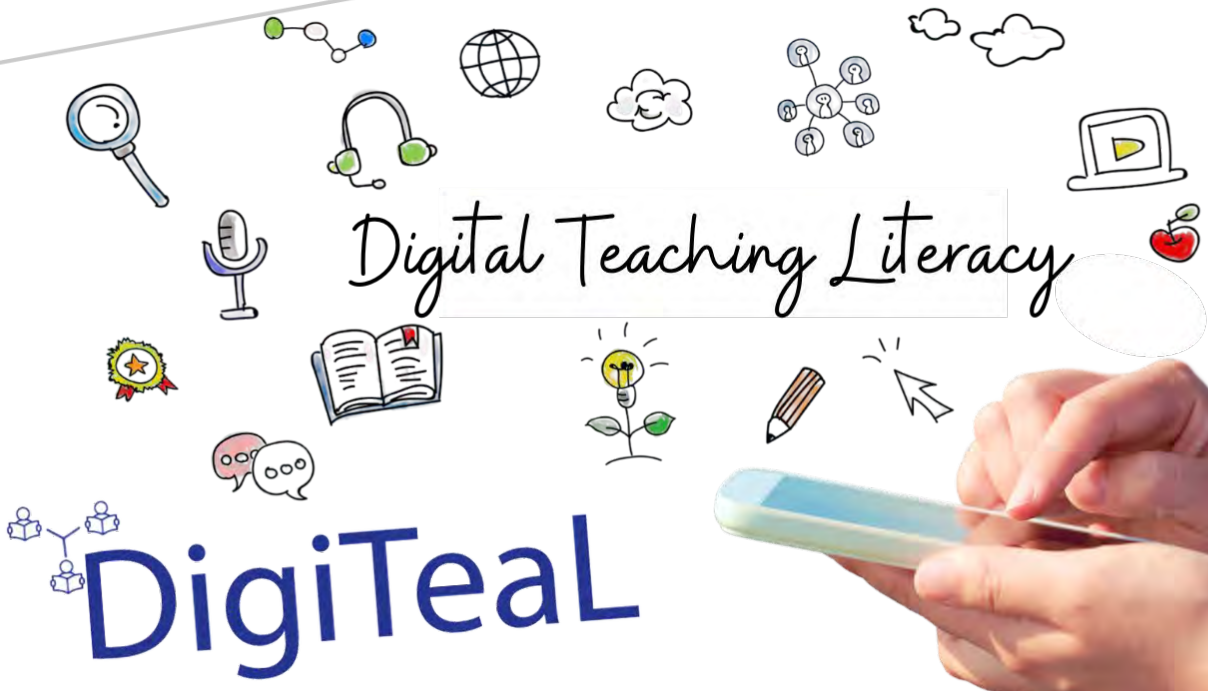

OPEN BADGES USER GUIDE

N.C.S.R. “Demokritos” - September 2022

Abstract

This Open Badges User Guide shows teachers how to produce an Open Badge for any topic they teach, and includes example videos of set-up of the MeLDE Open Badges system.

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INTRODUCTION

This Open Badges User Guide is addressed to teachers and educators and aims at guiding them in the theoretical and practical processes of setting up an Open Badge assessment system for their teaching material.

The guide also contains example videos of setting up the MeLDE Open Badges Platform for more visual learners.

In particular, this guide is a resource for educators interested in understanding how Open Badges work and how they can be implemented in their classroom.

For those teachers who wish to learn more about Open Badges, a more detailed version of this guide is available (in English only). In that version, a more analytical historical and theoretical overview of Open Badges is provided, along with more practical and technical aspects and terms, making it a more advanced and more technical document.

The Open Badges User Guide is divided into three sections:

1. Theoretical Background – history and context of the Open Badges system
2. Practical Elements – what you need to have in place, to use Open Badges
3. Moodle Open Badges Examples (Videos) – if you are ready to set up an Open Badge, you can go straight to this section for a quick-start guide.

The aforementioned detailed document contains more content in Sections 1 and 2, while Section 3 is exactly the same in both documents.

1. THEORETICAL BACKGROUND

1.1 What are Open Badges?

1.1.1 Digital Badges

Digital Badges are a digital representation, recognition and proof of skills, learning outcomes, achievements or experience such as hard skills (knowledge, competences, etc.), soft skills (collaboration, communication, etc.), participation and community involvement, official certification, etc.

In the words of the MacArthur Foundation, which first introduced the concept of **Digital Badges** in 2011:

Digital Badges *are an assessment and credentialing mechanism that is housed and managed online. Badges are designed to make visible and validate learning in both formal and informal settings and hold the potential to help transform where and how learning is valued.*

To put it simply, a **Digital Badge** is an indicator of accomplishment or skill that can be displayed, accessed, and verified online. These badges can be earned in a wide variety of environments, an increasing number of which are online.

There are two types of Digital Badges:

- Achievement Badges, awarded upon completion of some sort of transaction
- Competency Badges, which represent direct measures of competence

Example:

John attends a crash course on Media Literacy and is awarded with an achievement badge. Mary completes a test at the end of the course such as a quiz, receives an 85% grade and gets awarded a competency badge.

1.1.2 Digital Badges and Open Badges

A Digital Badge is an online representation of an earned skill or a set of skills. However, it is just an image depicting a newly acquired skill.

Open Badges, on the other hand, take that concept one step further and allow the verification of skills, interests and achievements through credible organisations.

Open Badges are verifiable, portable digital badges with embedded (baked) metadata about skills, achievements and experience, and they are shareable across the web. Each Open Badge is associated with an image and information (metadata) about the badge, such as its recipient, the issuer, and supporting evidence; information which is crucial for the credibility of the Open Badges.

Open Badges can be used to set goals, to motivate behavior or convey success. They can be particularly useful for recognizing new forms of learning beyond the traditional classroom environment. Learning happens everywhere, and badges provide a way to validate the outcome.

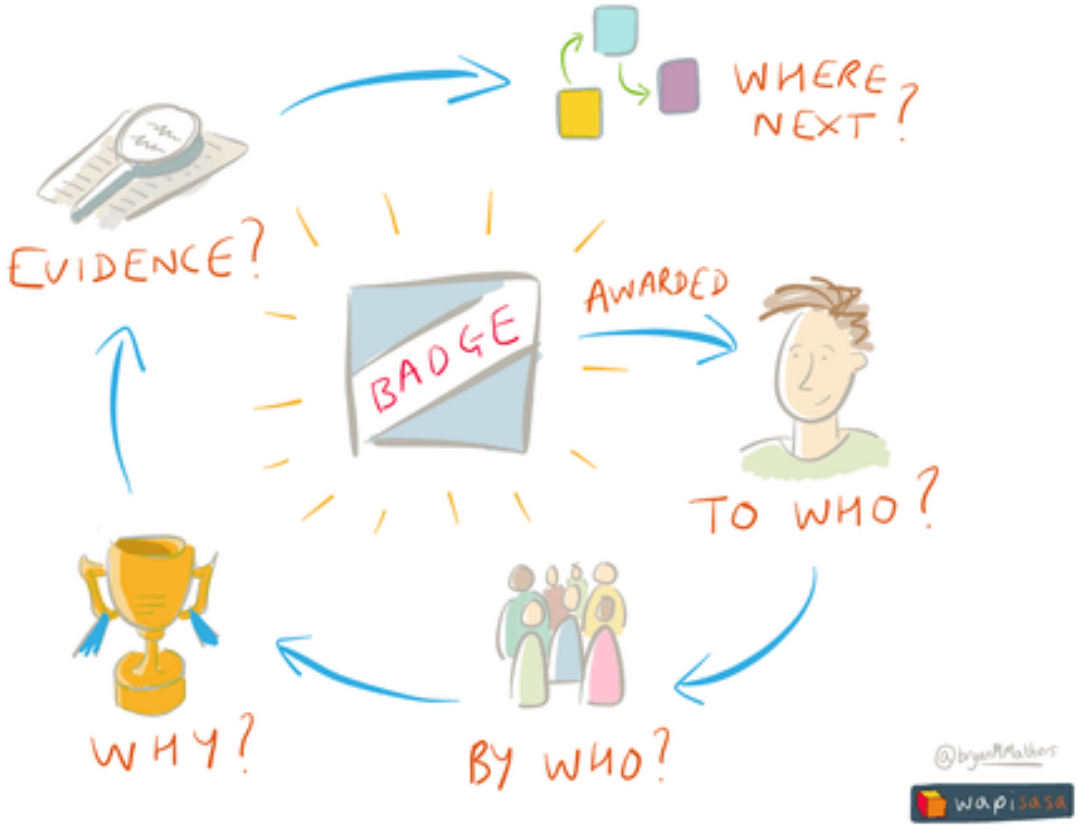


Figure 1: Open Badge Cycle

Thus, in the same way that you bake ingredients together to make a cake, so you bake a badge. And again, just as you can't then remove an ingredient from the baked cake, likewise you can't change an Open Badge once it's been 'baked' i.e. once the metadata (information on the badge) has been finalized and locked.

There are numerous important differences between Open Badges and Digital Badges as Open Badges are:

- **Free and open i.e. not controlled** by any one organisation but rather by a worldwide community, as the Open Badges Infrastructure (OBI) is a free, open-source technology.
- **verifiable,** as they contain built-in data (metadata) that link back to the issuer, criteria and any verifying evidence.
- **evidence-based**, as information about who, why and for what the badge was issued is hard-coded into it as metadata.
- **stackable**, as Badges from one organisation's system can build upon ones from another system. This creates a rich ecosystem that individuals can use to build the story of their skills, knowledge, and experience.
- **transferable**, as Badges earned in one environment can be shared in another.

Figure 2: Open Badges Pros

Open Badges put the **user in control**. Badges are private until they are published by the user. They provide an easy way to show a portfolio of skills without third parties having to wade through a mountain of data.

The following video introduces what Open Badges are and their role in contemporary learning.

Video: What is a Badge?

There are many definitions for Open Badges, the most accurate of which are presented below.

Open Badges…

- are a digital representation, recognition and validation of learning and skills
- are visual tokens of achievement, affiliation, authorization, or other trust relationship sharable across the web
- are used to motivate students/learners and make the learning process more engaging
- allow the creation of synergies between the (l)earners, the badge issuers and the potential future employers, college admission officers, etc., who are also known as badge consumers
- promote open access and participation of all stakeholders involved in the badge process
- can be earned after certain criteria have been successfully met
- represent a more detailed picture than a CV or résumé, as they can be presented in ever-changing combinations, creating a constantly evolving picture of a person's lifelong learning

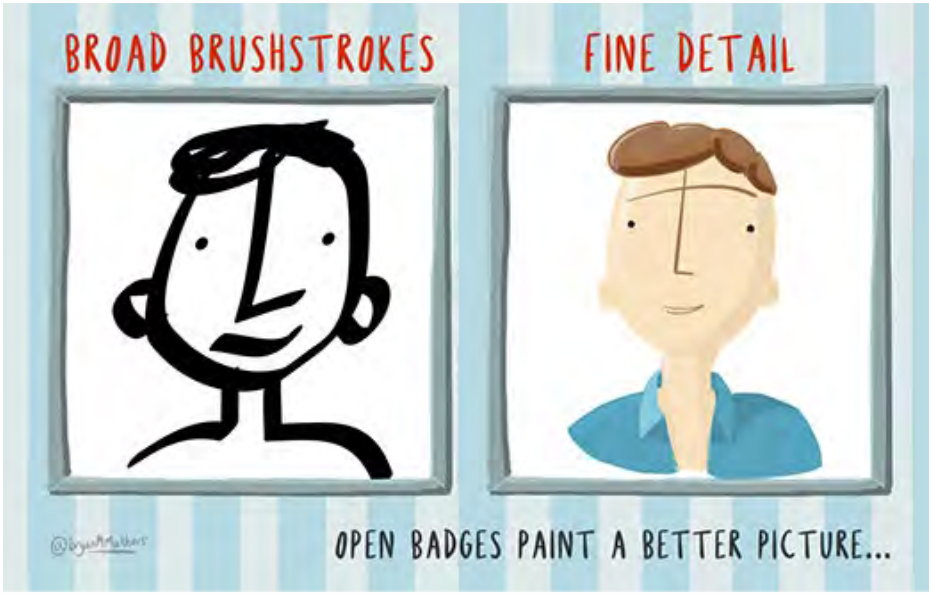


Figure 3: Open Badges Paint a Better Picture...

There are 4 words that sum up the essence and the necessary actions when using Open Badges (Figure 4):

1. **Issue**: Anyone can create (design) and issue Open Badges to recognize and validate the achievements of others.

2. **Earn**: Anyone can earn Open Badges for skills they acquire and knowledge they learn either online or in person.

3. **Display**: (L)earners can display and share their newly acquired Open Badges on their digital profiles across the web as verifiable records of their learning.

4. **Understand**: Potential employers and/or College Admission Officers or, in other words, Badge Consumers, can verify these Open Badges and accept them as records of achievement.

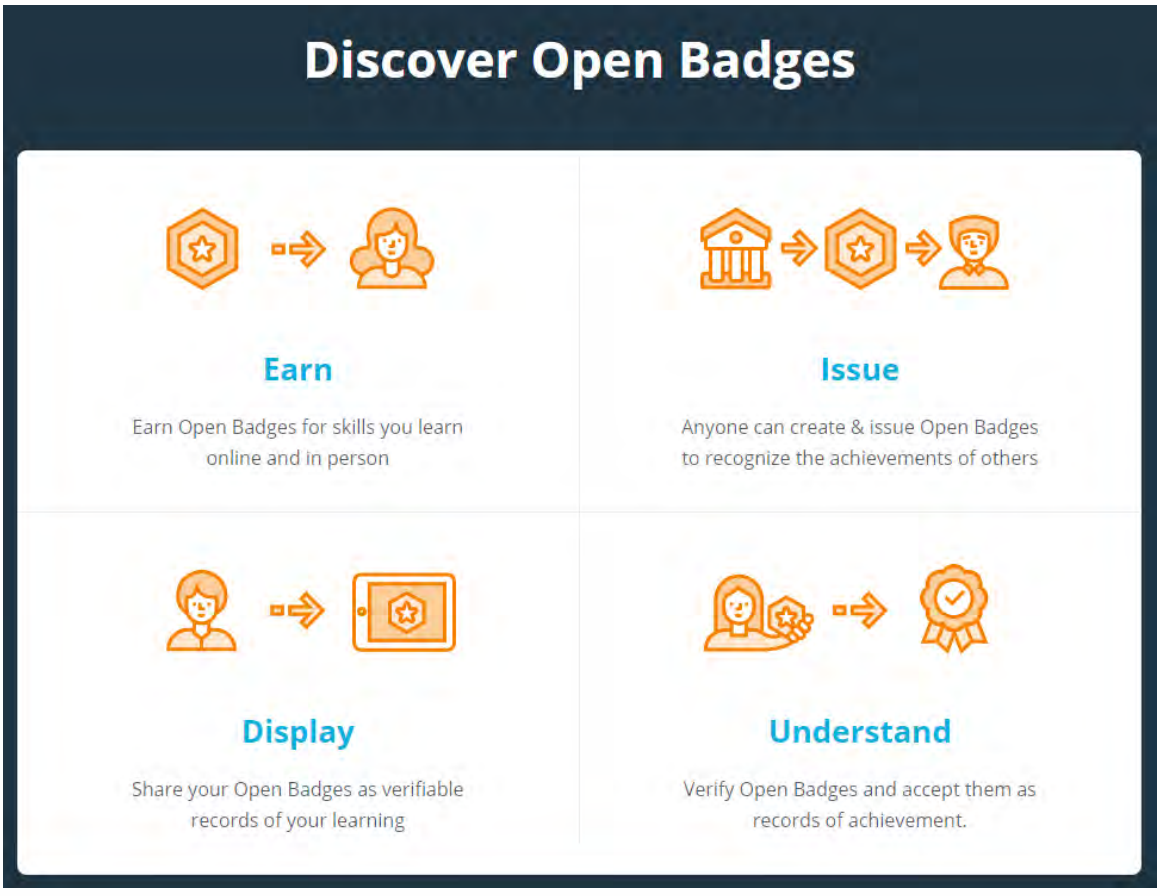


Figure 4: Discovering Open Badges: The 4 Key Words

1.2 Brief History of Open Badges

Open Badges were first introduced in 2011. In 2018, the Open Badges Specification 2.0 was finalized and publicly released. Open Badges 2.0 provides powerful new features such as endorsements, internationalization, and multi-lingual capabilities, versioning, improvements for accessibility, etc. In 2019, Mozilla officially retired the Mozilla Backpack and entered an agreement with Concentric Sky to migrate users and badges to the Badgr Backpack. Finally, in 2020 Open Badges 2.1 was released.

Figure 5: Mozilla Backpack became Badgr Backpack

1.3 Why Use Open Badges?

In a nutshell, the benefits of using Open Badges are:

- Badges can demonstrate a wider range of skills and achievements of a learner acquired through formal, non-formal and informal learning methods and activities.
- Badges can motivate participation and collaboration as they provide an incentive to and encourage individuals to participate in a training program and collaborate with their peers.
- Badges are portable and verifiable digital objects. All this information may be packaged within a badge image file that can be displayed via online CVs and social networks.
- Badges include the description of the achievement: i.e., they describe the particular path a learner undertook for his/her achievement, accompanied by the evidence to support the badge award.
- Badges include information about the earner's identity, a link to information about the issuer and a link to a description of what the badge represents.
- Badges can be used to unlock learning and career pathways. They can be used to support individuals to achieve learning goals, to provide routes into employment; and to nurture and progress talent within organizations.
- Badges can represent personal attributes that matter to employers (such as soft skills)
- Badges can be used in a professional context. Thousands of organizations, including non-profit organizations, major employers or educational institutions, issue badges in accordance with the Open Badges Specification.

1.4 How to Get Started

For teachers working in a school or any other educational setting, the first step is to ensure that the school/educational center they work at possesses a modern, reliable and flexible system to issue and award Open Badges such as a Learning Management System (LMS), which is properly maintained and supported by a technical team. This system will need to run for as long as you want your learners to be able to verify their badges, so consider a long-term operation and support plan.

It must be noted that some LMS platforms natively support Open Badges, while other LMS platforms offer interoperability with specific badge platforms based on partnerships with these badge platforms.

In addition, it is essential that all teachers and students understand how badges work in order to use them in such a way to maximize their benefit and add value to a training program. Especially for students, it is imperative that they fully understand how they might earn and display their badges, as this is vital to the success of any implementation. This could be achieved by providing an initial badge for a very simple task, such as adding a picture to their digital profile on the used LMS in order to get learners started with badges. In addition, they can be provided with a guide as to where and how they can be shared either on their digital profile, an external backpack such as Badgr and/or their Social Media profiles.

The next step is to establish a framework for the design and issuing of badges. This framework can be revised at any time but it should include an outline of how badges will be:

Designed → Issued → Earned → Displayed → Shared

1.5 Open Badges Actions

Open Badges encompass the following seven actions by all involved stakeholders:

1.5.1 Authoring

The first step in the authoring process is probably to determine what skill or achievement to recognize, and then to define badge levels. In addition to this, badge authoring encompasses all visual (design), syntactic and semantic construction of the badge. Badges may be created and designed using local (desktop or mobile) or web-based graphic design programs. These can include:

- Adobe Photoshop
- Adobe Illustrator
- Vectr

There are also online services that offer “point-and-click” badge creation along with access to badge design libraries, including

- Portfolium
- OpenBadges.me
- Canvas

1.5.2 Issuance

Any individual or organization that has access to a system that supports Open Badges can issue badges. Any entity that can be described with a name, description, URL, image and email address is a possible candidate to become an Issuer. The important part is that the Issuer profile should represent the person or organization considered trustworthy by badge earners and those that view the badge's information, i.e. the badge consumers (employers, college admission officers, etc.). As mentioned before, the way one issues badges depends on the system used. This might be a LMS such as Moodle, which offers the capability to upload badge images, set the criteria to earn and also to display and share them and perhaps most importantly, host the curriculum (educational material) available to the users.

1.5.3 Awarding

Next, the evaluation of those who meet/fulfil the set criteria (complete the task/course) takes place, to determine who will receive the badge. Once the set criteria have been met, badges can be awarded to the (l)earners either automatically or manually by an authorized person such as the teacher of the course through the LMS.

1.5.4 Earning

(L)earners should take the necessary actions in order to successfully fulfil and meet the set criteria and become eligible to earn a badge. The range of activities is vast and can be the completion of a course, the successful completion of an assessment (quiz, assignment, etc.), etc. If (l)earners interact with the LMS, the earning of a badge can be an automated process, otherwise it will be manually awarded to them by their teacher through the LMS. Once a badge has been earned, it is time to display, share and verify this badge, which is the culmination of the Open Badges process.

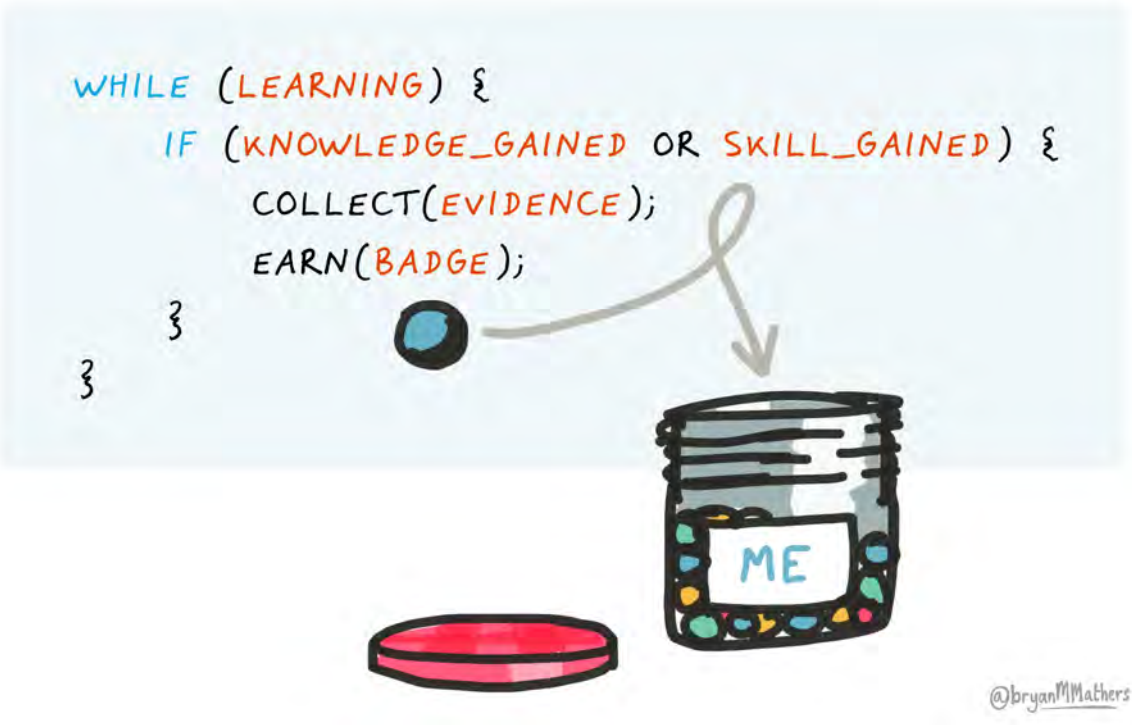


Figure 6: Learning and Earnin

1.5.5 Displaying

A badge is linked to an individual's email address, so it is personalized and usually exportable to an external Backpack service such as Badgr, which is a repository system for storing, managing and sharing badges. Through a Backpack, badges can be shared individually, or as a collection in different formats and to a variety of sites such as an LMS Digital profile page, social media, personal websites, job sites, professional profiles (e.g. LinkedIn), blog sites, email signatures and online resumes.

1.5.6 Sharing

It's one thing to earn a badge, but that doesn't mean anything if no one can see it. This is where the significance of sharing comes to play. Open Badges are designed to be shared. By sharing them, individuals exhibit their achievements to others and turn them into a valuable currency to unlock new opportunities. A primary agent in hosting and sharing badges, along with the evidence and artifacts linked to them, is the fast-growing technology of the Backpack. Backpacks are repositories for evidence (work samples, artifacts, projects) and certifications that link to an individual's competencies and achievements. Competencies are also discoverable when competency badges are embedded in other sources, such as on blogs, websites, e-Portfolios, professional networks, job applications, social media sites/profiles, email signatures and resumes.

1.5.7 Verifying

If a (I)earner can't share their badge, and if a third party can't verify it, then its value is significantly diminished. This is one of the main reasons for the Open Badge standard. Third party verifiers (consumers) such as Employers and/or College Admission Officers can see the various metadata associated with the badge (Badge name, Issuer, Criteria, Earner, Date, etc.) to determine who issued it and whether it is valid.

At the end of the day, the overall value of an Open Badge depends on the consumers' perception and the following values (Figure 7):

- **Issuer** who can be anything from an institution, company, etc. to a group of people or an individual
- **Badge** meaning (attribute, knowledge, achievement, competence, participation, etc.)
- Who has **endorsed** the badge (institution, company, group of people, individual etc.)
- **Journey** (learning pathway, mapping, milestone, etc.)

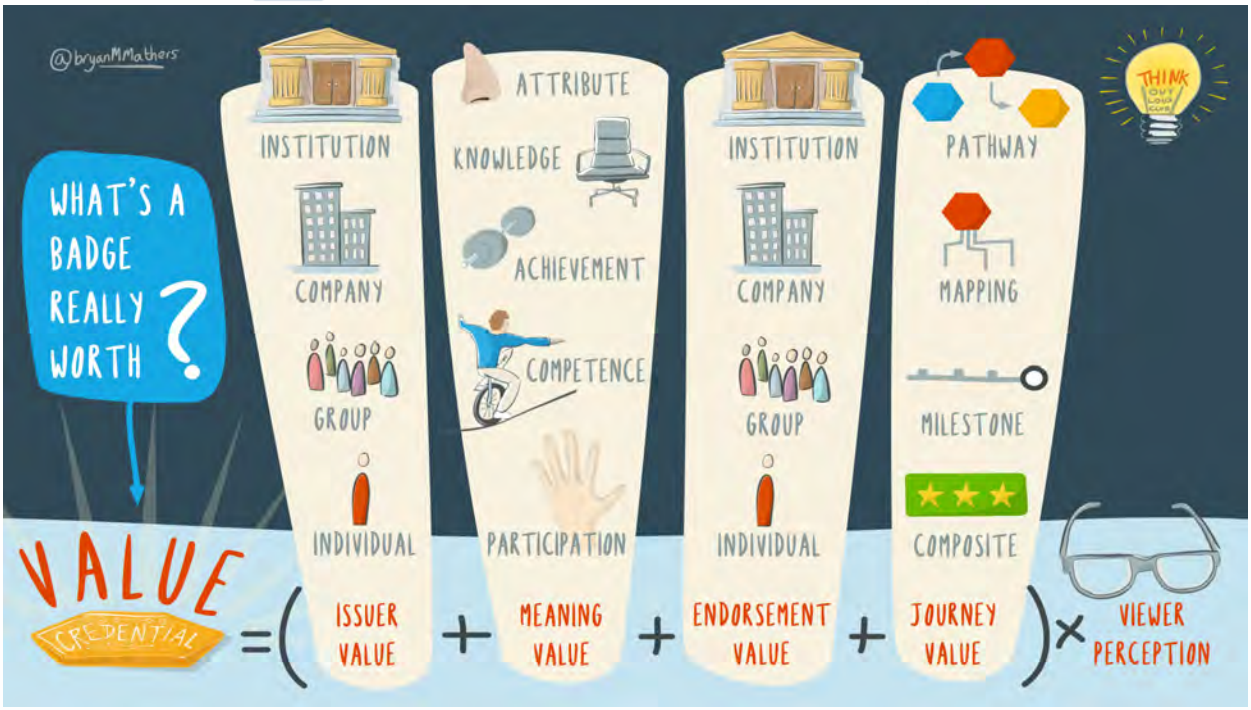


Figure 7: What is a Badge Really Worth?

1.6 Open Badges Considerations

1.6.1 Audience

The audience an Open Badges Issuer addresses is not only the direct audience, i.e. the (I)earners who are the Badge Recipients but also the indirect one, the so-called Badge Consumers, who could be potential employers or college/university admission officers. Every badge audience is different, so one needs to think carefully about their audience.

When issuers think about their audience, they should consider the following questions:

1. Who are they?
2. What motivates them?
3. How do they want them to change, learn, or develop?

1.6.2 Badge Taxonomy (Badge Categories)

We know that Open Badges can be issued for literally anything. However, it is always a good idea to categorize badges in order to keep track of things. Figure 8 depicts a simple badge taxonomy to help issuers think through different situations.

Figure 8: Badge Taxonomy

1.6.3 Collections of Badges - Learning Pathways

More often than not, issuers realize the need to move beyond single badges and start connecting badges in numerous ways such as:

- Collections of badges based around a particular theme/topic
- Badges that add up to an overall badge, e.g. a meta-badge
- Badges that would lead to an opportunity

Badges can be sequenced in a way that narrates a learning journey or "pathway" that (l)earners follow and vary in duration and complexity. As depicted in Figure 9, these pathways can be formed as:

- **Stepping stones**, where badges must be earned in a particular order
- **A collection** of badges relating to a subject, from which someone must earn a specific number
- **Pathways** forged by the individual themselves from badges that all relate to a particular theme

Figure 9: Badge Pathways

1.6.4 Credibility of Open Badges

One of the most important questions that Issuers of Open Badges ask themselves is:

"How do you create a credible badge system?"

Likewise, when Consumers receive a badge and want to check its validity, they often wonder:

"How do I know I can trust badges?"

Credibility is a key issue when using Open Badges. Issuers should aim to issue badges that are credible:

- to their direct audience ((l)earners) and
- their indirect audience (consumers)

In other words, issuing badges that are:

- Viable
- Valid
- Reliable

It is important to always bear in mind that the 'value' of a badge doesn't depend on how difficult it is to earn it, but rather on whether the action taken to earn the badge was meaningful or not.

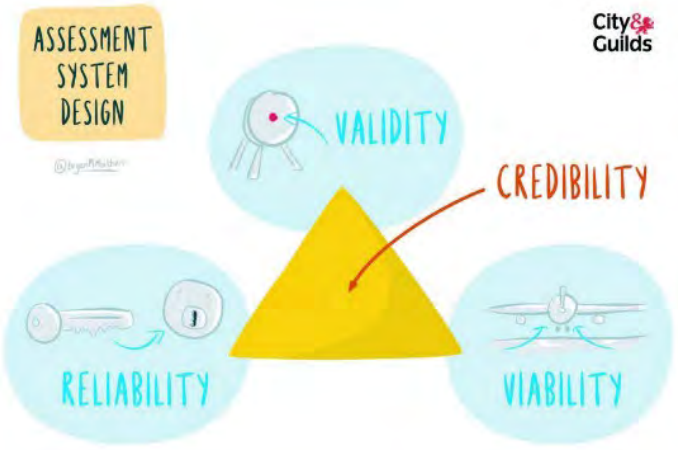


Figure 10: Credibility of Open Badges

Figure 10 illustrates that credibility is actually a function of three different elements:

- **Validity**: Will the badge meet a specific need? Will it have value for the (l)earner and consumer?
- **Reliability**: Will the badge be assessed consistently? Will the technology used to issue, earn and display the badge work well?
- **Viability**: Does the badge have the correct criteria for what needs to be recognized?

1.6.5 What to Avoid

One should consider things to avoid when using Open Badges in order to ensure their credibility such as:

Overbadging

Offering badges for the majority of or all course activities could potentially diminish the value of each badge. The optimum number of badges within a course depends on the length, type and structure of the training.

Zero Challenge Badges

Offering too many, and at the same time easily earned, badges, could limit the sense of achievement a learner may feel from obtaining that badge, and again diminish the perceived value of the award. Earning a badge should provide some type of challenge to the individual.

Meaningless Badges

If badge issuers find any difficulty in describing what the badge represents, they should consider whether the badge has any meaning or relevance to the (l)earner or others viewing the badge.

1.6.6 Open Badges Endorsement

Open Badges are like commercial products that have to be endorsed by a certain institution in order to be promoted in a wider sphere and to gain credibility and ultimately, the support of the Open Badges Consumers.

The more endorsements an Open Badge receives, the more credible it looks to both (l)earners and consumers as long as the quality of these endorsements (i.e. how credible and competent are the endorsing parties?) remains absolutely clear.

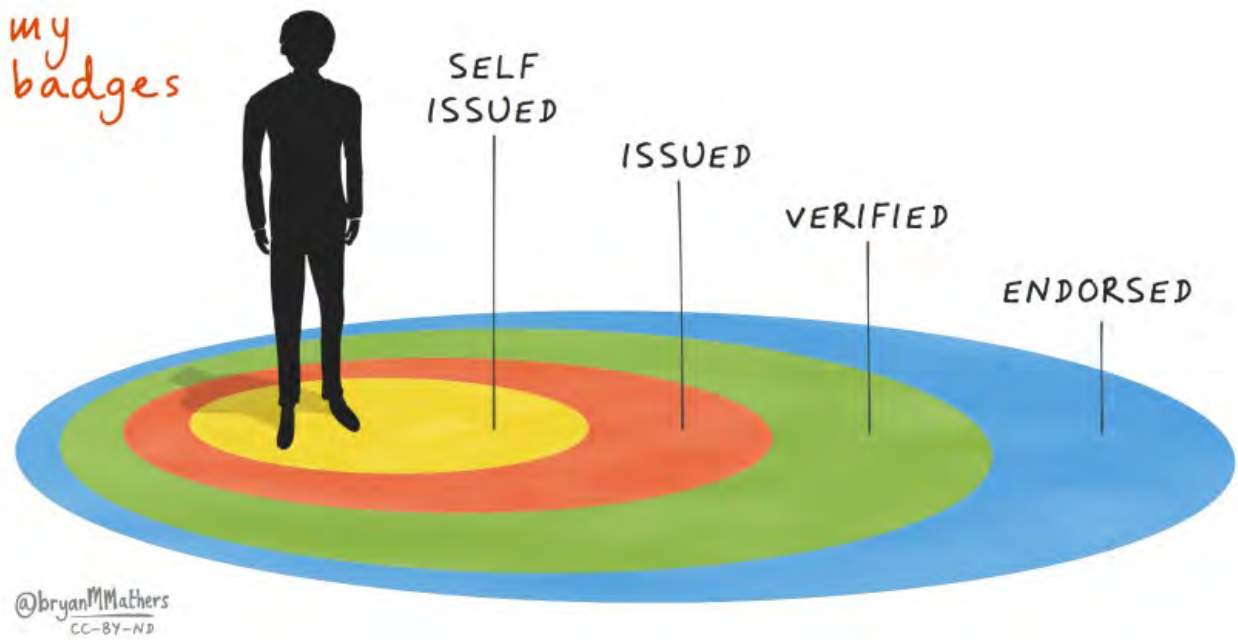


Figure 11: Open Badges Endorsement

2. PRACTICAL ELEMENTS

2.1 Open Badges Life Cycle (Eco-System)

Figure 12 depicts the life cycle of an Open Badge (Open Badges Eco-System):

Issuers, who can be anyone from Education providers to a website or any organization, first **create** (**design**) and then **deliver** (**award**) a **Recipient** (**Earner**) baked Open Badge images.

Earners then **store** in a **Backpack** or any other **displayer**.

The **displayer** is **connected** to the **Issuer** who **verifies** the content and **displays** the verified **information** (**Metadata**) to any **Consumers** (Employers, College Admission Officers) who are interested in their accomplishments and wish to **verify** the **validity** and **credibility** of the awarded badge.

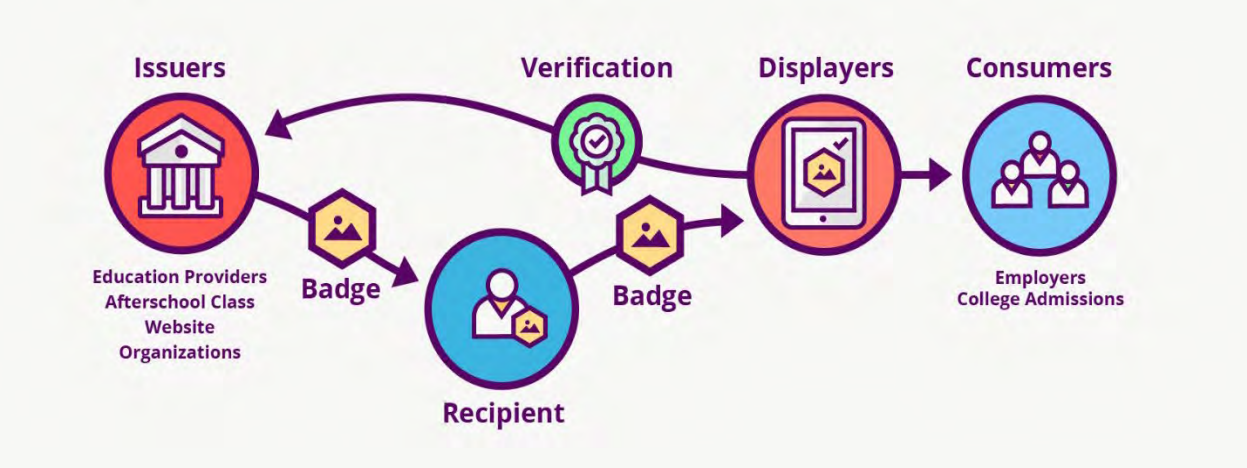


Figure 12: An Open Badges Eco-System (Life Cycle)

Technically speaking, an Open Badge is a digital image, which contains metadata-information about who has issued the badge, to whom, and on what basis. Therefore, it is more than a digital image. It is a standard and verifiable digital credential, the metadata of which aligns with the Open Badge Standard created by the Mozilla Foundation and further developed by IMS global. To create a standard Open Badge, one doesn't need to know about the standard's technical specifications. Instead, one can use a standard-compliant Open Badge platform such as the popular Moodle LMS.

Over the years, many companies have created badge issuing platforms compliant with the Open Badges Specification. They provide a wide range of services which allow non-technical users to issue Open Badges credentials. The e-platforms used for issuing Open Badges offer a variety of custom services including online badge designers, issuing, assessment workflow, display, user profiles, social sharing and tools to integrate with existing LMSs. All Open Badges issuing e-platforms allow recipients to export their badges to other online options such as backpack platforms. This allows users to stack and share their badges earned on different platforms of their choice.

There are numerous ways to issue and award badges to (l)earners, but this guide focuses on standalone LMSs and in particular on the Open Source and most trusted online learning solution, Moodle LMS, which is used by over 250 million learners worldwide.

The Moodle LMS, and how to use and exploit Open Badges in it, is presented in detail in Chapter 3, together with useful and easy to follow step-by-step videos. Before that though, it is important to go through some practical elements regarding Open Badges.

2.2 Learning Management Systems (LMSs) for Setting Up an Open Badge Eco-System

Open Badges are portable credentials. Collections of badges, which may have been issued by different organizations, can be displayed and shared in a way that makes sense to the user in a variety of ways including a Badge Profile page, a professional profile such as LinkedIn, in a CV, or simply stored in a LMS, where they were initially earned.

A LMS is an essential tool for eLearning. It can also be a major expense, especially if looking for a robust, versatile LMS that can accommodate eLearning development needs. Thus, education administrators tend to favor Open Source LMSs because it's a great solution for learning when having the end user in mind.

Open source LMSs offer the opportunity to develop and deploy e-learning courses and much more if one dedicates the time to master all their features. In some cases, an open source LMS may come with a learning curve, but the cost-savings and design freedom may be well worth it in the end.

Fortunately, there are a variety of different Open Source LMSs that can offer a dynamic and flexible eLearning platform without having to go over a specified budget.

Studies have proven that gamification in education engages learners with learning activities by applying game principles (points, progression, competition, badging) and can be useful in helping learners further comprehend and apply new information.

Hence, educational entities and teachers just need to choose a specific open source LMS that is suitable to their needs, but this process can be challenging. A good start would be to first answer some questions such as the following:

1. Does the LMS have a supportive online community?
2. Is it compatible with third-party plug-ins offered by external developers?
3. What's the quality of its user interface?
4. Is the software mobile-friendly?
5. Does it provide gamification principles such as points, progression, badging, etc.?

This guide suggests the Moodle LMS as the Badge Issuing Platform to be used, as Moodle is the world's most trusted online learning solution, since it is a globally supported effort.

Figure 13: Moodle LMS Logo

The engine of the Moodle ecosystem is Moodle LMS, the secure and customizable open-source platform used by over 250 million learners worldwide. Moodle is an open source LMS with inherent security and privacy features. Designed in collaboration with Moodle's global community, Moodle LMS allows educators in any sector to create flexible, safe, accessible and highly engaging online spaces for their learners. It comes with a full kit of features that allow educators to create a private learning space online, filled with tools that easily create courses and countless activities, which are all optimized for collaborative learning. In addition, it provides a Mobile App, which is available for both Android and iOS and possesses an extensive Moodle plugins directory for extra activities, blocks, themes and more.

Below you can find a short list of other Open Source (free) LMSs with links to their official websites, which incorporate the Open Badges Eco-System as well as gamification principles.

Chamilo

Open edX

Canvas

WordPress LMS

2.3 Minimum Technical Specifications of an Open Badge

Badges are very easy to create, as long as some minimum technical specifications are met. Specifically, there are some minor constraints in the format and size of the image.

An Open Badge is comprised of an image file with structured metadata embedded inside it. Images need to be square (equal width and height), although different shapes can be used within a transparent square.

The file also needs to be in .PNG or .SVG format. In addition, the image cannot be smaller than 90 x 90 pixels (ideally 100 x 100 px) and the file size should be a maximum of 256KB.

Recommended image size varies by badging platform. For PNG files, an image size of 400 x 400 - 600 x 600 pixels is recommended.

Figure 14: Example Badge Images

The badge image, together with the badge name, are typically the first thing badge consumers will see, and together the name and image should be capable of providing a sense of what the badge is about.

The badge image may contain the issuer logo. However, because badges can be displayed at sizes as small as 90 x 90 pixels, special care should be taken so that branding remains legible and visually appealing.

Open Badges may be displayed at different sizes. Images should be previewed at around 90 x 90 pixels to ensure that elements are clear. This is the smallest size that applications commonly embed badge images on the web. Badges are portable and may be displayed in a variety of digital contexts and against different background colors.

If the “alt text” option is available, it is advisable to use it so that badge images are accessible to all users.

Badges can include text, different shapes, and colors. Logos can be created using any design tool. For non-designers, there are free badge creation tools, such as openbadges.me and Canva.

Once you have created an image, you can define the criteria for awarding that badge and add other relevant metadata to the badge via an Open Badges Platform such as a LMS.

An Open Badge platform may provide any or all of the following features:

1. **Issuer**: Create, manage and distribute badges and enable earners to receive and share badges
2. **Displayer**: Render information about the earner's badge and allow a viewer to verify the badge
3. **Backpack**: Enable an earner to import Open Badges from other systems and potentially organize and share the badges with others

2.4 Anatomy of an Open Badge (Metadata)

Metadata is data that describes other data or information.

For example, when you take a picture with your smartphone, your phone records additional data such as:

- when (and possibly where) the picture was taken
- how big the image file is
- who the author is

That additional data is called 'metadata'.

Open badges capture essential information about learning and achievements by "baking" (storing) this metadata inside the badge image. If made public, this information can be accessed and viewed by anyone. A verified issuing organisation, together with attached evidence by a badge earner, improve the credibility of Open Badges, as does the number of endorsements it attracts.

Therefore, an Open Badge is an image file with a range of 'built-in' information (Metadata). Contextual information such as:

- who earned it (name of (l)earner)
- what the badge represents (what was learned)
- how it was earned (set criteria)
- when they earned it (date)
- who issued it (name of educational institution(s))

is critical to the definition of a badge in this standard.

This metadata is crucial for a Digital Badge to be Open Badge Compliant and not just be a digital badge. It is added to a badge by the issuing system and provides useful information about the badge to anyone wishing to verify it or learn more about the context of the achievement it signifies.

In simpler terms, if one virtually "peels off" the exterior image they will see that there is data inside that image, as depicted in Figure 15. It must be noted that a subset or all of this information will be displayed in a visual format (badge image) wherever the badge is displayed, but it is also stored within the digital badge's metadata so it can be verified any time.

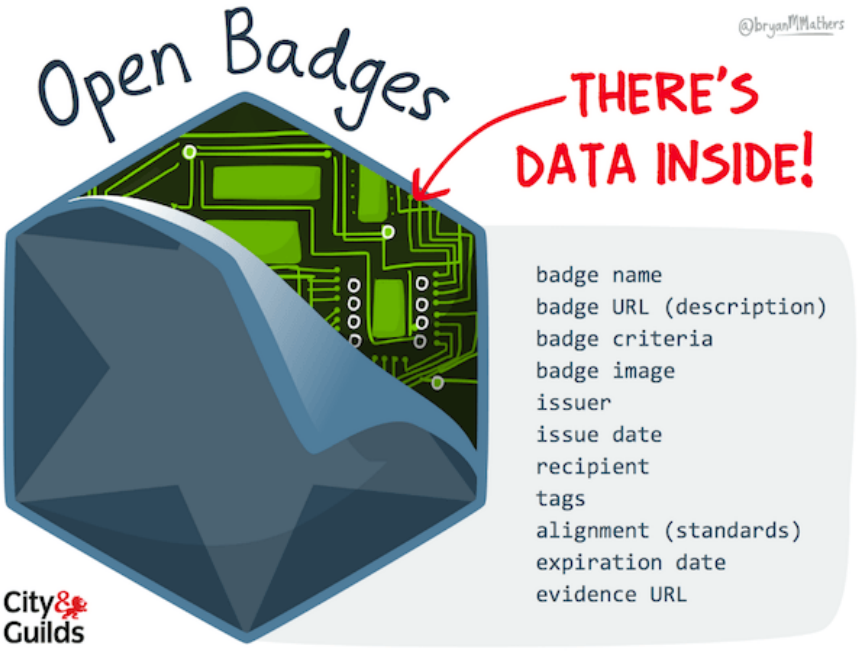


Figure 15: Open Badges Metadata

The Open Badges Standard specifies the required and optional information to be included in the badge image metadata. The more information is provided, the easier it is to explain its context and current state to anyone interested (Badge Consumers).

Required Metadata include:

- **Badge Name:** Recalls the content of a skill or achievement in a few words. It can be the name of the skills/competence.
- **Badge Criteria:** The assessment process to be followed by the candidate (l)earner or in other words, the tasks set by the badge issuer and completed by the badge earner to qualify for a specific badge.
- **Badge URL (Description):** Provides the details of achievement: describes the context, specifies the achievement, refers to completed tasks, explains the assessment procedures.
- **Issue Date:** The exact date the Badge was issued
- **Issuer:** An account or record associated with the organization issuing the badge - at least their name and e-mail address. The organization can be a company, institution or private person that issues a badge to recognize learning and achievements.
- **Earner (Recipient):** An email or user account associated with the badge in order to identify the earner/recipient.

Optional Metadata include:

- **Alignment (Standards):** The educational standards the Badge adheres to.
- **Expiration Date:** The exact date the badge expires (if it expires).
- **Evidence URL:** It is very much encouraged to enrich and backup the claim for specific achievement. It can be of a variety of formats: text input, file upload, image, video, badge code or even another badge. The proof and the evidence of the acquired skills will have to be specified here, i.e. quiz grade, task (link, photo, video) etc.
- **Revocation / Revocation Reason:** A badge could be awarded by mistake and must be revoked with an explanation.
- **Tags:** Terms or phrases to describe the badge's topics, competencies, or type of achievement.

Badges are awarded to an individual, either automatically or manually, when they have met the required criteria (the criteria that the badge has been assessed against) or provided the required evidence. The evidence that the earner submits to earn the Open Badge can be included in the metadata inside the badge image. If added, it links back to the actual proof of mastery that the earner submitted and the issuer approved.

An individual may collect badges from different issuers and choose where to store and display these badges. When an individual displays one of their badges, the metadata can be viewed and verified by others simply by clicking on the badge.

2.5 How to Write Open Badges Metadata

Since metadata play a crucial role towards the validity and credibility of Open Badges, this section provides a comprehensive guide for Open Badges Issuers on how to author Open Badges Metadata in order to transfer all the necessary information to both (I)earners and consumers.

(*) denotes required fields.

Badge Name (*)

The Badge Name should be short and the content of the achievement should be easily understandable. Since the Badge Image and Badge Name are typically the first things a badge consumer will see, it is crucial that together they should be capable of providing a sense of what the badge is about.

Description (*)

A Description is a short explanation of the claim being made by the badge and a brief overview of what a recipient must do to earn the badge. When badges are listed, shared or displayed, descriptions can be read by badge consumers, e.g., employers, as well as by learners who are considering earning the badge.

Although there are somewhat different categories of badges, a good badge description will briefly describe as many of the following badge characteristics as are relevant:

1. It should describe the context in which the badge was earned.
2. It should specify the achievement.
3. It should refer to completed tasks.
4. It should explain the assessment procedures.

Issuer (*)

The Issuer name is the name of the individual, entity, or organization that issues the badge. If a badging platform is used to issue badges, most likely the Issuer information will be provided when setting up an issuer account.

Any individual or organization can create an Issuer profile and begin defining and issuing Open Badges. This is being done by a diverse range of organizations and communities, including:

- Schools and universities
- Employers
- Community and nonprofit organizations
- Government agencies
- Event organizers and science fairs
- Companies and groups focused on professional development (such as the MeLDE and DigiTeaL consortia)

An entity that can be described with a name, a description, a URL, an image and an email address is a possible candidate to become an issuer.

Criteria (*)

Criteria list all of the detailed requirements that a badge earner had to meet in order to become eligible and ultimately earn a badge. Criteria are written for potential badge earners, to provide them with as much specific detail as they need in order to earn the badge. Criteria are also written for badge consumers, to provide a detailed account of exactly what badge earners had to do to earn a particular badge. If there is an assessment rubric associated with the badge, teachers should consider sharing it here.

- A badge may be associated with multiple criteria
- Criteria can be required or not
- Criteria should be associated with a description and indication of acceptable evidence
- Criteria should be exhaustive, i.e., they should include all requirements needed to earn the badge
- If a badge is associated with a competency-based assessment, the badge criteria should align very tightly with the competency statement

Criteria can also specify the type of evidence needed to earn the badge. For example, a badge may require potential recipients to submit writing, record video of themselves demonstrating a skill, or submit proof of having attended an event.

As much as possible, badge criteria should follow the SMART acronym. That is, criteria should be:

- **Specific**: what will the badge earner have accomplished by earning this badge?
- **Measurable**: how will the assessor know when the level at which the badge is awarded has been achieved?
- **Achievable**: in what ways can the badge be achieved?
- **Relevant**: is this badge worth earning? what opportunities does it unlock?
- **Timely**: should this badge expire after a certain period of time?

Alignment

The alignment field enables a badge to be aligned to recognized academic or professional standards. A badge aligned to recognized standards is easier for badge consumers to find and understand, which adds value for badge earners, consumers, and issuers. The contents of the Alignment field should consist of a URL/URI that points to an element of an educational or professional standard, or at a competency definition used by multiple organizations.

Tags

Tags are alternate terms or phrases to describe the badge's topics, competencies, or type of achievement. Tags are intended to help badge consumers and potential badge earners find

relevant badges. As such, the tag field should contain as many relevant keywords as will be helpful.

Expiry Date

If the achievement has some notion of expiry, this indicates a timestamp when a badge should no longer be considered valid. After this time, the badge should be considered expired.

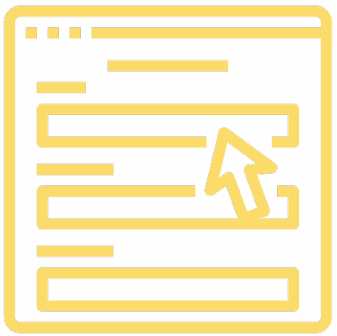
Date Issued (*)

This is the date the badge is issued (as the name suggests). Most badging platforms should take care of this automatically.

Evidence

The evidence field contains evidence of an accomplishment that is (or at least can be) unique to each badge. Whenever possible, the Evidence field should include links to documents, videos, images, or other artifacts that support the badge's claim about the earner's accomplishment. Such evidence makes a badge earner's claim more credible.

The Evidence field can also include textual evidence. When entering text in the evidence field, it is advised to avoid simply repeating what's already in the Criteria field. Instead, Issuers should provide specific and unique details about how a particular recipient earned the badge. One might use the Evidence field to describe an earner's particular contributions to a project, or describe what the earner did during an event.



3. MOODLE OPEN BADGES EXAMPLES (VIDEOS)

In order to issue an Open Badge, you should first login to the MeLDE e-Platform, or any other Moodle platform you may be using, with the role of a Trainer. In order to become a Trainer, you can ask a former Trainer or the administrator of the e-Platform (on meldeeu@gmail.com for MeLDE) to assign you this role.

Note: *If students do not possess or do not remember their e-mail address, then the teachers can create fake e-mail addresses on the LMS and move on to the issuing and awarding of the open badges, which will then be stored on their LMS Profile page. It goes without saying that the ideal situation would be if students possess a personal e-mail in order to subsequently display and share their badges on other backpack platforms of their choice.*

3.1 How to Issue an Open Badge

1. Click the **Course Archive Page button**.
2. Choose the Module whose Open Badge you want to issue.
3. Click the **gear** button of the Module.
4. Click the **More…** option from the drop-down menu.
5. Find the **Badges** sub-menu and click the **Add a new badge** button.
6. Fill in at least the required fields.

   The fields with the red exclamation point on the left side are the ones that are required and they should be filled in.

   i. **Badge Details**: Name, Description, Image

   ii. **Issuer Details**: Name
7. Click the **Create badge** button.

Watch the **video on how to issue an Open Badge**

or scan the following QR code:

3.2 How to Set Up the Criteria for an Open Badge

In order to set up the criteria for an already issued badge (see sub-chapter: "**3.1 How to issue an Open Badge**") follow the following steps:

1. Click the **Course Archive Page button**.
2. Choose the Module whose Open Badge you want to issue.
3. Click the **gear** button of the Module.
4. Click the **More…** option from the drop-down menu.
5. Find the **Badges** sub-menu and click the **Manage badges** button.
6. Click the **gear** button of the badge whose criteria you want to set up.
7. Click the **Criteria** tab.
8. Choose a criteria option from the drop-down menu, depending on the following:

   i. **The first criteria option is if you want the Open Badge to be manually awarded by an e-platform's role.**

      1. Choose the e-Platform role that will be eligible to award an Open Badge manually to the students.
      2. Choose if the criterion is complete when all of the selected roles award the badge, or if any of the selected roles awards the badge.
      3. Add a Badge description that will be integrated to the Badge's metadata.
      4. Click the **Save** button.

   ii. **The second criteria option is if you want the Open Badge to be automatically awarded by the e-platform, upon the completion of the course.**

      In order for badges to be awarded upon course or activity completion, **Course completion** must be enabled for the course with a specific condition of at least an activity that can be graded. These activities must have as an activity completion criterion that **teachers must receive a grade** to complete them.

1. Fill in the Minimum grade required in order for a student to acquire a badge.
2. Add a description that will be integrated into the Open Badge's metadata.
3. Click the "Save" button.

iii. The third criteria option is if you want the Open Badge to be automatically awarded by the e-platform, upon the award of another Open Badge of the course.

1. Choose which badges should have been awarded before the specific badge can be awarded as well.
2. Choose the badges that should have been earned before the specific badge can be awarded automatically.
3. Choose if the criterion is complete when all or any of the selected badges have been earned.
4. Add a description that will be integrated into the Open Badge's metadata.
5. Click the "Save" button.

iv. The fourth criteria option is if you want the Open Badge to be automatically awarded by the e-platform upon the completion of some specified activities of the course.

In order for badges to be awarded for course or activity completion, **Course completion** must be enabled for the course and in order for the activities to appear as a criterion, their Completion tracking should have been enabled.

1. Choose the activities of the Module/Course that should be completed in order to earn the badge.
2. Choose if the criterion is complete when all or any of the selected activities are complete.
3. Add a description that will be integrated into the Open Badge's metadata.
4. Click the "Save" button.

Watch the **video on how to set up the criteria** or scan the following QR code:

3.3 How to Award an Open Badge

In order to award an Open Badge, we first need to enable it by following the steps below:

1. Access the **Course Archive Page.**
2. Choose the Module whose Open Badge you want to enable.
3. Click the **gear** button of the Module.
4. Click the **More…** option from the drop-down menu.
5. Find the **Badges** sub-menu and click the **Manage badges** button.
6. Click the **gear** button of the badge you want to enable.
7. Click the **Enable access** button.
8. Confirm the enable by clicking the **Continue** button.

There are 2 ways an open badge can be awarded:

i. **Manually,** if we have chosen as a criterion of the Open Badge to be issued by a specific role (See subchapter: "**3.2 How to set up the criteria for an Open Badge**").
   1. Click the **Recipients** tab.
   2. Click the **Award badge** button.
   3. Choose the recipients from the list on the right (hold the Ctrl key to choose more than one).
   4. Click the **Award badge** button.

ii. **Automatically,** if we have chosen any of the other criteria of the Open Badge (Course completion, Awarded badges, Activity completion) (See sub-chapter: "**3.2 How to set up the criteria for an Open Badge**").

Watch the **video on how to award an Open Badge** or scan the following QR code:

3.4 Where to Find the Open Badges you Have Earned

There are 2 ways to find the Open Badges you have earned:

1. By accessing your Profile:

i. Click on your profile name.

ii. Click on the **Profile** option from the drop-down menu.

iii. Here you can see the badges you have earned on the **About Me** tab, on the Badges sub-menu.

iv. If you click on one your Open Badges you can access all of its metadata and even download it.

v. Click the **Download** button if you want to save the badge to your device.

2. By accessing the Preferences of your Profile:

i. Click on your profile name.

ii. Click on the **Preferences** option from the drop-down menu.

iii. Click on the **Manage badges** button of the Badges sub-menu.

iv. Here you can see the badges you have earned.

v. You can download all of your Open Badges by clicking on the **Download all** button.

vi. You can download any of your Open Badges by clicking the **Download** button.

You can make any of your Open Badges private by clicking the **Make private** button.

Watch the **video on where to find your Open Badges** or scan the following QR code:

3.5 How to Push an Open Badge to Badgr Backpack

For the following steps, you should first download the Open Badges you want to push to the Badgr Backpack, by accessing your MeLDE (or other platform) account (See sub-chapter: "**3.4 Where can you see the Open Badges you've earned**") and then create an account on Badgr and connect.

1. Click on the **Add Badge** button on the **Backpack** page.

2. Drag & drop the Open Badges you want to push or click the **Select File to Upload** option and upload them.

3. Click the **Add Badge** button.

Your Open Badges are now uploaded to the Badgr Backpack and you can easily share them.

Watch the **video on how to push an Open Badge to Badgr Backpack** or scan the following QR code:

4. CONCLUSIONS

Open Badges are a digital representation, recognition and validation of learning and skills as well as a simple and effective way to encourage learning, collaboration and reward participation and effort. They are basically digital images, which carry important information (metadata) related to what is recognized such as the badge issuer, the badge recipient, the criteria that were fulfilled, evidence and date of issue among others. They are increasingly becoming popular in the educational scene but as is often the case, the have their advantages and followers as well as their disadvantages and critics.

There are a number of issues that teachers should consider when using Open Badges in order to get the most out of them.

For instance, ensuring transparency is a key issue and teachers should be very clear in defining their awarding criteria so that those trying to verify these badges can see that it was no trivial feat to earn them.

In addition, badges should certify some type and level of competency and achievement that a student has demonstrated, either in and out of class, so teachers should be creative about introducing badging into diverse programs and co-curricular activities. This, more than anything, will provide value to (l)earners reflecting on their skills and trying to exploit them for jobs.

Badges should also be shareable across the web; hence teachers should not limit them to one LMS only, but rather provide the means for students to easily transfer them to external lifelong backpacks to increase their visibility.

Teachers should always consider automating the awarding process, as this will make it more scalable and will also ease their professional life relieving them from unnecessary workload.

Perhaps the most important question that needs to be considered by teachers is how to make a badge credible, especially since the voices arguing their skepticism about badges are increasing. How does one know for sure that a badge was actually "earned" and not simply handed out for fulfilling a low-stake task? The answer is to require that embedded records of who issued the badge are supported by links to pages explaining in detail how and why the recipient earned it and providing further details regarding their program. This gives value to a badge and thus can mitigate some concerns, but it is expected that the debate will continue.

Nevertheless, there is a consensus view that Open Badges could be used in a supplementary manner, that is they should not replace traditional diplomas, degrees etc. but rather supplement them. Everyone acknowledges that the educational scene is rapidly evolving, especially in relation to digital technologies, and educational entities are forced to adapt and keep in pace if they don't wish to be left behind.

The Covid-19 pandemic brought with it new needs for education, forcing educational entities to use technology more so than ever, in order to carry on the educational procedure. Video conference platforms and e-learning platforms hosting MOOCs and assessment procedures were brought to the forefront of education in an attempt to save the day, since traditional face-to-face teaching and learning was becoming more and more difficult. With this development, more and more students choose to learn new skills outside of traditional colleges and universities. This is not to say that traditional methods of learning will be regarded as obsolete. It simply means that a college or university diploma is no longer the only credential that can be used to evaluate the competency of an individual. It also means that the need for credible and verifiable open badges will increase in the coming years.

Studies have shown that in the near future Open badges are expected to gain popularity as a way to signify learning achievement, and the need to verify the legitimacy of badges will increase as more organizations enter the market and offer their own online courses. As a result, more and more college admission officers and employers will rely not only on traditional diplomas and degrees, but also on badges and other forms of digital credentials when making hiring decisions.

This guide provided a detailed introduction to the world of Open Badges, their theoretical background, and practical information and guidelines as to how to implement them in a real-world scenario using the popular Moodle LMS. Of course, each Open Badge eco-system will look different and will depend on the needs and objectives of each educational entity. It is a dynamic eco-system that will constantly evolve based on the needs and motivations of its audience.

5. GLOSSARY

Term	Definition
Alignment	An Open Badge can be aligned to educational or other standards, in which case its metadata will include the standard's name, URL and description. This alignment information may be relevant to people viewing an earner's awarded badges, or to a potential earner deciding whether to apply for the badge.
Backpack	The system where badge recipients can import, curate, and share earned Open Badges (sometimes referred to as passports, wallets, or portfolios). Beginning with Open Badges 2.0, the candidate platform must be able to import all formats of Open Badges as well as prove that badge metadata is not lost upon export of the badge. Example: Badgr Backpack.
Baked Badge	A badge image containing embedded (baked) Open Badges-specific metadata. Badge baking is the process of embedding data into a badge image.
Consumer	Someone who looks at an Open Badge and the information contained in the badge such as an employer or a college admission officer. Consumers may also initiate verification of the badge.
Criteria	Detailed information about what must be done in order to be awarded with a Badge. Potential recipients may use criteria to understand what they must do; consumers may use criteria to understand what recipients did in order to earn the badge.
Description	Badges are accompanied by descriptions when they are listed, shared and displayed. Each badge can include a short tagline, a description for earners and one for consumers.
Digital Badge	Badges that do not conform to the OBI standard. Often used in video games or to motivate students' behavior but not portable between platforms.
Displayer	A system that displays an Open Badge and its metadata for others to see and offers the ability to verify that Open Badge. Beginning with Open Badges 2.0, the candidate platform must display a

	minimum set of badge metadata and support viewer-initiated verification of a badge.
Earner	Someone who receives (earns) an Open Badge by meeting the criteria for earning the badge, often after submitting evidence of learning or acquiring a skill.
Ecosystem	Environment around the badge (actors, beneficiaries, etc.). The broad array of multiple interoperable tools and platforms that support Open Badges.
Endorsement	Action of validating, recognizing the value of a badge, an organization, or approving what is recognized to the recipient.
Evidence	Links to and descriptions of evidence related to the issuance of a badge, such as portfolio items or narratives that describe a badge recipient's work.
Issuer	A person, organization or community that creates (designs), manages, and awards Open Badges often on behalf of a program. Beginning with Open Badges 2.0, the candidate platform must issue a valid baked badge and demonstrate how the badge is retrieved by the recipient.
Issuing Platform	A platform enables individuals and institutions to issue badges to their learners. In other words, if you want to give badges to your students, you create and upload your badges to an issuing platform, along with the criteria for earning the badge and a description of the badge. You can then usually send badges to students by email. Examples of badge issuing platforms include Badgr, OpenBadges.me and Credly.
LMS	Learning Management System (e.g. Moodle)
Metadata	A set of data that provides information about other data
MOOC	Massive Online Open Course
OBI (Open Badges Infrastructure)	The technical standard for open badges developed by the Mozilla Foundation and maintained by IMS Global. The OBI facilitates the portability and interoperability of the badging system.

Open Badge	A specific type of digital badge that conforms to the Open Badges standard. Open Badges are verifiable contain detailed information about the achievement and what the recipient did to earn the badge.
Open Badges Standard	The technical specification that defines how Open Badges are constructed and transmitted.
Recipient	Same as Earner
Revoke	A badge issuer can decide to revoke a badge they issued. Badge displayers are required not to display badges that have been revoked.
Verification	A technical process defined in the Open Badges standard that enables consumers to determine an Open Badge's authenticity.

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