this question is the evolution of the endorser role in the badge ecosystem. The idea of the endorser is to bring quality assurance in the badge system, by certifying that the badge issuer is trustable and information behind the badge represent real value.

Although, endorsers in the badge system may strengthen the credibility of the badging these type of actors are not yet widespread in the badge ecosystems.

Endorsement adds a layer of external validation that further supplements a badge's metadata and can help earners to understand which badges might have greater social or professional currency, leading them toward greater personal or professional satisfaction.[3] Organizations, who examine and acknowledge the value inherent in badges, can clearly recognize and publicly acknowledge their values through badge endorsement and indicate their conceptual alignment with external organizations are **badge endorsers** (Everhart et al., 2016). Endorsement is a novelty (IMS Global Learning Consortium introduced it in December 2016) and has the potential to change how badges are used, understood, and trusted. Shortly after digital badges were introduced, there was a discussion among digital badge specialists about how to "badge the badger", in order to give badges greater credibility. The concept of badge endorsement is in operationalization of this and can significantly improve the process of recognition of learning.

The relationship among the actors of the digital badge ecosystem can be represented by the following scheme.
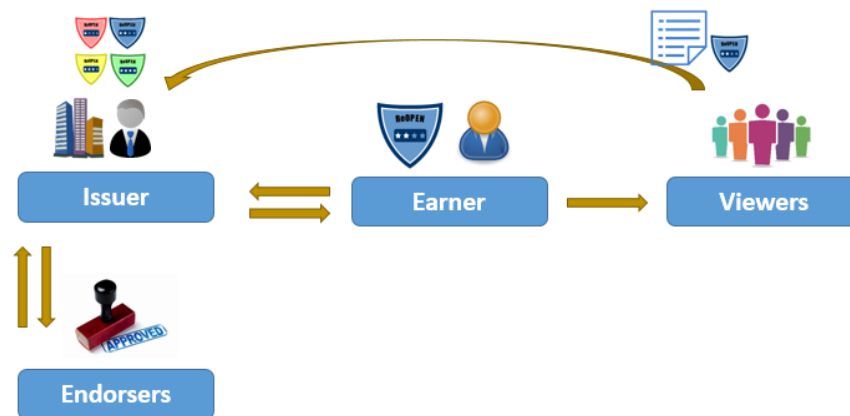

Figure 1. The Open Badge ecosystem[4]

From the description above we can summarise the key actors of the digital badge ecosystem as:[5]

- **Issuer**: the entity creating, issuing, and awarding badges to earners (e.g., educational institutions, government agencies, employers).
- **Earner/recipient**: the learner, the person receiving the badge (usually identified by an e-mail address).
- **Viewer/Consumer**: the person or institution who/that views someone's badges and evaluates their value, possibly deciding whether the person having the badge is qualified for the post or for enrolling into the course in question.
- **Endorser**: mostly used in case of badges credentialing skills in which the possession of the skill should be verified by others (or other institutions) who/that undoubtedly has competence to do so. Sometimes used for the entity that evaluates the badge holder's skills and knowledge demonstrated by her/his badges. Endorsement ....allows third-party organizations to publicly indicate which badges are aligned with their values — those that are the most meaningful and useful to them. It adds a new metadata component to the Open

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[3] http://www.badgealliance.org/glossary
[4] https://slideplayer.com/slide/13443411/
[5] http://www.learningoutcomeassessment.org/documents/Assessment_in_Practice_Digital_Badges.pdf

Badges standard and defines the structure for rich, well-defined endorsement information and criteria such as alignment with standards, uses for the badge in the context of the endorsing organization, description of evidence of learning and assessment techniques the organization values[6]

Processes in the Open Badge ecosystem are supported by:

- Developers: individuals or groups creating applications that are used for design and issuing of badges (e.g. Mozilla Open Badges, Passport, Open Badge Designer, Badgecraft, Moodle, etc.)
- Displayer: the system used for badge verification and display (e.g. Mozilla Backpack, Facebook, LinkedIn, e-Portfolios, Passport).

Meta-data of open badges
To understand what is behind the image of the badge, what specific achievement it certifies one should look into the badge attributes, called metadata of the badge.

The badge attributes, i.e. badge's description and criteria are inseparable part of the badge. The following details have to be defined and included during development of a new digital badge[7]:

Badge Details	
Name	Badge name should be short and the content of the achievement should be easily understandable.
Description	Description should provide the details of achievement: describes the context, specifies the achievement, refers to completed tasks, and explains the assessment procedures. Useful tips on how to write a good badge description are available [here](#)[8].
Image	In a process of preparing the image, one should bear in mind that image will be the main representation of the badge. It should be simple, without too many details but still interesting enough for someone to see the rest of the information.
Issuer Details	
Name	Name of the issuer is a name of the individual, entity, or organization that issued the badge.
Contact	Issuer's contact information.
Badge Expiry	
Expiry Date	This is the information about the expiry date of the badge if there is one. Options are: never, fixed data, relative date. This date is usually set for certificates that need to be re-accredited after a period of time.
Criteria and resources	
Criteria	Criteria provides information about the task needed to be completed by badge earner to receive a badge. There are several options, among others: - manual completion by role: if using this option, we have to choose the role we want to be able to award the badge; - course completion: for using this option, tracking must be enabled for the course; - activity completion: like for the previous option, the course tracking must be enabled. The selected criteria will be displayed among all the other digital badge data. In Moodle, for instance it means that all activities connected to the badge will be displayed. If you want to control what is displayed, use Access restrictions and Activity completion so that all other activities will lead to the one that the badge will depend on.

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[6] http://www.badgealliance.org/endorsement/
[7] http://reopen.eu/learn/course/view.php?id=3
[8] https://www.badgecraft.eu/en/open-badges/understand-badge-meta-data/howto-write-description

For illustration the image below shows the meta-data behind the eLene4work project explore badge.

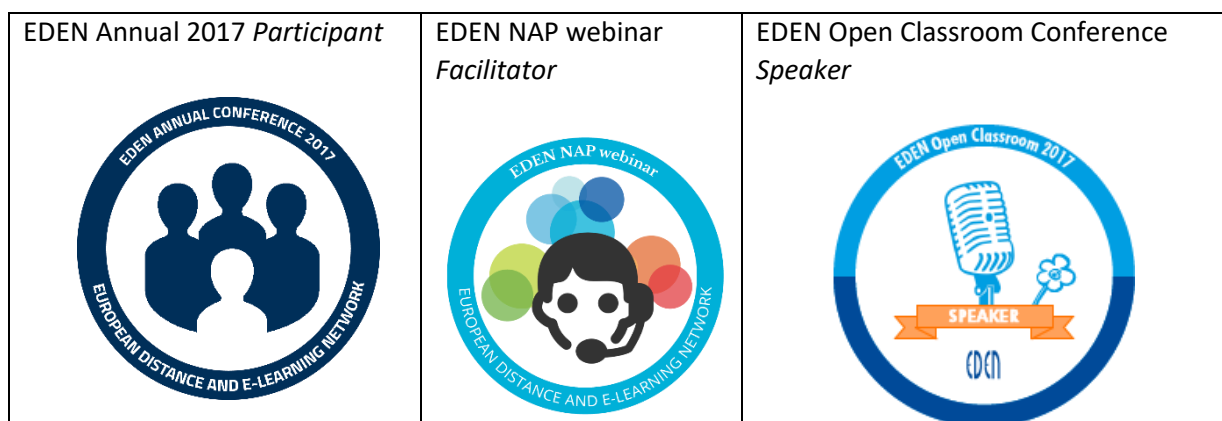Text highlighted bold are hyperlinked to the resources connected to the learning activity.
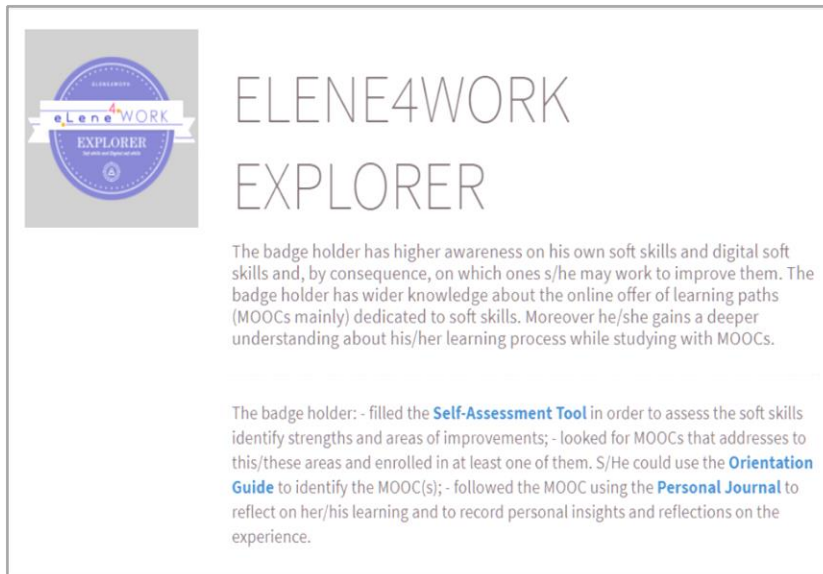
The actual badge can be viewed at the following link: **Elene4Work Explorer badge**

Besides reflecting the learning outcomes, the badge gives information about the open non-formal learning activity / course provider and about the activity itself. The information about what the badge incorporates is presented in the meta data of the specific badge which provides ground for the quality assurance of this type of certification.

Badge examples –EDEN badges
The European Distance and E-learning Network (EDEN) is a forerunner in issuing badges attesting conference, workshops, trainings, webinars facilitation and participation. Since 2015 EDEN issued nearly 3.000 open badges. Below we show some examples of badges issued by EDEN in 2017.

EDEN Annual 2017 *Participant*	EDEN NAP webinar *Facilitator*	EDEN Open Classroom Conference *Speaker*

Badges can certify a continuous piling of learning, in other words stacking the learning activities/outcomes. For example attendance of several number of webinars organized during the European Distance Learning Week is attested by gold, silver or bronze badges certifying the presence at five, four, or three virtual event respectively. This nature of badges is referred to as stackability and has importance in the motivation of the learners.

EDLW 2017 participant – GOLD	EDLW 2017 participant – SILVER	EDLW 2017 participant – BRONZE

The top 10 badges issued were the following:

Values of and risks related to the application of open badges

Values for individuals

Individual users may benefit from earning Open Badges in various ways, in their education, in their work life and in their leisure activities. The recognition of soft skills, prior learning and abilities developed in informal and non-formal environments may increase employability and acknowledgement of skills by the employers, while also facilitating introduction into new working

places and positions. Students may add this set of credentials to their resumes at the end of a degree and be recognised for their extra-curricular activities. Open Badges may also help transform talents and passions into actual competences and therefore open new job opportunities. Individuals can gain control over their education pathway and easily compose and display their digital resume on the web, collecting Open Badges they earned from different sources (schools, online courses, external organisation).

Open Badges may find useful applications also in the context of promotion of citizenship and social integration, for example in the case of recognition of skills of migrant workers or academics. Citizens may be rewarded with Open Badges for the activities within their community, which would in return increase the group cohesion and their sense of belonging.

However, individuals will play an important role in the future of Open Badges also as designers and issuers. The Open Badges technology is free and relatively easy to access, which gives a chance to independent communities of learners to develop and award their own set of Open Badges, using their own criteria and competency frameworks. However, an opposite view argues that this could carry some risks. Individual issuers can use Open Badges to provide organisations and institutions with suggestions and benchmark their needs. Innovative and responsive organisations will build systems of Open Badges that consider contributions from a grassroots level. In general, the response of the final consumers of Open Badges is fundamental to reach the critical mass for the technology to be widely recognised. Beside this, in the paper, we discuss how the "value" of a single Open Badge is closely related to the users' perspective and to the establishment of networks of trust among Open Badge issuers, earners, companies, institutions and education providers. The "endorsement" feature contributes to achieving this result by enabling Open Badges to be peer-reviewed. The future of Open Badge will depend on the engagement of the whole community, including individual users, in the construction of value and trust.

"What is the value of Open Badges?" might be the most frequently asked question, when introducing Open Badges to a new audience. Similar to paper certificates, this is not at all catered for automatically. The value of different Open Badges will vary enormously depending on a number of issues, just as diplomas from different organisations may have different values to different audiences. For example, a diploma from the University of Cambridge is appreciated more than a diploma from an "average" university. A diploma of any legitimate university is infinitely worth more than a diploma from a so-called Diploma-Mill. (Diploma-Mills are shady businesses that produce impressive looking diplomas from non existing fake universities, that can be bought through the internet). As soon as Open Badges become mainstream, one can expect Badge-Mills popping up too. Value and quality of an Open Badge come from the metadata embedded in the badge and depending on the complexity of evidence provided and assessment applied may be a more or less valuable way of proving a recognition or documentation of an achievement, skill, competency or any similar quality.

Carla Casilli (Casilli, C. 2015) identifies a spectrum of value as follows:

- institutional value - intended by the issuing institution;
- social value - recognised in academic, professional, cultural and community contexts;
- generic value - rooted in the desire for a standard currency;
- personal value - perceived by the earner;
- consumer value - attributed by the audience or the "market",

These five different value types are described in relation to Open Badges below:

Institutional value
Institutions that design Open Badges and badge systems, have to invest time in doing that. There is no investment without the idea of creating value. This value can lie in the professional development of the staff. That starts often with charting the competences needed for different roles (if not already present, which is often the case). For the issuing institution, badges also create value, by enhancing an institution's reputation and visibility. Open Badges can be published on the institution's website and seen by a wider audience when shared by the earners. This creates an institutional value, for example in relation to image/reputation building or transparency/public relations of the issuing organisation.

Social value
Social value is related to group, community or society perception. Carla Casilli defines social value as follows : "The social value of a badge is complex. There are a number of ways that badges contain and contribute to social value, including: academic value; professional value; cultural value; and group value. I could probably write a few long paragraphs about each of these types of value but in the interests of brevity and because you're smart, try thinking through those on your own. Note, however, that somewhat perversely, the group value of badges appears to be the most underappreciated of all of the possible values. Considering that society is predicated on the concept of in-groupness and out-groupness, this under-appreciation always strikes me as odd. Badges are indicators of community and consequently carry the values that are related to the communities in which they circulate." (Casilli, Carla 2015) Clearly, the value of a badge system increases also through recognisability, which will be much larger within a local or regional territory.

Generic value
Open badges are a new "currency for learning" and in this way have a generic value as digital credentials. The value of Open Badges as a new currency is still evolving. Currently traditional (non-digital or paper credentials are perceived to have value and there seems to be a mutual acceptance of what traditional credentials really testify. The acceptance of traditional credentials is usually not based on a profound understanding about the level, quality and amount of the achievement certified by a traditional credential, but is based on social and psychological mechanisms in which evaluators use traditional credentials as shortcuts to tentatively estimate skills, competencies, achievements etc. For example, it is common to use traditional credentials such as academic diplomas, academic degrees, certifications or licenses for recruiting and employment decisions with recruiters/employers relying on the face value of a traditional credential and not questioning or investigating further what skills, competencies, achievements exactly are recognised or what type of assessment has taken place to issue the credential. This phenomenon is known as credentialism as has been extensively described in sociology (e.g. Collins, R. 1979). Open Badges offer an opportunity for a more transparent and information-richer recognition compared to traditional credentials as they may be designed in such a way as to inherently include the information about the what exactly is recognised, based on what criteria, following which assessment procedures, even including evidence and endorsements. Open Badges as information-rich, digital credentials should be therefore well able to achieve the same generic value as traditional credentials.

Personal value
Earning a badge can help a learner/earner get a more in-depth insight into gained skills, competencies, abilities etc., compared to traditional certificates, e.g. through transparent criteria for issuing a badge, evidence and endorsements. As such, there is already a great intrinsic value in earning an Open Badge. The learner/earner might not even have the need to share an Open Badge,

as receiving meaningful recognition may have a stronger personal than social value. There have been a number of discussion about the inflation of Open Badges and low-quality Open Badges. In the future, undoubtedly "spam"-badges will appear, but the "earners" of those low quality Open Badges without any personal value will not take the effort to share them with others and may not even be motivated to accept meaningless "spam" badges at all.

Consumer value
Consumer value is related to the intended or real audience of a credential. Carla Casilli states that this value can be thought of as the "market value" (Casilli, Carla 2015) or the effective total sum of all elements that define the value of a badge (reference). In order to have a high consumer value, an Open Badge should be self-explanatory, concise but complete and specific about learning outcomes certified with an Open Badge and the way they the outcomes such as knowledge, skills, competencies, achievements were assessed (or not). This aspect is also related to trust. The consumer (e. g. an employer with a job opening) should trust the that the issuer really is the one that is stated in the badge (also see the chapter "Technical aspects - data validation" in this paper), and that the information in the badge is correct or true. There have been discussions about the risk of fake Open Badges. This risk however is comparable to traditional credentials. It is possible to fake any credential - be it a traditional paper certificate (and there have been certainly practical examples of this) or possibly an Open Badge. However, Open Badges have built in mechanisms to minimise possible fraud (again see: "Technical aspects - data validation" in this paper) and further mechanisms may be integrated into the existing Open Badges standard to prevent faking a badge. This includes such security mechanisms as 128 bit encryption (e. g. eNetBadges[9]) or integration with the Blockchain[10], which are especially important and valuable for the so called "high-stakes" credentials such as formal education or industry certificates. In the end the consumer or market value of Open Badges seems to be a critical aspect that matters most, not only in case of high-stakes credentials: The consumer value determines what the badge can "buy" or "unlock" for its owner. Beyond the institutional, social, generic, personal and consumer values as described above, there are also more practical variables and factors that influence the value of an Open Badge.

What are the risks of Open Badges for individuals?
Some researchers see Open Badges as a disempowering tool for individuals. The 4 key points of concern about the role of digital credentials in education are the following: Open Badges are not scalable and therefore it is unlikely that they will become a "valuable" and "recognised" tool. Open Badges were conceived and created also in hope of providing communities of engaged learners with a tool for designing and crafting their own competency frameworks. The Open Badges created by these communities, however, will face serious issues of credibility and recognisability outside those communities. Because of the problems of interpretability and comparability, it is likely that the Open Badges that become widely recognised by recruiters, will be the ones using standardised competencies and assessment methods.

Open Badges are mostly used to recognise grained (high granularity) sets of competencies. This tendency will push learners towards the acquisition of single useful competencies and skills, at the expense of general, theoretical and critical knowledge, which might be less useful in the job market, but also provide the learners with the intellectual tools to interpret and process societal, political and economic mechanisms. Hence digital credentials would be unlikely to attest "powerful" knowledge.

Open Badges are the result of a more general trend of secondary and vocational education and training, which reflect the individualism, atomisation and consumerism of modern society. According

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[9] *https://www.ecomscotland.com/products/enetbadges/*
[10] http://badgechain.com/innovations-in-open-badges-blockchain/

to this view, Open Badges would represent a commodification of learning, which will ultimately promote economic and market value over social and pedagogical value and that will empower leading economic organisations over academic institutions and learners' communities.

The last point is of economic nature. The value of the Open Badges in the credentialing market relies on their scarcity. If an Open Badge becomes too common, it will lose its value on the market.

Do Open Badges have negative effect on learning? Many scholars have questioned the usefulness of digital credentialing in education. While there are many examples that would suggest a positive effect on the learners' performances, some others indicate negative effects, such as motivation displacement. According to this view, external motivators, such as badges, tend to have a detrimental effect on individuals involved in learning activities: not only may they cause a lowering of performance levels, but also a decrease of interest and a diminishing of motivation for a given task in the future.

Considering that Open Badges can take as many forms as one could imagine, it would be indeed unreasonable to think that all Open Badges have per se a positive effect on learning. Certain Open Badges would be trivial, while others could have no pedagogical bases or use unclear criteria and assessment methods. On the other hand, certain quality standards and methodologies, may help conceiving Open Badges that enhance the individual inclination to learn.

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Projects addressing the promotion of open badges

One of the priority areas of the European Union Education and Training 2020 strategy is the promotion of recognition of prior learning and the validation of 21st century skills. Therefore, open badges constitute a field of attention in the European education policy and projects dealing with the topic are supported by the Erasmus + programme.

In this article we draw attention to two KA2 projects both addressing the promotion and application of open badges in education and training.

The Open Badge Network project

The Open Badge Network (OBN) a 3-year-long recently finished Erasmus + KA2 project (running Sept 2015 – Aug 2017) was bringing together organisations from across Europe to support the development of an Open Badge ecosystem, promoting the use of Open Badges to recognise non-formal and informal learning.

The OBN project aimed at providing a trusted source of independent information, tools and informed practice to support people who are interested in creating, issuing and earning badges across Europe.

Within the framework of the OBN project the OBN Community has been established for those who are interested in the topic of Open Badges. The OBN Community invites organisations and individuals from across Europe to join and help building the Open Badge Network. Badge novices or experts are equally invited in this community to become an Associated Partner of the project consortium and/or to join the OBN Steering Committee, the Board responsible for sustaining the results of the Open badge Network project.

For details about OBN and registration possibilities see http://www.openbadgenetwork.com/

Resources collected in the frame of the project are available at http://www.openbadgenetwork.com/resources/ and http://www.openbadgenetwork.com/outputs/

The ReOpen project

The ReOPEN project aims at creating instruments to develop validated OOL for recognition of prior and non-formal learning.

The aim has been reached through the following objectives:

- Design of a platform for non-formal open learning curriculum (e.g. MOOC) development with learning validation and recognition instruments in place (learner credentials, digital badges, learning path recognition and assessment tools).
- Training T&TT at C-VET organizations, companies, HE institutions and adult learning organizations to:
  a. design validated non-formal open learning curriculum (e.g. MOOC or other);
  b. applying digital badges as a new form of digital credentialing and tracking one's learning path in non-formal open learning;
  c. recognizing non-formal open learning results in formal curricula.
- Exploiting the new platform and designing non-formal open learning courses for continuous professional staff developing applying learning recognition instruments for validated non-formal open learning
- Establishing partnership for future collaboration for non-formal open learning recognition (reviewing curriculum in partner institutions and preparing information on potential recognition of open learning).

OOL practices embedded in digital era contribute to OOL recognition, open and innovative pedagogy, transparency and recognition of skills and access to qualifications for C-VET.

The developments of the project and resources created in the frame of the project are available at: www.reopen.eu

Summary

The article gives an overview of open badges, a type of micro-credentials starting from the USA and spreading lately all over the world, including Europe to recognize non-formal and informal learning actions and outcomes. Open badges are a form of micro-credentials with a potential for a reliable presentation of skills gained outside (and lately also inside) the formal education system, in many cases in adult learning. Specifically, open badges very often record and prove the acquisition of so called 21st century skills (i.e. communication, creativity, cooperation and critical thinking) considered by a large majority of the employers as a significant aspect of selection.

It starts with an overview of open digital badges, including the reason of their existence, the **meaning** of the terms describing the badges, the infrastructure and the eco-system around open digital badges, the stakeholders of the badge and their perspective/interest is using badges. It also details the metadata behind the badges. The paper pays attention to the values as well as the risks associated with using digital badges for credentialing skills, competencies and experiences.

The article concludes with the description and the relevant findings and outcomes of the Open Badge Network and the ReOpen projects.

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