



# LESSONS LEARNED PILOT EDUBADGES

EXPERIENCES WITH DIGITAL BADGES IN DUTCH EDUCATION

**SURF**

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# Introduction

SURF is developing an infrastructure which will allow Dutch educational institutions to issue digital certificates, called edubadges. With these edubadges, students can demonstrate that they have acquired certain knowledge or skills. The Netherlands is one of the forerunners worldwide in taking a national approach in this field. After a thorough, multi-year preliminary phase, which included a whitepaper and a proof of concept, SURF completed a pilot period in 2019/2020. Throughout this period, SURF sought close collaboration with 16 educational institutions. In this publication, you will find the lessons learned from that pilot.

## About the pilot phase

The pilot phase was the final step towards creating an infrastructure that allows institutions to issue edubadges. The pilot participants have gained a lot of experience with issuing badges through the pilot infrastructure that SURF has developed. The pilot projects covered a broad range of use cases from various fields and with various target groups.

### Participating institutions:

- Albeda
- Amsterdam University of Applied Sciences
- Avans University of Applied Sciences
- Deltion College
- Eindhoven University of Technology
- Erasmus University Rotterdam/  
Rotterdam School of Management
- Hanze University of Applied Sciences
- Maastricht University
- NHL Stenden University of Applied Sciences
- Rotterdam University of Applied Sciences
- Tilburg University
- University of Twente
- Utrecht University
- Vrije Universiteit Amsterdam
- Wageningen University & Research
- Windesheim University of Applied Sciences

## What is this publication about?

We will first discuss the lessons learned by the educational institutions. Then we will look at the lessons learned by the SURF project team itself.

## For whom?

The publication is intended for educational institutions from senior secondary vocational education, higher professional education and research-oriented higher education that have participated in the pilot. It is also meant for institution that are considering using the edubadges-infrastructure in the future. In the previous publication, [Lessons learned in the edubadges proof of concept](#), we have already described what edubadges are, why they are important and what SURF does with them. These aspects are therefore not discussed in detail in this new publication.

SURF edubadges project team, May 2020



# Lessons learned by participating pilot institutions

From the practical experiences we gained together with the institutions during the pilot period, we derived lessons learned in seven thematic areas. Concrete examples from the participating pilots have been included, wherever possible.

## 1 Badge strategy

The decision to issue badges is closely linked to the primary process of providing education, namely to teaching activities and the provision of exams. It is therefore essential to develop a coherent strategy for the use of badges in education beforehand. In doing so, ask yourself the following questions: in what educational context do you want to work with badges in your own educational institution? Within the formal, accredited programme? Or do you want to issue badges for skills and achievements gained outside the regular curriculum? How does the badge fit into the student's learning experience as a whole? What position does the badge occupy in your educational programme and how do you communicate this to the students?

An institution experimenting with badges for the first time will often choose a limited, well-defined context. Our advice is to think about the direction in which the ultimate goal of issuing badges may lie. A more targeted pilot can be carried out based on this ultimate goal.

### 1.1 Some examples of strategies

<b>Using badges for a specific target group</b> e.g. incoming Erasmus students	<b>NHL Stenden University of Applied Sciences</b> awarded edubadges to international Erasmus students. In this way, the students could present an informative certificate at home about what they had achieved during their time in the Netherlands. The foreign students really appreciated this.
<b>Using badges for a 'plus-programme'</b> e.g. excellence programmes in education	<b>Hanze University of Applied Sciences</b> is considering using digital badges for various levels of Honours programmes from the Hanze Honours College.  <b>NHL Stenden University of Applied Sciences</b> is issuing excellence badges to students on teacher training programmes who have received an 'excellent' grade in the assessment for the ICT & Didactics component.
<b>Using badges to indicate a learning pathway within a regular programme</b> e.g. by defining basic and advanced badges that follow each other sequentially	<b>NHL Stenden University of Applied Sciences</b> has set up a badge strategy in which the badges correspond to phases within a minor programme in order to display their logical sequence.
<b>Using badges in a specific subject area</b> e.g. the subject area of information literacy skills	<b>Wageningen University &amp; Research</b> and the <b>Vrije Universiteit</b> have developed edubadges for the subject area of information literacy skills. They have defined levels of learning based on international standards such as SCONUL and the ACRL Framework. They have linked badges to these different levels of information literacy skills.

<p><b>Using badges for a specific extracurricular activity</b> e.g. membership of the student council</p>	<p>At the <b>University of Twente</b>, the Student Union (an umbrella student body of 130 affiliated student organisations) issues badges in recognition of a full-time committee year (so-called activism recognition). Students feel that the badge is a good addition to the existing paper certificate which is signed by the rector magnificus and the Student Union. Both the badge and the paper certificate underline the learning experience and commitment of the student.</p> <p>On <a href="https://pathways.tue.nl">pathways.tue.nl</a>, <b>Eindhoven University of Technology</b> has created an overview of extracurricular learning paths that students can follow. Students can use these pathways to train additional skills that will help them to function well in employment. Examples include presentation skills, negotiation skills and creativity.</p> <p><b>Utrecht University</b> issues edubadges to students who participate in an educational innovation think tank. The badges recognise their contribution of ideas to the field of educational innovation within Utrecht University. Students indicate that this motivates them to participate in the think tank.</p>
<p><b>Using badges to achieve a certain entry level</b></p>	<p>The City Lab of <b>Rotterdam University of Applied Sciences</b> has issued various badges to students with which they can demonstrate that they have the skills to operate certain equipment. Examples include: City lab / 3D printing basic, City lab / Laser cutting basic, City lab / 3D modeling basic.</p> <p><b>Wageningen University &amp; Research</b> has experimented with awarding edubadges for the safety instructions that students and staff must understand before they are allowed to do lab work or field practice. Following the instruction modules is mandatory, but does not earn credit points.</p>
<p><b>Using badges in a cross-institutional framework</b> e.g. 21st Century Skills</p>	<p>If badges are based on a joint framework, it becomes possible to stack and combine badges across institutions. In this respect, it is essential to have a national taxonomy of the subject area.</p> <p><b>Albeda</b> has set up badge classes for the ten 21st Century Skills, for which a joint framework has been agreed (KOMPAS21, developed by students, education and business). The twelve institutions that are committed to this framework can all use the badge classes that Albeda created. This makes mutual comparison possible.</p>

<p><b>Using badges for staff members</b> e.g. in professional development</p>	<p><b>Deltion College</b> has used badges to indicate which components of a ‘Learning with ICT’ professional development programme the participating teachers have already completed successfully. Deltion created a <a href="#">landing page</a> for the participants (here: teachers) where badge recipients will find information about the badge.</p> <hr/> <p>Within the pilot, <b>Utrecht University</b> issued edubadges for training and workshops within the Educate-it programme. This is a UU-wide programme supporting lecturers in strengthening and innovating their education through blended learning. After the pilot phase, UU would also like to issue edubadges within other teacher professional development programmes at the university.</p>
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## 1.2 Critical succes factor: clear added value in the eyes of the target group

Perhaps the most important element of the badge strategy is that the target group needs to see a clear added value in the use of badges. It seems that badges issued in non-formal contexts are often perceived as meaningful, as they are usually awarded for activities for which previously no certificates have been granted at all. Some pilot institutions have the impression that replacing already existing certification methods with an edubadge apparently has relatively less added value in the eyes of students.

## 1.3 Clear information

However, the target group needs to know clearly what a badge is, what you can do with it and how to apply to receive the badge you want. If the target group does not know exactly what a badge is and its benefit, they will be less likely to apply for it. That is why it is important that badges become more widely known within the institution. Provision of good information helps in this respect, for example, through the institution’s website.

## 1.4 Good visibility of badges

Recipients of badges value that they can be displayed on social networks, such as LinkedIn.

## 1.5 Exploring multiple contexts

Some pilot institutions have deliberately piloted with different target groups and in different contexts, in order to gain experiences that can help them to define a badge strategy.



Sander Zwier,  
Windesheim  
University of  
Applied Sciences

*“Windesheim used the pilot phase for experimenting with the badge process for three different use cases: the Honours Programme, the flexible part-time programme of Social Work within the domain Health and Well-Being, and the flexible part-time programme of business administration MER within the domain Business Media and Law. We would like to find out how to issue badges and how to embed the process in the organisation, in several different contexts. The Honours Programme is non-accredited, the flexible parttime programmes are both accredited educational programmes.”*

### 1.6 Student-centered or teacher-centered application process?

When defining a badge strategy, the division of roles is paramount: is the badge issued if students themselves think they are eligible and apply for it, by their own initiative? Or does the lecturer issue badges ‘unsolicited’ and does the student receive a message that a badge is ready to be picked up? These models fit different educational contexts.



Karen Slotman,  
University of Twente

*“In our opinion, it is important that the initiative for requesting a badge lies with the student. It is up to them to prove that they meet the criteria.”*

### 1.7 Granularity of the badge

How ‘big’ or ‘small’ do you want to make the badges for your institution? In other words, how much study time must a student invest or how much learning must be demonstrated to qualify for the award of a badge? In theory, a lot is conceivable:

#### ► A badge as a digital version of the diploma, so at the highest level of granularity

The **Rotterdam School of Management** is preparing to issue badges to students who have successfully completed the “Finance & Investments Advanced” master’s programme.



Marijn van den Doel,  
Erasmus University  
of Rotterdam/RSM

*“We started issuing the badge as a digital version of the diploma. Later on, we would like to certify smaller units of learning with badges as well. We needed a lot of meetings with our institutions’ lawyers and our examination boards to put this in place.”*

- A badge as a certificate for completing a course module with an exam.  
Units may vary in size.

**NHL Stenden University of Applied Sciences** awards badges at completion of the master module 'Online arranging' with a value of 5 ECTS. This badge therefore coincides with a (grade) assessment in the Student Information System.

**The Maastricht Graduate School of Governance/United Nations University** has developed a number of online courses for which they want to issue edubadges instead of certificates. These courses are currently offered:

- as a separate online course in contract education
- as part of an online curriculum
- and sometimes without any fee for PhD students from Africa.

All these forms of courses are part of postgraduate education. For these subjects, the participants now receive:

- a paper certificate (to acknowledge course participation, including assignments that have been checked)
- or a paper certificate with ECTS (to acknowledge participation, including assignments that have been checked and an oral examination)



**Ilse Sistermans,**  
Maastricht  
University

*"In practice, it is difficult to make a sharp distinction between accredited and non-accredited education. There is a grey area, as you can see from the UNU-MERIT example. These post-graduate modules are linked to a post-graduate training programme, though not to an accredited master or bachelor programme. That's why I wouldn't want to call it 'non-formal'."*

- A badge as a certificate of a small part of an educational unit, mainly aimed at increasing the motivation of participants.

**Deltion College** issues badges to lecturers who have completed parts of the professional development programme. Only when all the components have been completed, the unit of study is finalised and a 'big badge' can be requested: a badge on completion of the learning pathway Learning with ICT.





## 2 Visuals and graphic design

A feature of badges - in contrast to other types of digital certificates - is that the badge has the appearance of an image, but includes underlying metadata. The following aspects should be considered:

### 2.1 Badge design

If you want to issue badges in the name of your institution, you need to have one or more images available, compliant with your badge strategy. Because this visual has a relationship with the image you want to portray as an institution, the design of this visual is usually considered quite important, and several parties must probably be consulted internally during its development. This takes time and there are costs involved.

Examples of badges:



## 2.2 Practical requirements for the visual

There are a number of practical design requirements within the edubadges environment. The image of the badge must be supplied as a .png file, must be larger than 90 by 90 pixels, but not larger than 256 kB. Traditionally, many badges have a hexagonal shape to indicate their stackability. However, this is not mandatory. The visual aspect of the Dutch badge is therefore just a small image. Sometimes the institute tries to use it to communicate more than is actually possible. Think carefully about what you want to display in the visual, as this can only be the most important information (e.g. the issuer plus title of the badge?). Detailed information can be included in the underlying metadata.

## 2.3 Recognisable visual link between badges

The visuals must be in line with the badge strategy of the institution as a whole. This means, for instance, that if you use your badges within different use cases, you need to make sure that the different types of badges have a logical, coordinated look.

**Utrecht University** has subdivided the edubadges issued within its Educate-it training courses into three levels that also match each other in terms of design. This way, the badges are stackable. However, the badges can also be issued separately.



Aleid de Jong,  
Utrecht University

*“These are three examples of badges that Utrecht University has developed for its Educate-it training courses. This reflects blended learning competency at three different levels. We have also developed badges on other themes, with each theme including three badges at three different levels.”*

## 2.4 Minimising changes

Once you have developed the visual, it will be difficult to change it later on because badges that have already been issued can no longer be changed.

## 2.5 Visuals for cross-institutional badges

Vrije Universiteit Amsterdam and Wageningen University & Research collaborated in the design of the badges and matched them to learning activities for information skills education. You will not find the logos of education institutions on these badges. The issuer can be identified through the metadata. The main objective of this design is to ensure the badges are interchangeable across institutions.



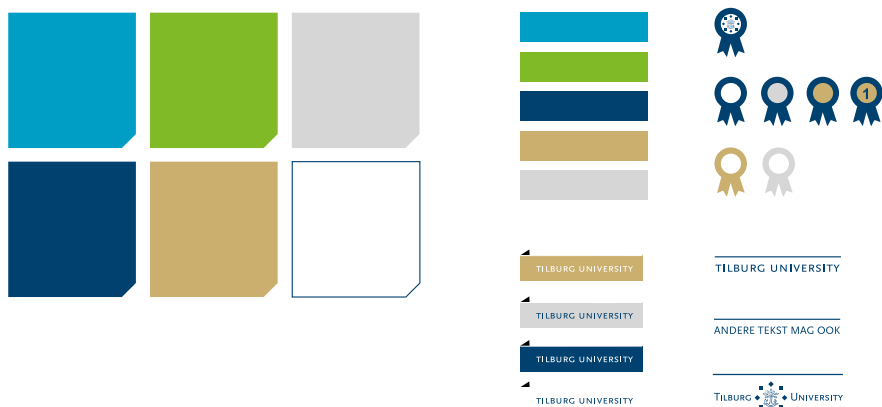
*"An infrastructure to manage and administer cross-institutional badges from a single environment would be desirable. We now had to manage the badges separately for each individual institution, and that's not very efficient."*

## 2.6 Cooperation with communication department

The communication department usually has a central role in the design of the badge's visual. Make sure that everyone involved knows who is responsible for it and who bears the costs. Who supervises compliance with the corporate identity, and which colours and symbols may be used? And what flexibility is there for the issuing department/faculty, etc. to adapt the text or visual themselves?

**Tilburg University** has created a toolkit for generating visuals for badges in accordance with its own corporate identity. The toolkit provides resources for those who want to issue badges within Tilburg University, ensuring consistency with the corporate identity and a consistent badge look-and-feel.

An example from the toolkit of Tilburg University:



### 3 Badge content

What criteria should you formulate for issuing badges? What information about the achieved performance should you put in the badge? The same applies here as for the visual: This should be as consistent as possible if you establish several different badge classes within your institution. From the edubadges infrastructure, we provide the clearest possible descriptions of the available metadata fields. Experience has shown that it is difficult to ensure consistency when several people are involved in creating badge classes.

#### 3.1 Formulate guidelines for badge-awarding criteria

Consider, for instance, whether you are going to formulate the criteria in terms of learning outcomes, or also in terms of efforts invested (such as attendance or submission of a piece of work). In the guidelines, you can also record information on how things should be formulated, for example, using the Dublin descriptors and the Tuning method for describing learning outcomes. Also look at the possibility of using guidelines from existing (national or international) standards, such as in the example of the edubadges for information literacy skills from Vrije Universiteit and Wageningen University & Research.

The five part-time programmes of the **Career Academy of Rotterdam University of Applied Sciences** Business School want to issue badges on a large scale in the future. The curricula are divided into teaching units of 30 EC study credits. The learning outcome is tested and assessed as either ‘competent’ or ‘expert’. The student receives a certificate describing the learning outcomes, including NLQF level, assessment criteria, final assessment, number of credits, ISAT code of the programme and more.



**Robert Bouwhuis,**  
the Rotterdam  
University of Applied  
Sciences

*“I think it is very important that we use internationally recognisable level descriptors, such as NLQF/EQF, ISCED and the Dublin descriptors. Well-formulated learning outcomes are also essential. The ECTS Users’ Guide expressly states that you should formulate learning outcomes from teaching units in the same way as learning outcomes of entire study programmes. That is therefore a useful instrument.”*



**Tineke Kroontje,**  
Hanze University of  
Applied Sciences  
Groningen

*“A badge only offers benefits if there is sufficient and correct information attached to it. This means in any case information about what the student has achieved to obtain the badge. For example, was it a nomination for an award, attaining a minor or a certification for achieving a key milestone? The metadata is essential.”*

### 3.2 Linking to frameworks

Are there general frameworks which you can link your badges to? The European Qualifications Framework (EQF) or its Dutch variant (NLQF) are frameworks for which the SURF infrastructure already reserves a fixed field in the metadata. However, there may be other frameworks your institution wants to connect to. You can add these in the optional information fields.

**Albeda** makes edubadges available to students based on one or more of the 21st Century skills, as elaborated by the national KOMPAS21 project. Each skill is detailed in a rubric and consists of 3-5 elements at three levels: beginner, advanced and expert.

### 3.3 Distinction between formal and non-formal badges

Institutions may issue badges in different contexts, as discussed earlier. The main difference between formal or non-formal use is whether the badge is related to a part of an accredited training programme (and hence whether ECTS or NLQF can be cited) or whether the badge comes from a non-formal or extra-curricular context. The content and metadata that are useful to log in these two categories can differ greatly. In the formal context, there are probably (many) more references to and alignment with frameworks.

### 3.4 Changes vs. persistence

Badges theoretically last a lifetime. (Unless there is good reason to include an expiry date, e.g. for a first-aid certificate, which has to be renewed regularly.) It is therefore difficult to include URLs in the badge. You should only include persistent URLs, because you may otherwise end up with broken links. In practice, there are few or no persistent URLs in use by education institutions. A lot of information on websites is subject to change and is regularly updated. It is also not possible to upload attachments. All necessary information must therefore be included in the metadata fields of the badge itself.



## 4 Governance (roles and privileges)

Issuing badges from an education institution involves several people with different tasks and privileges. SURF's edubadges infrastructure assumes availability of a single administrator at institutional level who can then assign privileges to colleagues in their own organisation. This might include the right to create an issuer, to create badge classes, or the right to award badges based on existing badge classes. Keep in mind that developing a badge class (including formulating the criteria/required learning outcomes and the associated metadata) is work that requires educational knowledge.



Alex Speelman,  
Hanze University  
Groningen

*"For each type of badge, the Hanze University of Applied Sciences will establish arrangements on who will issue it and how and where the badge will be registered. For instance, it may be agreed that badges for accredited teaching units may only be awarded by the examination board of the relevant study programme. This requires periodic coordination by the staff departments involved, as well as coordination with the various examination committees'.*

### 4.1 Roles and privileges structure

In theory, it is possible to build in a fairly profound tree structure of roles and privileges from your institutional account. Based on the experiences gained during the proof-of-concept phase, SURF has added an extra layer – “faculty (issuer group)” – to the roles and privileges structure, at the request of the participating institutions. This extra (non-mandatory) layer allows you to group issuers, for instance, by faculty, study programme or another organisational unit, and manage roles and privileges at that level too. The pilot institutions told us that they would like to see the organisational reality mirrored in the roles and privileges structure. The trick, however, is not to overcomplicate things, but to arrange them in such a way that the issuing process is manageable. The choice between central and decentralised issuing of badges also has a lot to do with the nature and scale of the education institution. Whatever you do, make a conscious choice and designate clear responsibility (functional administrator?) for it.

### 4.2 Designating responsibility

An important question is who (which professional role) will be assigned responsibility for issuing badges. Does the individual lecturer do this? The advantage is that they know the students and their learning outcomes well; the disadvantage is that you then potentially have to explain to many different lecturers how to work with the infrastructure. You may then have to offer individual-level support. An alternative is to assign responsibility to an administrative position, which in turn has the disadvantage that this requires information to be shared by lecturers. With the roles and privileges structure, whether the badges are formal or non-formal also makes a difference. This is because a formal badge, which is related to a part of an accredited programme of study, will be under the supervision of the examination board.

### 4.3 Maintaining an overview

In a pilot phase, only a relatively small number of badges might be issued. Eventually, you will probably want to issue larger numbers of badges. It then becomes important to ensure that things remain manageable. The navigation and the roles and privileges structure within the system support this.

### 4.4 Link with SIS or LMS

A good integration with the learning environment will be desirable in the medium to long term. If you are going to issue a lot of badges, you can use the learning environment in this process to reduce the burden on lecturers. Efficiency in the workflow becomes increasingly important as the number of students grows.



Sylvia Moes,  
Vrije Universiteit

*“Awarding badges efficiently: at the Vrije Universiteit, we link the badges for information literacy skills to the results of a small test. If you have achieved a certain score, you will receive the URL to request a badge.”*

A frequently asked question is whether it is possible to issue badges ‘automatically’ from the Student Information System or from the Learning Management System. Or whether the SIS or LMS automatically detects that a badge can be assigned so that no periodic manual check is required. SURF is preparing for this. In the first version of the infrastructure, this will not yet be possible, but it is on the roadmap.

During the pilot, **the University of Twente** issued edubadges via their Canvas environment. They were the first user of an experimental LTI integration module we built to integrate the edubadges environment into Learning Management Systems. The UT issues edubadges for participants of the ‘Didactical Introduction for Student Assistants’ pathway (DISA)’. Students are trained to fulfil the role of lecturer, in particular during working groups, supervised self-study and practical or lab work. Sharing information, assignments and all communication between the DISA trainers and the prospective student-assistants takes place via a course site in Canvas.



Karen Slotman,  
University of Twente

*“It’s really handy that, thanks to the LTI integration, there is now an Openbadges menu item in Canvas where students can go, or be referred to, when they have completed the DISA training in full. All communication now takes place through a single channel: Canvas. From registering for the course up to applying for the edubadge!”*

## 5 Implementation and scaling up

It's a big step to go from initial experiments to broad scaling up within your own institution. Many institutions that took part in the pilot have provided advice on this. Basically, there are two different strategies: the fast one and the thorough one.

### 5.1 The 'just get started' strategy

Several institutions have decided to quickly start experimenting in a limited context with a small group of stakeholders and to see where it takes them. They therefore explicitly did not first seek broad support within the organisation as a whole, but only started to do so in the second phase, based on successful pilots.

**Albeda** linked a press event to the issue of the first edubadges to their students. The positive press attention gave a nice boost to the internal interest and (administrative) support for the continuation of the pilot.



### 5.2 The 'patience pays off' strategy

Other institutions in the pilot considered it absolutely necessary to have a widely supported strategy before issuing badges. All kinds of different areas of expertise can potentially be involved: legal advisers, examination boards, quality assurance, educational advisers, ICT and functional administrators, and of course the administrative layer. The advantage of broad internal acceptance is that it allows you to position the issue of well within your own organisation right from the outset.



Inge van Rijt,  
Tilburg University

*"A pilot is now being started at a single faculty, but with a strong focus on gathering input for the broader strategy."*

### 5.3 Working towards a strategy paper

Working towards a strategy paper that can be discussed by the institution's governing body is a good way to move from the pilots to scaling up. This would assess, for example, what the institution might gain from the use of badges, in which context this would best fit, and also possible risks.

At the **Hanze University of Applied Sciences**, the pilot was picked up as part of the flexibilisation project and a steering committee was set up. On conclusion, an evaluation report was prepared, which included positive recommendations for the follow-up process. The steering committee adopted these positive recommendations.

**Utrecht University** is testing edubadges in a very small, well-defined context in order to evaluate and optimise the technical process surrounding the requesting and issuing of edubadges. Furthermore, the project team is trying to map out how other departments and study programmes within the UU view edubadges, and how they view the use of edubadges within the context of their teaching/training offer. At a later stage, edubadges will be deployed on a larger scale according to an action plan based on this input.



Aleid de Jong,  
Utrecht University

*"At the end of the pilot, we will deliver a report of recommendations including a proposal for a badge strategy. This strategy must meet the needs of our educators."*

### 5.4 Seeking scale in the relevant community

You can look to achieve scale not only within your own institution, but also beyond in the wider education community. This could be particularly promising when working from the same, recognisable framework of competencies. The advantage of this is that the badges will also become comparable on a cross-institutional basis. Ideally, it would even be possible to work based on a single infrastructure so that the badges would not have to be managed separately by each institution.

The **Vrije Universiteit** and **Wageningen University & Research** participated in the edubadges pilot as a duo, jointly developing an information literacy skills badge. The community of academic libraries is seeking to achieve synergy in this field.



Marian van Harmelen,  
Wageningen  
University & Research

*"Edubadges for information skills are based on standardised international frameworks and models, such as ACRL frameworks, SCONUL and the Research Development Framework. The Vrije Universiteit and Wageningen University & Research have coordinated this process, with the aim of ensuring that the skills and competencies would be comparable when transferring to another institution."*

## 6 Responses from students

The central reason for introducing badges is that we want to open up new opportunities and possibilities for students. But it is difficult to ask someone for their opinion about something unknown that has not yet been personally experienced. As part of the pilot, SURF met with student organisations ISO and LSVb on a number of occasions, and also hosted a special student feedback session on one occasion. A number of points were raised:

### ► Fear of stress

Dutch students stated that they were afraid that earning badges as an extra will be added to a long list of tasks that they already feel they have to deliver. It could therefore cause added stress. Particularly when it comes to profiling for the labour market, students are afraid 'that this will be another thing to do, because if my neighbour has done the same, and we're both going to apply for the same job, I can't afford to be left behind'. Incidentally, this argument seems to be a specifically Dutch phenomenon; it was not recognised in any case by our research partner Rick West from Brigham Young University, who interviewed groups of students in the United States and Slovenia.

### ► Extracurricular badges are especially interesting

A signal that seems to contradict the previous point is that students (e.g. ISO) told us that they find extracurricular badges particularly interesting. These are badges that recognise achievements for which there was previously no recognition or certification. There seems to be less interest in badges representing the completion of a formal teaching or study component. ("I got my grade, what do I need a badge for?")

In cooperation with the Student Union, the **University of Twente** has for many years been awarding recognition to students who have completed a full-time committee year. Students have to apply for this. They have to write a report reflecting on their experiences; the report is checked, and if considered necessary, will be followed by a viva voce to discuss what the students have learned in their committee year. The paper version of the recognition bears the signature of both the Rector and the Student Union, which students consider valuable.



Manouk Ramselaar,  
Student Union  
University of Twente

*"When we went to find out if students were interested in edubadges in addition to paper-based recognition, we were met with great enthusiasm. In the current era, a digital form of recognition that can be displayed on a LinkedIn page, for instance, is considered more useful than a paper qualification which, in most cases which will end up gathering dust."*



Roelien Wierda,  
NHL Stenden University  
of Applied Sciences

*"Our badges of excellence definitely have added value in the eyes of the students. They appreciate being awarded these badges very much."*



### ► User-friendliness is essential

Teachers want to be able to issue badges easily, and students need to be able to claim them easily too. If the steps that lecturers and students have to take in the relevant systems are too complex, the bounce rate turns will be high. Students think that they should be able to obtain a badge at the push of a button. The clearer the added value of the badge in the eyes of the student, the smaller this effect is likely to be.

### ► Guidance is needed

Badges in higher education are a new concept. Students who received a badge for the first time during the pilots sometimes wonder what use it will be. It may be useful to set up a landing page on your institution's website explaining what badges are and how students may be able to use them. See, for instance, [pathways.tue.nl](https://pathways.tue.nl) of TU/e or [the special webpage of Deltion](#). Using a badge on LinkedIn is a logical next step, but it doesn't work very intuitively.



Linda Scheel,  
Eindhoven  
University  
of Technology

*"At Eindhoven University of Technology we want to stimulate the intrinsic motivation of students by offering development pathways for extracurricular skills across the Eindhoven University of Technology. For example, if a student wants to become a designer or an entrepreneur, they can choose a pathway to progress their development in the right direction. Eindhoven University of Technology is currently trying to find out which skillset is important to employers and what role employers can play in helping develop this."*

### ► Different target groups, different experience

The regular, Dutch bachelor or master student will undoubtedly view badges differently than an international student or a professional who receives a badge as part of a lifelong learning programme, for instance. The explanation you offer students about badges should be responsive to these differences.

**NHL Stenden University of Applied Sciences** has issued badges to international Erasmus students who studied in Leeuwarden on a temporary basis. They were enthusiastic about the badges they received because they could take them home as a digital certificate. In fact, they liked the fact that the badge did not include a grade or score, because grades are difficult to compare across national borders and incorrect impressions can quickly arise.



Wim Sieman,  
Albeda

*"The ceremonial handing out of the first badges during a press moment has given us a lot of fresh energy. The students are very happy and it has a lot of impact on them."*

## 7 Role of employers

Students say that badges are particularly interesting if they have a value on the labour market, while employers say that badges are interesting if they are widely used in the education system and if their value is quickly and clearly understood by the labour market. The classic problem of the chicken and the egg arises here.

### 7.1 Approach by subject area

Perhaps the easiest way to solve the problem of making the value transparent is through a subject-specific approach. Badges should then be constructed according to an existing common framework, in order to be recognisable in a particular field. You could perhaps link badges to the credit systems used by some professions for professional development or permanent education.

### 7.2 Matching skills with employers in the region

Another way to get employers involved in working with badges is to give them an active voice in the competencies that are embedded in badges.

**Eindhoven University of Technology** has chosen to link badges to the employability chain. Badges therefore become a tool to promote employability. To do this, skills acquired in an extracurricular setting are made transparent. These skills have been inventoried in interviews with employers in the region, who have indicated what they are looking for.

## Lessons learned by SURF

SURF's team has worked on the edubadges pilot project from the perspective of various areas of expertise. By doing this, we have gained many experiences that are essential for the future design of the edubadges service. What lessons have we learned from this based on our various areas of expertise, and what design choices has this led to in the services we will be offering to the institutions in the future?



**Jenny de Werk**

Jenny managed the coordination of the educational institutions throughout the pilot phase. Among other things, she was involved in concluding the data processing agreements. She also supported the institutions that were involved in the process.

COORDINATION OF  
PILOTS

### Jenny's lessons learned

#### Building a vision

The innovative character of badges makes it difficult to mark a clear point on the horizon. As an institution, you have to learn through small practical experiments how using badges can offer clear added value for your students. Badges are permanent and will basically last a lifetime. So it feels a bit strange to experiment. But to make progress, both individual institutions and the education community at large still need to gain practical experience.

#### Complexity

While you may start pragmatically, which is a good thing, you still run into essential decision-making issues: how granular will the badges be, how do we describe them, in what language should we issue them, whose task will it be to issue them, what will their impact on the education process be, and so on. It's really quite a job to get this right and assign the responsibilities across the institution. If one study programme uses badges and the stakeholders are enthusiastic, ideas for other uses can quickly be added. This creates new opportunities, but there is also a danger here if no broader strategy is in place. There is a risk of uncontrolled growth of badges of all shapes and sizes. It takes time to design the right approach and to regulate the commitment. So you need quite a bit of perseverance to make this work.

#### A good user interface is essential

The pilot institutions told us that the workflow in the edubadges pilot environment was too complex. We are therefore going to rebuild the front end of the edubadges environment. Users will have to click much less and we will give them better information on where they are in the flow. We have hired a UX specialist to help us with this. The new environment will hopefully be much more intuitive than in the pilot.



## Frans Ward

Frans was involved in the development of the pilot as technical product manager. He manages the development team that builds the application, regularly coordinates with the administrators of the Open Badge Standard and also keeps a close eye on other relevant developments in the field of technology.

TECHNOLOGY

## Frans' lessons learned

### Use open-source code

We got off to a flying start by building on Badgr's open-source code. By working with open source, you build on the work of others and make your own work available to others in return. The downside is that the work of others never quite fits your own needs and various adjustments are needed. In our case, for instance, this related to the application framework and the interface. In the course of time, the modifications have gone so far that the edubadges fork is now no longer 100% compatible with Badgr. And in order to provide a better user experience for the production service, we are going to redevelop the front end from scratch and improve the entire user flow.

### Signed vs. hosted badges

There are basically two ways to issue badges:

**signed:** All information in the badge is encrypted (signed), given to the recipient and deleted at the source.

**hosted:** The source information is kept in a database managed by the issuer.

In the pilot, we explored both options, but chose to continue working with hosted badges. The main reason for this is that development of badges is still in full swing and we do not consider it responsible to lose the source information at this point in time. Incidentally, after the 3 years that a statement of consent remains valid, it will still be necessary to destroy the source information, unless we request permission to retain the data once again. Or unless a different valid basis (in GDPR-terms) to retain the information is found at that time. Yet another option is that a different organization, such as DUO, which does have a valid basis to retain such data, would be willing to store this information and step in.

### Link to eduID

We need to find a way to assure the identity of the badge holder across institutions. There must be an assurance that the badge has actually been issued to the person in question, i.e. that the badge, for instance, has not been forwarded to someone else and is being used fraudulently. Most badge platforms work with an email address verification to address this. However, we do not consider this appropriate because we want to ensure the badge is verifiable in the long term and use the same ID across institutions. Ideally, you would want to use an existing authentication service, such as DigiD, for this. However, SURF is not entitled to use DigiD. We are therefore using eduID, a concept that SURF is developing for this purpose.



## Sebas Veeke

Within edubadges, Sebas is responsible for privacy and security issues. He's been busy looking for solutions to issue and store edubadges in a way compliant with the GDPR. He also managed a software audit.

PRIVACY AND  
SECURITY

### Sebas' lessons learned

#### GDPR

The GDPR basis on which edubadges can be issued is a very tricky issue. In the pilot period, we worked on the basis of 'consent', which means that each student gives their consent separately for each badge they want to receive. However, consent has a limited shelf-life, but this is not practical for edubadges, which ideally last a lifetime. We are now in discussion with data protection officers at institutions that participated in the edubadge pilot to find a suitable way forward together. For example, whether education institutions may regard an awarded edubadge as an alternative representation of a student's grade for the completion of an examination. There are many differences of opinion between educational institutions within and between educational sectors about the basis for issuing edubadges. Not to mention the various legal frameworks in the education sectors. Yet it is important that we work towards a broad consensus for the sake of exchangeability and flexibility. Until then, we will make the edubadge infrastructure suitable for a variety of bases.

#### Following the correct path

In order to make the necessary arrangements in the field of privacy and security, certain officials have to be involved, and data processing agreements have to be signed. In brief: the relevant regulations must be observed. Because everyone went through this exercise in the pilot, we now have a clear picture of who the right officials are and what route to take when we start working with the final infrastructure.





## Frank Pinxt

Frank is responsible for implementing structural service processes. His challenge is therefore to take innovations from the pilot phase and to manage their development to form a solid, reliable service that is ready for the years ahead.

DEVELOPMENT  
SERVICE PROVISION

## Franks lessons learned

### Complex process within the institution

Edubadges is a different type of service than SURF is used to providing. It's closer to the primary process of teaching. Because of this, the decision by an institution to purchase a service such as edubadges is a complex one. The people who were involved in the pilots are usually different from those who will take the decision to procure ICT services, and then there is the matter of strategic and administrative issues that you touch on with this service: what kind of education do we actually want to provide and how do edubadges fit in? It is therefore important that the right contacts are made internally and conversations about the experiences are held. At SURF, we have helped with this by carrying out on-site visits. This was time-consuming for us, but we saw that it really helps.

### Flexible positioning of the service

The decision on how to use the service is all the more complex because edubadges can be used in many different contexts. There is a big difference between use as a microcredential in regular accredited education, or use as a form of recognition for extra-curricular activities. The situation is still a fluid one.

### Start with a minimum viable product

This autumn, we hope to be able to start the service. This will be a service with limited functionality, as there is little development time and limited resources. A number of points that were put on the wishlist during the pilot will not yet be included. For instance, the links with LMS and SIS, or the wish to make parts of the edubadges service available as an app. In the first instance, we will be focusing on good usability with as little complexity for the user as possible. The extras should follow later. What is good, though, is that the pilot has already given us a good understanding of the wishlist of the institutions.

### Services for active students

Badges must remain valid even where students are no longer enrolled at an institution. By doing this, we are stretching the boundaries within which SURF normally operates. In the long term, SURF is therefore not the natural home for a register of badges issued, for instance. We are now looking to find the right partner for this part.



## Alexander Blanc

Alexander is overall project leader of the edubadges innovation project. He has been with the project since its inception and was immediately convinced of the opportunities it could offer. He was in charge of the overall coordination of the pilot and initiated the handover to service provision.

PROJECT  
MANAGEMENT  
INNOVATION

### Alexanders lessons learned

#### Do not underestimate the time frame

Edubadges has taken quite some development time; we started four years ago, and that time has flown by. The pilot period has been extended twice. But it simply cannot be done any faster unless we would perform the development work in splendid isolation. But that wouldn't work either. Collaboration with the pilot institutions has shown us that, in practice, the badges are used differently than we had envisaged beforehand. This is valuable knowledge because we want to support a variety of scenarios.

#### Technology does not stand still

We have now made certain choices, such as the technology choice to use the Open Badge standard, and to work with hosted rather than signed badges. Such choices are always debatable because technological developments are rapid and have not yet fully crystallised. For example, new standards for digital certificates are currently emerging that may potentially be more suitable for the purpose we have in mind for edubadges. But if you keep waiting, you won't get anywhere. You also need to use the momentum, take decisions and make progress within the uncertainties that exist. It also means we will have to keep innovating once the service is running!

#### The road is (part of) the goal

Just by carrying out this project, we have already set something in motion. Even if the whole project were to fail in the long run, this project has already given a boost to the debate on modular education. This is a broader international development on how we should organise the educational process. Our edubadges project investigates how you could support modular forms of education by using ICT infrastructure. This has an impact, and the Dutch higher education community will benefit from it regardless of the outcome of this specific project.

#### SURF as a national hub

With a project like this, it is important that it is tackled at a national (or even international) level. If each institution were to choose its own solutions, you would not get the best out of them. You'll need different areas of expertise to get this off the ground: technology, the use cases from the institutions, knowledge of user experience and metadata, but also policy and legislation. For me, this project is an example of why it is important to have a national hub, such as SURF, that can combine national strengths and bring the expertise together.



## Janina van Hees

### STAKEHOLDERS

At edubadges, Janina is responsible for external contacts and policy issues. In cooperation with the Flexibilisation Zone of the Acceleration Plan for Education Innovation with ICT, Janina is investigating how modular education in the Netherlands might take shape and how edubadges fit in with this. Together with Frans, she also maintains relations with similar initiatives internationally.

## Janina's lessons learned

### Collaboration is essential

Within edubadges, I am involved in particular in maintaining contact with all stakeholders. This is actually unusual for a SURF project. Usually, we start from the technology and then discuss this with IT contacts at the institutions. Here at edubadges, however, you have to combine many different areas of expertise to get this off the ground: the technology and the use cases at the institutions, of course, but also subject-matter expertise, such as the standardisation of metadata, and the policy-level and legislative aspects. In the course of the pilot period, we therefore spoke with many parties. In addition to the pilot institutions, these included the Ministry of Education, DUO, Nuffic, the Bologna expert group, examination boards, employers' organisations, students and various others. Incidentally, the Flexibilisation Acceleration Zone has become an excellent partner in this, because they have taken a lead in bringing the policy aspects forward.

### Microcredentials versus badges for non-formal education

A very hard nut to crack during the pilot - and still now - is that you could use badges in regular, accredited education as well as in non-formal or extra-curricular contexts. There are good arguments for both uses. However, they are very different scenarios, with different consequences. The challenge is to ensure that a person who consults a badge has a quick grasp of the position and value of that badge in the broader context. The metadata and the design of the badge play a role here, as does the placement of the badge in a framework. We have had many conversations about this: whether or not to add a design element to make this distinction clear, whether or not to include ECTS and EQF as mandatory metadata for microcredentials. The grey area of badges that are difficult to classify in one of these categories is relatively large. I see the same struggle in comparable projects internationally.

## International dynamics

There are many international developments that are relevant to edubadges, in terms of both technology and policy aspects. To name a few:

- development of W3C's verifiable credential standard is in full swing. A consortium of educational institutions led by MIT in the US is looking into its use within higher education. In the Netherlands, TU Delft is involved in this initiative.
- As part of Europass, a Europe-wide application is being developed under the label 'European Digital Credentials Initiative'. Edubadges is participating in this initiative as a pilot partner.
- A foundation is currently being set up under the name "International Council on Badges & Credentials", which may develop new tools in the near future.
- The MicroHE project, funded by the European Commission, is expected to publish a policy analysis on microcredentialing in the context of European higher education later this year.
- The European Commission is currently establishing an expert group to develop a vision for a European Microcredential Framework.

## From national to international

With the experiences from our edubadges pilot, we are well-placed to connect with these and other international developments. Our international colleagues are valuable sparring partners and ultimately also our cooperation partners. We believe that you first need to ensure that you have good cooperation within a good infrastructure at the national level, and this will provide a good basis for international connections.



## Credits

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Janina van Hees SURF

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