
OPEN BADGES FOR COMPETENCE RECOGNITION AND EMPLOYMENT APPLICATION: INSIGHT FROM THE GERMAN QUALIFICATION PROGRAM “CREDIT POINTS” FOR MIGRANT ACADEMICS

Ilona Buchem, Beuth University of Applied Sciences Berlin, Germany

Introduction

This paper describes current developments, practices and insights related the application, potentials and challenges of open badges for competence recognition and employment application in context of a blended learning qualification program for migrant academics in Germany. The program is called “Credit Points for migrant higher education graduates with engineering degrees (short: “Credit Points”) and is the first supplementary qualification program for migrant academics in Germany applying open badges for competence recognition and employment application. The program “Credit Points” is anchored at Beuth University of Applied Sciences Berlin¹, at Gender and Technology Center² and is part of the German federal IQ Network³. The IQ Network focuses on promoting Integration through Qualification (IQ) and aims to achieve a sustainable improvement in the labour market integration of adults with migration background. Since the IQ Network has a federal structure with coordinated networks of projects in all federal states in Germany, the project “Credit Points” is part of to IQ Network Berlin⁴, coordinated by the Senate Department for Labour, Integration and Women⁵. IQ Network including the project “Credit Points” is founded by the German Federal Ministry of Research and Education, the German Federal Ministry of Labour and Social Affairs and the German Federal Employment Agency.

The project “Credit Points” is an educational innovation program designed to complement academic and occupational qualifications of migrant academics with degrees in technical fields. The aim of the project is to help migrant academics supplement their existing qualifications based on individual academic backgrounds and career plans in order to facilitate the entry into the labour market in Germany. To reach this aim, “Credit Points” applies innovative pedagogical models, career counselling services and cutting-edge learning

¹ Beuth University of Applied Sciences Berlin: <http://www.beuth-hochschule.de>

² Gender and Technology Center at Beuth University: <http://projekt.beuth-hochschule.de/gutz/>

³ Network “Integration through Qualification” (IQ Network): <http://www.netzwerk-iq.de>

⁴ IQ Network Berlin: <http://www.netzwerk-iq.de/berlin.html>

⁵ Berlin Senate Department for Labour, Integration and Women: <http://www.berlin.de/sen/aif>

technologies to support migrant academics in developing, recognising, documenting and communicating skills for employment and employability. “Credit Points” builds on the principles of individualisation in adult education and uses a number of critical educational and counselling instruments including individual aptitude diagnosis, individual consultation and coaching as well as individual learning agreements and individual qualification plans. “Credit Points” combines eLearning modules delivered via Moodle, ePortfolio techniques supported by Mahara with face-to-face meetings, trainings, coachings and workshops to enhance flexible, modular learning individually combined to match personal goals, qualification needs and life circumstances. One of the key concepts in “Credit Points” is the use of open badges to supplement the formal “credit points” included in higher education certificates, i.e. course titles and the number of ECTS. As such the concept of open badges extends the traditional understanding of “credit points” and opens new pathways of conceptualising “credit points” in education.

Credit Points and Open Badges

Since its introduction in 1989, the European Credit Transfer and Accumulation System (ECTS⁶) has been successfully applied in higher education in EU member states. ECTS has been primarily used to enhance students mobility and comparison of courses and programs across the diversity of educational systems and institutions within and between countries in Europe, as envisaged by the Salamanca Convention in 2001 (EUA, 2002). Over the years, ECTS has effectively contributed to credit accumulation and academic recognition in Europe, playing a crucial role in consolidating the European Higher Education Area (EHEA⁷) as part of the Bologna Process.

While ECTS has enhanced comparability and mobility within higher education inside Europe, there is still a number unsolved problems related to the *recognition of competencies* and the contribution of ECTS to *sustainable employability*, both being the cornerstones of the Bologna process (EUA, 2002). As far as problems with the recognition of competencies are concerned – the current practice in higher education is to describe competencies in terms of learning outcomes in module descriptions and to examine students at the end of the course. Competencies in module descriptions are often defined in terms of contents or topics to be mastered by the end of a course, frequently simply reformulating learning goals as learning outcomes. Also the question remains if the examinations really measure the competencies declared in module descriptions and allow inferences about student competencies that go beyond knowledge and knowledge application (Stratmann et al., 2009).

As far as problems with the contribution to sustainable employability are concerned - what is left to students after the examination, is the list of completed modules (topics), the ECTS points (workload) and the performance record (grades). This information serves primarily as

⁶ ECTS: http://eacea.ec.europa.eu/llp/support_measures_and_network/ects_dsl_en.php

⁷ EHEA: <http://www.ehea.info>

evidence of specialised knowledge in particular domains but gives little insight into individual competencies that are crucial to potential employers. For example it is hard, if not impossible, to recognise whether there is any evidence of graduates having demonstrated team competencies, strategic thinking or leadership skills during their study program. Competencies such as creating and conceptualising, interacting and presenting, leading and deciding or supporting and cooperating (Bartram, 2005), can be observed in project-based learning, group work or in interactions between students, but they are seldom taken into account, recorded and documented to serve as evidence of acquired competencies in terms of sets of traits, knowledge, skills and abilities (Boyatzis et al., 2002). Thus ECTS proves only limited value as a currency which can be traded between study and work. ECTS are also limited to certain populations of students, i.e. students from the EHEA and younger graduates who have been part of the ECTS system. Especially, graduates from outside of the EHEA cannot rely on ECTS and need other types of credit points providing evidence of their competencies and achievements to sustain their employability in Europe. This is where further ways of describing and capturing student competencies have to be explored in order to be able to communicate these sets of individual traits, knowledge, skills and abilities from the academic to the work-based context.

Open Badges is a promising concept and approach which may be used to capture, recognise and communicate employment-relevant competencies across contexts. Digital badges are symbolic 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 & Casilli, 2012; Buchem & Pérez-Sanagustín, 2013). The Open Badges Initiative of Mozilla and MacArthur Foundation⁸ have explored digital badges as elements of learning that can be used to set goals, stimulate motivation, recognise and represent achievements, supporting open credentialing and accreditation for formal and informal learning (Knight & Casilli, 2012). An important difference between digital badges and open badges is that open badges are designed to be autonomously collected by individual learners in the digital backpack and displayed by learners across different contexts and environments. In this way open badges have the potential to form living transcripts of individual competencies (Knight & Casilli, 2012). Open badges offer a flexible mechanism not only for motivating learners or goal setting but also for recognising personal competencies and achievements and communicating these between education and work. In this sense badges can be viewed as boundary objects, which can be used to cross boundaries between existing divisions such as formal and informal learning or academic and professional context (Buchem, et al., 2011).

With tools and infrastructures for badging constantly improving, there is much room to explore new approaches to using badges (Sharples et al., 2013). The next section describes the concept of open badges as individual “credit points” which capture and communicate individual competencies relevant for employment application as part of the research and

⁸ Mozilla Open Badges: <https://mozillalabs.com/en-US/open-badges>

development project “Credit Points” at Beuth University of Applied Sciences Berlin, Germany.

Using Open Badges as Credit Points

This section describes how open badges are conceptualised, designed and applied in the qualification program “Credit Points” at Beuth University of Applied Sciences Berlin. Following the background information related to the qualification model and qualification participants, this section dwells on recruitment considerations, pedagogical considerations, badges design and technical infrastructure, and application of open badges as credit points.

Qualification model and participants

The project “Credit Points” as part of the German federal program “Integration through Qualification” is concerned with devising innovative ways of providing migrant academics with supplementary higher education, capturing and communicating individual competencies as unique personal resources that are of value to potential employers. The participants in the qualification program “Credit Points” do not have to complete full study programs as they already have acquired HE degrees, but are given the possibility to choose single modules from different programs offered at Beuth University in order to supplement their existing qualifications. Participants may choose from a wide range of study programs, primarily blended learning modules from the Institute of Distance Studies at Beuth University (Fernstudieninstitut, FSI⁹), which offers full bachelor and master programs, including MBA in such fields as renewable energies, industrial engineering or clinical trial management. Participants may also choose other modules from the existing portfolio of Beuth University and participants in courses developed specifically for the qualification program “Credit Points”. These modules are related to fostering generic competencies, including (a) German language skills, (b) digital literacy and identity, (c) academic/scientific skills, and (d) job application skills.

The choice of modules is based on intensive, *individual consultations*, during which each participant co-constructs an *Individual Qualification Plan (IQP)* under the guidance of the program advisor. The individual qualification plan is an outcome of a negotiation process between the participant and the advisor and results from the analysis of academic and professional track record, career goals and aspirations and current requirements and possibilities on the German labour market. Based on the results of the consulting process, a *Learning Agreement (LA)* is concluded between the participant and the program advisor, in which both the participant and the advisor commit to certain activities which best support the realisation of the individual qualification plan (IQP). For example, the participant and the advisor may agree that monthly or bi-monthly consultations are necessary to facilitate the individual learning and job application process.

⁹ Institute of Distance Studies: <http://www.beuth-hochschule.de/fsi>

The participants in “Credit Points” are graduates with degrees in technical fields including computational engineering, computer sciences, business informatics, construction engineering, chemical engineering, nutrition technology, environmental engineering and mechanical engineering. These graduates come from 11 different countries, i.e. Bolivia, Ivory Coast, Georgia, Iran, Cuba, Mali, Peru, Poland, Romania, Russia and Spain. Half of the participants already acquired the official recognition of their degree by an official German accreditation body. Despite the fact, that participants hold degrees in highly relevant fields and gained the official recognition of their degrees, about 70% the participants were unemployed at the beginning of the qualification program. Most of the employed participants were either employed in fields not relevant to their previous education or where employed in precarious positions not adequate to the level of their education and previous professional experience. This already points to the problem of many migrant academics in Germany: According to the German Federal Employment Agency (Bundesagentur fuer Arbeit, BA), about 20% of the domestic labour force potential in Germany is being currently wasted (BA, 2011). The program “Credit Points” addresses this problem.

Recruitment considerations

As the section above points out, migrant academics in Germany are faced with the challenge of entering and/or elevating on the labour market despite their academic degrees and in some cases even despite the official recognition of foreign degrees. From this perspective, a question emerges: How can individual strengths of migrant academics may be captured and communicated as valuable resources to potential employers?

The project “Credit Points” builds on the premise that online identity and online reputation are becoming more and more important for finding employment and that online recruiting have already become an important part of recruitment strategies of many organisations and enterprises around the world. As the research study “Recruiting Trends 2013” conducted with top 1000 enterprises in Germany and in cooperation with Monster Worldwide Deutschland indicates, recruiting and application processes are already digital, for example (a) nine out of ten job opening are published online, (b) approx. 75% of job applications are submitted online, and (c) about 12% of enterprises actively search for candidates in social media (e.g. LinkedIn, Facebook) and the share of both social media and mobile recruiting is estimated to grow in the next years (Weitzel et al., 2013).

The global trend towards digitalisation of job application and recruitment processes renders obvious that the use of digital representations of skills is becoming more and more important both for applicants and recruiters. Open badges as visual representations of individual skills and achievements have the potential of making this process more straightforward and efficient. Badges enable to capture and display fine-grained sets of individual competencies. The information conveyed by open badges includes:

- *Visual information* as a picture symbolically representing a skill or achievement,

- *Textual information* as a description of the skill, awarding criteria and verifying evidence, and
- *Metadata information* as information related to the issuer, time and context of badge creation.

The combination of these different types of information and media formats makes open badges to data-rich digital tokens which may be used to enhance the transfer of competency-relevant information between education and workplace and vice versa. Additionally, the concept of open badges which is based on an open technical standard enabling any organization to create, issue and verify digital badges, as well as the possibility to collect badges from multiple sources into a single backpack, helps applicants to flexibly manage this transfer process according to individual preferences: Applicants can display the badges they received from various organisations as evidence of their skills and achievements on personal websites such as blogs, social networking profiles or job sites. In this way open badges may be used as validations of individual competencies, enhancing online reputation of applicants.

Pedagogical considerations

Open badges may be used as evidence-based digital representations of skills and achievements to highlight individual attributes alongside formal qualifications in this way providing recruiters with a more holistic view of an individual applicant (Hamilton, 2014). This calls for new forms of assessment and validation of personal attributes, going beyond the assessment of specialised knowledge and knowledge application, to a large extent the only and dominant practice in higher education. In view of the limitations of current forms of assessment, still largely based on summative assessment measuring content knowledge, as well as in view of problems with plagiarism, both alternative forms of assessment, including formative assessment, self-assessment and peer assessment (CERI, 2005), and alternative objects of assessment, including helping others, being cooperative and contributing to the public good (Downes, 2012) have been called for.

Using open badges in the project “Credit Points” aims at triggering alternative or new methods of assessment rather than enhancing summative forms of assessment targeted primarily towards measuring domain-specific content knowledge. The first and foremost aim of assessment for open badges is to elicit information about individual competencies, achievements and successes of each individual. The basis for the allocation of badges as credits points is not the workload or lists of predefined learning outcomes, which is already taken care of by ECTS, but capturing moments of student creativity, innovative thinking, peer support or self-initiative as evidence of competencies, emphasizing individual strengths. Following the principles of formative assessment, this evidence in program “Credit Points” is captured in the process of learning and interacting with other students in modules, workshops, meetings and consultations with the advisor as well as during in-company placements.

Badges design and technical infrastructure

The design of open badges in the project “Credit Points” is based on the design framework of BeuthBadges¹⁰. BeuthBadges is a research and development project at Beuth University of Applied Sciences Berlin dedicated to the application of badges in different learning and teaching contexts, including higher education and work-based learning. The design framework of BeuthBadges combines a number of attributes to enhance the information-richness of open badges. BeuthBadges are designed as cubes with the following differentiating attributes (Figure 1):

- Logo – the logo is a variable element, providing information about the specific program or project, for example in the project “Credit Points”, the logo of the program “Integration through Qualification (IQ)” is used to denote that the badges was acquired as part of this federal qualification program.
- Colour – the colour of the cube provides information about a specific domain, study program or element, for example in colours in the project “Credit Points” are related to different elements of the individual qualification plan such as modules from programs offered by the Institute of Distance Studies or modules related to generic competencies such as digital literacy or language competency.
- Title – the title of the badge is the concise description of the specific competence which the badge is representing, such as “Leader virtual team” to denote that the participant demonstrated leadership skills in an online environment while interacting with peers in a virtual team.
- Icon – the icon is a variable element and represents a category of skill or competency, such as “social skill”, “language skill”, “technical skill”, “information skill” or “research skill”. This symbol provides additional information about the nature of the competency represented by the badge.
- Text – the text provides the detailed description of what the badge represents including evaluation criteria that was used, the context in which the specific competency was observed and the description of the evidence.
- Metadata – the metadata provides the necessary information to verify the issuer and the date of issue.

¹⁰ BeuthBadges: <http://beuthbadges.wordpress.com>

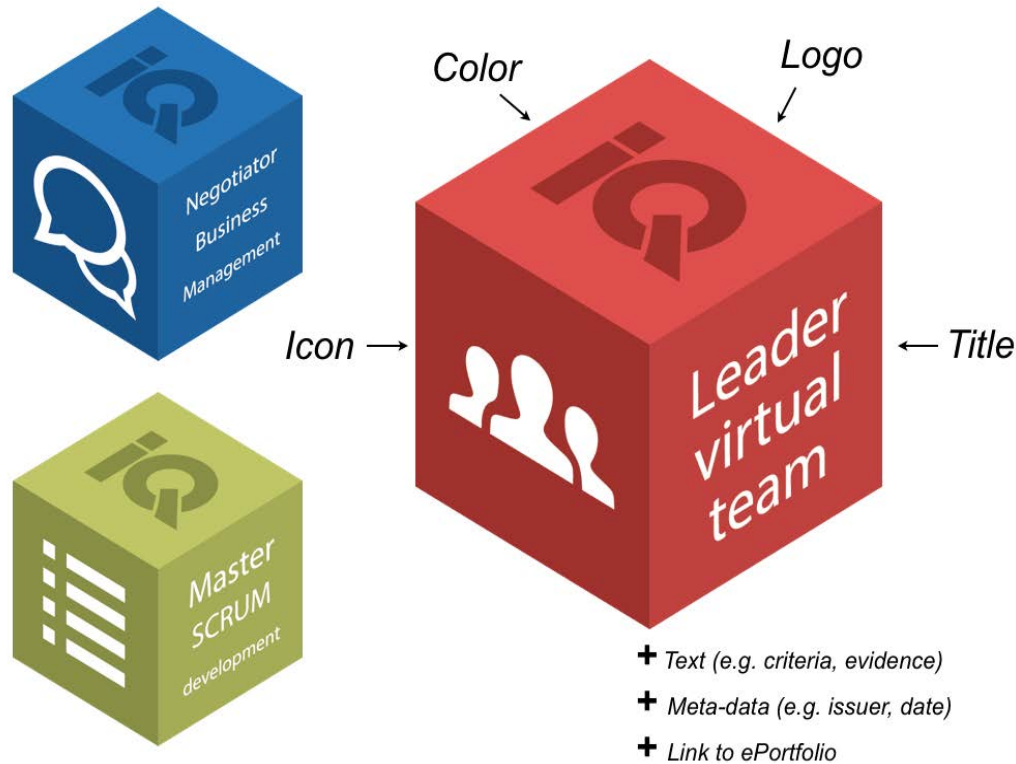


Figure 7. BeuthBadges – design of open badges and examples of badges

The technical infrastructure for issuing, awarding, collecting and displaying BeuthBadges is a combination of different systems, including:

- Adobe Illustrator – for graphical design of the badge png with templates to guide the design process
- Moodle – as badge issuer with integrated badge functionality in the 2.5 version.
- Mozilla backpack – as individual collector of badges which can be displayed in different sites
- Mahara – as ePortfolio system in which participants develop their digital job applications including the Europass CV and the directory of documents such as higher education diploma, certificates etc.
- WordPress – as project website in which individual participant profiles are displayed and as a tool in which students aggregate their digital traces to represent their online identity and reputation.

BeuthBadges are designed with Adobe Illustrator, are enriched with texts and metadata issued via Moodle, collected individually in Mozilla backpack or directly integrated into Mahara views by means of the Mahara badge widget. Currently, the concept of badges and the process of badge issuing and displaying is tested for German language skills based on the Common European Framework of References for Languages (CEFR).

Application of open badges as credit points

Open badges designed in line with the BeuthBadges framework are applied as credit points in the qualification program “Credit Points” as evidence-based digital representations of skills and achievements highlighting individual strengths alongside formal qualifications. The badging process comprises of two phases.

In the first phase information to create badges is collected from all stakeholders involved in the program, including lecturers, advisors, project members, study program coordinators, peers and enterprise representatives who interact with participants during in-company placements. These stakeholders provide information about their own observations related to the demonstration of skills, competencies, achievements and positive developments of program participants. This information is based on real life observations, e.g. during team work or conversations. Based on this information badges are designed and issued to program participants, who collect badges in their backpacks.

In the second phase participants use badges collected in their backpacks to enhance their online identities and their digital applications based on artefacts collected in ePortfolios. Both online identities (e.g. profiles in LinkedIn or personal blogs) and digital applications (e.g. digital CV, work samples) are used as job application instruments. This process is based on individual decisions of program participants about which badges to display in which online environments and contexts. As in all other parts of the qualification program, participants are supported by the program advisor in this decision-making process, taking into consideration some of the key aspects, such as displaying a balanced selection of badges. As some field reports point out, providing too many badges may be counter-effective for the application process (Hamilton, 2014). In this way open badges complement the information included in certificates and ECTS, providing a more holistic view of the applicant.

Conclusions

This paper provides an insight into the concept of open badges for competence recognition and employment application as one of the cornerstones of the project “Credit Points” at Beuth University of Applied Sciences Berlin and part of the federal program “Integration through Qualification (IQ)” in Germany. Given the initial stage of the project, further insights and examples of badges will be provided in the second phase of the project, starting in April 2014. Some of the key challenges faced at the moment are (a) establishing awareness among lecturers and study coordinators as far as collection of information for issuing of badges is concerned, and (b) establishing trust in open badges among potential employers as far as application processes are concerned.

References

1. Bartram, D. (2005). The Great 8 competencies: a criterion-centric approach to validation. In *Journal of Applied Psychology*, 90(6), (pp. 1185-1203).

2. Boyatzis, R.E.; Stubbs, E.C.; Taylor, S.N. (2002). Learning cognitive and emotional intelligence competencies through graduate management education. In *Academy of Management Journal, Learning and Education*, 1(2), (pp. 150-162).
3. BA – Bundesagentur fuer Arbeit (2011). Perspektive 2025: Fachkraefte fuer Deutschland. In *Veroeffentlichung der Bundesagentur fuer Arbeit*.
4. Buchem, I.; Attwell, G.; Torres, R. (2011). Understanding Personal Learning Environments: Literature review and synthesis through the Activity Theory lens. In *Proceedings of the The PLE Conference 2011, Southampton, UK*, (pp. 1-33).
5. Buchem, I.; Pérez-Sanagustín, M. (2013). Personal Learning Environments in Smart Cities: Current Approaches and Future Scenarios. In *eLearning Papers*, 35, (2013).
6. CERI – Centre for Educational Research and Innovation (2005). Assessment for learning formative assessment. In *Learning in the 21st Century: Research, Innovation and Policy*.
7. Downes, S. (2012). New Forms of Assessment: measuring what you contribute rather than what you collect. In *Half an Hour – A place to write, half an hour, every day, just for me, Monday, August 27, 2012*. (blog of Stephen Downes). Available online: <http://halfanhour.blogspot.hu/2012/08/new-forms-of-assessment-measuring-what.html>
8. EUA – European University Association (2002). *Credit Transfer and Accumulation – The Challenge for Institutions and Students*. EUA/Swiss Confederation Conference.
9. Gehmlich, V. (2006). Recognition of credits – Achievements and Challenges. In *Recognition in the Bologna Process*, (pp. 81-91).
10. Hamilton, G. (2014). Evidencing Employability Skills with Open Badges. In *JISC RSC eAssessment*.
11. Knight, E.; Casilli, C. (2012). Mozilla Open Badges. Game Changers: Education and Information Technologies. In *EDUCAUSE, 2012*.
12. Sharples, M.; McAndrew, P.; Weller, M.; Ferguson, M.; FitzGerald, E.; Hirst, T.; Gaved, M. (2013). Innovating Pedagogy 2013: Exploring new forms of teaching, learning and assessment to guide educators and policy makers. In *Open University Innovation Report 2*.
13. Stratmann, J.; Preussler, A; Kerres, M. (2009). Lernerfolg und Kompetenz: Didaktische Potenziale der Portfolio-Methode im Hochschulstudium. In *Zeitschrift für Hochschulentwicklung (ZFHE)*, 4(1), (pp. 90-103).
14. Weitzel, T.; Eckhardt, A.; Laumer, S.; Stetten von, A.; Maier, C. (2013). *Trecruiting Trends 2013*.

Acknowledgement

The project “Credit Points for migrant higher education graduates with engineering degrees” as part of IQ Network Berlin is founded by the German Federal Ministry of Research and Education, the German Federal Ministry of Labour and Social Affairs and the German Federal Employment Agency.