DISCO VET project

KA2 Strategic Partnership - 2020-1-HU01-KA202-078793

EXECUTIVE SUMMARY

SKILLS FOR OPEN BADGES AND DIGITALLY SIGNED CREDENTIALS IN THE NEW ERA

Collated results from the country reports from Hungary, Spain, Greece, Latvia, Lithuania and at International level.

Funded by the Erasmus+ Programme of the European Union

 Project Number: 2020-1-HU01-KA202-078793

The "*Skills for Open Badges and Digitally Signed Credentials in The New Era*" study aims at providing the base for the development work of the DISCO VET project by means of desk and field research implemented from December 2020 to July 2021. It aims to scan the rapid changes and developments of the open badge ecosystem, VET system and technical solutions; role-based requirements of issuers, earners, validators etc.; and a VET system overview**.**

The project addresses the following **target group**:

- VET (Vocational Educational Training) institutions, academic and non-academic staff involved in the validation and certification processes of VET (as well as HE and CPD) organisations.
- Teacher training and further educational institutions.
- Institutes and Pedagogical Centres dealing with internal CPD for: Public Employees, Engineers, HE teachers and VET teachers.
- Teacher further educational and training of trainers' experts.
- University rectorate, deans' office staff, stunt organisations.
- Managers, HRs, entrepreneurs, chambers of commerce, company associations.
- Researchers, e-learning experts.

The **desk research** was focused on the developments in Hungary, Spain, Greece, Lithuania, Latvia and at EU/International level regarding open badges and digitally signed credentials, IT and educational administration technology of the last 2 years in partner countries, EU and beyond.

The **field research** included:

- **Online Interviews:** The 17 interviews have been the means to obtain employers, trainers, and learners' input regarding the challenges in this area, how they are addressed so far and what services, tools, training content can be useful for their stakeholders' specific roles (issuer, earner, displayer, validator), according to their views.
- **Survey:** 165 Online questionnaires have provided feedback from Issuers of open badges and digitally signed credentials, earners (learners) and validators to gain insight into the demand side regarding Open Badges and Digitally Signed Credentials.

The findings will feed into the O2 displayer, O3 Course and O4 Lessons Learnt Kit and users guide.

SUMMARY OF DESK RESEARCH

Short-term open learning opportunities leading to micro-credentials such as digital badges may help to widen the scope of learning and skills development opportunities and form the lifelong learning dimension in higher education reaching more social groups of different age. Micro-credentials is a novel but fast developing type of credentials in Europe and other parts of the world as a response to the fast changing skills needs of the labour market as well as a possibility to recognize non-formal as well as open learning of different age and social groups.

Funded by the Erasmus+ Programme of the European Union

 Project Number: 2020-1-HU01-KA202-078793

The EU has launched the European Europass digital credentials infrastructure to register micro-credentials as well as digital badges. Besides, intense discussions and endeavours to create a unified system to recognize micro-credentials is being created and targeted working groups are created in Europe. EC appointed consultation group "European Approach to Micro-credentials" has produced its final report in the end of 2020 and different forefront innovation projects continue to work in creating the applicable and harmonized system to issue and uptake the micro-credentials, including digital badges across the EU. This project is seeking to define an agreed DISCO typology and categorisation that should be developed and implemented in the new displayer.

Open learning in all sectors is not widely embedded in the **Greek** society, nor are they institutionalised at State level through the relevant bodies. Besides of the fact that the pandemic brought e-learning to the attention of the public, the State, but also the private sector in professional and adult education, the ecosystem of open badges, digitally signed credentials and micro-credentials is by and large almost completely unexplored, especially as a market opportunity. In Greece, the digital transformation process at the socioeconomic or even cultural level has been spearheaded by developments in the way citizens interact with the State at the institutional level. The educational system, a social institution by nature, is being affected in this process, and it consequently draws principles and practices from the interaction field of State vis-a-vis Citizen. Despite the innovative initiatives (e.g., "Photodentro") non-formal and informal education are not being successfully mainstreamed across society and the educational system, and thus, the validation processes thereof are not easily accepted or appreciated.

DISCO VET partners in **Hungary** need to focus on stakeholders from this field where at least there is a strategic level presence of digital badges and certificates. They plan on developing an educational register which is authenticated that can collect the skills of a person and able to plan an individual learning path. They also realised that there needs to be high level authentication and access for this repository to access personal and learner data, diplomas, and other certificates from educational institutions etc. For these reasons, the strategy states that a government body should be responsible to develop and maintain such a repository.

Currently there is no specific regulation in ***Latvia*** that determines the use of digital / open certificates and digitally signed credentials. The education community in Latvia is ready to use electronic services, however, in the country there is there is a lower level than average level of digital tool use of the European Union and regional countries. In Latvia, it would be very useful and purposeful to develop opportunities to receive digital / Open Badges and digitally signed credentials for both issuers of certificates, their recipients, and their approvers, obtaining such certificates would offer new opportunities to increase the reliability and transparency of qualifications and also protection against forgery.

The situation in **Lithuania** regarding digital badges and other digitally signed credentials is rather limited to project and research group initiatives. A state agency "Centre for Quality Assessment in Higher Education" (SKVC) has introduced in 2020 term in Lithuanian language "*mikro-kredencialai*" to denote "micro-credentials". The mentioned agency SKVC is following the European developments towards micro-credentials, but no further formal initiatives are being offered yet. University based research groups are investigating the improvement of Digital Badge metadata to increase their value to learners. Even though the policy developments in Lithuanian education sector regarding micro-credentials are only yet to come, the digital infrastructure to operate digital signatures is in place.

Funded by the Erasmus+ Programme of the European Union

 Project Number: 2020-1-HU01-KA202-078793

According to Borrás (2017) open badges and digitally signed credentials in **Spain** seem to represent an opportunity for issuers, earners, and employers. There are policies and regulations regarding Interoperability for the Public Administrations according to a set of rules that are part of the national framework. Moreover, electronic signatures are commonly used, especially in technology-driven companies or digital environments. Additionally, the use of a certificate-based digital signature, specifically a Qualified Electronic Signature (QES) may be mandatory to conduct certain administrative procedures or formalities conducted with the Spanish Administration (Adobe Sign, 2021).

The overall **situation in Europe** regarding digital badges and other digitally signed credentials can be analysed from a two-fold perspective: the efforts at European level and the implementations at national levels. At European level there are a set of policies, initiatives based on such policies providing technological and financial support for the generation of a common understanding on the importance of digitally signed credentials and the development of infrastructures to support the implementation of their whole life cycle (creation, issuing, awarding, owning and verification). Meanwhile, at national level the state of art of art of digitally signed credentials varies as there are countries like The Netherlands where a national approach to digital credentialing is being set through the implementation of a unified infrastructure in which educational institutions can issue digital credentials at scale using Badgr. In other countries efforts are rather limited to participation on EC funded projects and research group initiatives based in universities or small companies and they are working on solutions to introduce and digitally signed credentials into their organizational procedure and institutional systems.

At **international level**, there are international initiatives like the Digital Credentials Consortium (Digital Credentials Consortium, 2021), which was founded in 2018 by leading universities from Europe and North America (US, Canada and Mexico) with expertise in the design of verifiable digital credentials. Moreover, private actors like *Accredible* which provides a comprehensive digital badge and certificate platform with a full-service digital credentialing solution for creating and managing credentials and their integration with the organizations' legacy systems

SUMMARY OF FIELD RESEARCH

We can assure there is a lot of homogeneity by country in the responses in the 3 sections analysed:

- **Challenges in open and online learning regarding assessment and recognition:** Regarding the challenges, "*A validation by formal, institutional actor is a prerequisite" in Greece. In Hungary "There are multiple solutions and platforms. The processes of defining and gaining a badge greatly differ, thus the badge system is far from being stable. This also causes confusion for the users and discourage them to try the badge system.". In Latvia it is stated that "Recognition probably requires a management infrastructure agreement at the level of educational institutions - state - EU, conditions, skills for use". In Lithuania several challenges are mentioned such as "the link of non-formal learning with formal learning and employer"* and the *"(Procedures) it is still not completely clear how people can collect recognitions and assessments of non-formal learning and recognize them". In Spain it is stated that "EDCI can be an opportunity to homogenize but many institutions in Spain are already investing in digitally signed credentials".*

Funded by the Erasmus+ Programme of the European Union

 Project Number: 2020-1-HU01-KA202-078793

- **Potential integration of the EUROPASS Digital Credentials Infrastructure (EDCI) into the digital strategy for the assessment:** even though not all the interviewees were familiar with EDCI and its potential integration, we can state that there was a general agreement on the potential EDCI has "*to be adopted in all levels of education and support building a common understanding and consistent references to qualifications, skills, and occupations on a European level".*

- **General questions,** most important course features: most interviewees opted for blended learning, visually strong and multimedia elements, including videos and podcasts with instructions, practiced oriented, combining group and individual self-paced learning.

IMPLICATIONS FOR IO2: DISPLAYER

We hereby present an overview of the educational credential state of play from a technical perspective. Taking into account that IMS Open Badges specification is included as technical prerequisite in the initial definition DISCOVET project scope, and the existing partnership experience in the development of the EDCI to support the whole lifecycle of digitally signed credentials, we recommend enhancing the Open Badges expressiveness regarding the information about the issuer, earner and details of the learning process and achievements with the elements of the Europass Learning Model as it presented in the following table introducing the starting point of an analysis for mapping the existing elements of the *Europass Learning Model* to the quality criteria proposed by VMU to be included in a digital badge description.

We recommend using this table **to further elaborate on the contents of the quality criteria to be used in DISCOVET IO2, DISPLAYER**:

Table 1: Quality criteria visible in digital badge description metadata template in virtual learning environment (VMU proposal)

Europass QM/LM	Quality criteria that need to be visible in digital badge description metadata template in virtual learning environment (VMU proposal)	Assessment	Recognition
Europass allows National ID and/or alternative identifiers	Information about the learner (name and ID number)	X	X
Europass interprets credential type by application profile, e.g., Generic, Learning Activity, Diploma Supplement	Type of badge (open digital badge; digital badge)		X
Included in Europass (can be extended with the EdDiCo proposal)	Name and type of the issuing institution (HE institution; continuing education institution; online/MOOC provider together with a HE institution; online/MOOC provider; employer organization; professional organisation / chamber, etc.)		X
Included in Europass	Type of learning (short learning program (qualification, modular, etc.); ECTS based non-formal course; non-formal course (not ECTS based) certificate; informal learning activity evidence; ECTS based informal learning activity evidence)		X
Can be added to Europass (ECCOE proposal)	Badge category (formal qualification / degree; non-formal certificate; record of experience / portfolio / badges)		X

Funded by the Erasmus+ Programme of the European Union

The European Commission support the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein. Project Number: 2020-1-HU01-KA202-078793

Europass QM/LM	Quality criteria that need to be visible in digital badge description metadata template in virtual learning environment (VMU proposal)	Assessment	Recognition
Included in Europass	Type of learning outcome (knowledge; skills; autonomy / responsibility)	X	X
Europass is specifically asking for EQF and/or NQF and/or level from within another semantic framework	Level of learning (EQF or NQF)		X
Included in Europass	Mode of learning (online; face-to-face; blended; placement; workplace)		X
Included in Europass	Activity type (workshop, seminar or conference; discussion; group work; teamwork; individual work; internship / placement; apprenticeship / shadowing; job experience; project work)		X
Included in Europass	Volume of learning (in ECTS and contact hours)		X
Included in Europass	Type of assessment (formative (accumulative); summative (at a conclusion of a defined instructional period); or both)	X	
Included in Europass(Method assessment and can be extended proposal ECCOE)	Procedural requirements for learner authentication and ID verification (online assessment without ID verification; online assessment with ID verification (proctoring); ID verification with secure login + password in learning management system; ID verification with third party tool; ID verification against national ID databases; biometric ID verification; other)	X	
Included in Europass (Method assessment and can be extended proposal ECCOE)	Assessed by whom (peer assessment; self–assessment; teacher assessment; independent assessor (third party))		X
Included in Europass (Method assessment and can be extended proposal ECCOE)	Format of assessment (automatic grading; manual grading; both, automatic and manual grading)		X
Included in Europass	Grading scheme (pass or fail; 100% to 0%; A+ (excellent) to F- (fail); 10 (excellent) to 0 (fail) grade scale)	X	

IMPLICATIONS FOR IO3 COURSE DEVELOPMENT

Regarding **SKILLS**, the preferred skill emerged from the 165 respondents to the survey are:

- **Skills for ISSUERS of OB and DSC**: The average rating of all skills is 2,6 which corresponds to "Agree". The preferred skills were "be able to encourage learning for obtaining open badges and digitally signed credentials" (2,4) closely followed by "Be able to analyse learning data", "Be able to draft the framework that will describe how badges will be used/earned, displayed/shared and designed" and "Be able to use the most popular platforms to identify the key features for OB + DSC" (2,5).
- **Skills for EARNERS of OB and DSC:** The average rating of all skills is 2,4 which corresponds to "Agree". The preferred skill was "Be able to use a framework to use/earn and display/share open badges and digitally signed credentials" followed by "Be able to use the most popular platforms to identify the key features for open badges and digitally signed credentials" and "Know how to use, store and share my open badges and digitally signed credentials".
- **Skills for VALIDATORS of OB and DSC:** The average rating of all skills is 2,2. The preferred skill is "Be able to analyse the different open badges and digitally signed credentials and choose the most appropriate for the continuous development of the employee" closely followed by "Be able to analyse and differentiate the open badges and digitally signed credentials and to be able to identify their advantages for the employer's needs" and "Be able to use the most popular platforms to identify the key features for open badges and digitally signed credentials".

Funded by the Erasmus+ Programme of the European Union

 Project Number: 2020-1-HU01-KA202-078793

For the respondents of the survey, the preferred MEDIA are learning platforms, followed by Audio and video files, OER and internet Link lists. This is reassured in the interviews as all interviewees assured that blended learning combining on-line synchronous, on-line asynchronous would fit the needs of the participants of the DISCO VET course on OB and DSC.

Regarding the METHODS, the survey shows that the preferred methods are “Everyday life problems” closely followed by “Stories and case studies” and “Group work” which is also reassured in the interviews with some particularities. For example, in Hungary it was mentioned to “(introduce) Visuals, strong, with multimedia”, in Greece “(include) Demos, videos”, in Latvia “(include) Explanatory videos with interactive support materials”, in Lithuania “Presentations and OER combined” and in Spain “practical and attractive”.

The preferred timings were:

- Not more than 30-40 hours.
- From 2 to 4 hours per week for 2-3 months.
- Follow-up should be worked out

According to the results of field research, we would suggest:

- Limit length to 30-40 hours.
- Make the learning as flexible as possible to be as adaptable as possible to the learner
- Indicate clearly the time needed for model, unit, and sub-unit
- Use Stories and case studies, videos, and podcasts that partners may adapt to their contexts
- Make emphasis on real life examples and a clear applicability and adaptability to the countries involved.
- Combine individual study and group work
- Try to reflect the benefit of the learning and the potential of increased employability

Funded by the Erasmus+ Programme of the European Union

 Project Number: 2020-1-HU01-KA202-078793