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Digital Certifications and Open Badges

The spread of technology has encouraged the introduction of digital certifications in education, the most popular format of which is the Open Badge. Let's find out more.

The certificates obtained at the end of the course signal the skills acquired and are useful in qualifying a candidate. From paper format has come digital certification, in native electronic format. Open Badges are the most widespread standard, able to bring universities and the world of work into dialogue, benefiting training.

Certifications: physical, digitized and digital

In the normal course of education, a student who has taken courses takes one or more assessment tests during the course of education. At the end of which, a certification is conferred attesting to attendance and, if required, performance. For generations, entire schooling paths ended with the diploma, the "piece of paper" with stamps and signatures of the attending institution. In a working world where resumes were hand-delivered and interviews were exclusively live, this was enough to introduce the student and indicate his or her educational background. Those who had to move abroad for work would have to have their certificate notarized, in the hope that their degree would also be recognized in the destination country.

Nowadays, if the bureaucracy is no less complex, the format of certificates has adapted to new technologies. In addition to the paper format, a certificate can be produced in a digitized format. A degree certificate, a high school diploma, or a certificate from a training course can all be scanned and turned into a PDF or other digital format. The detail can also be very faithful to the original, and, many public and private offices can accept delivery of an attachment in this format. The advantage in terms of time and usability is undeniable. Upon request, the applicant can provide a digital copy of a document that, except in rare cases, he or she would not have produced in paper format. With the digitized format, the circulation of certifications increased, except then having to verify that they were fide worthy and original.

The limitation of the digitized format remains the same as the paper format. Net of the different medium-digital or physical-both documents represent the final summary of a training course. The information they are able to carry is limited to that of the certificate holder, the institution that issued it, the subject of study and the grade, if any.

To resolve these limitations, digital credentials were introduced. The difference between digitized and digital is not only semantic but substantive: a digitized document is born in paper format and is later transformed into digital format by scanning the document; a digital certificate is a document that is born in digital format at the origin. The European Union has initiated the promotion of Europass digital credentials (EDCI) in order to popularize this format. The main advantage in adopting digital credentials is that the digital format allows the aggregation of a complex set of data, far superior to the summary information contained in a paper or digitized certificate. This digital file allows for greater detail on the training path followed by the holder. The benefit is not only at the level of paperwork carried out by institutions, but also at the level of businesses and IT training services - eLearning first and foremost - which can benefit from an easier exchange of information.

A digital credential makes it possible to eliminate some of the limitations and vulnerabilities typical of the paper and digitized format. While the digitization of a paper certificate had already helped increase its sharing, the digital format allows the inviolability of the document. A PDF can be copied and replicated and shared indefinitely: with a good photo editing program, it can be edited and tampered with. A digital certificate such as that of Europass digital credentials is issued according to standards that allow verification of the associated Xml file and the seal of the institution that issued the document: a digital credential can indeed be copied indefinitely, but the copied information cannot be changed. Verification of the veracity of the information can be conducted by anyone in real time.

Another set of advantages relates to data storage and modification. Whereas updating a paper or digitized document requires a new issuance or scan, updating or modifying a digital certification requires the intervention of the issuer: only the provider of an eLearning course, for example, can confer a new certificate, perhaps after a refresher course. A certificate can be replicated as

much as one wants by the holder, but its modification can only be done by the issuer: this allows for greater control in the delivery of titles. Similarly, checking validity also requires action by the issuing institution or company.

Finally, the amount of information that can be provided is also greater. A digital certification is a true record, in which references to individual courses taken or grades obtained can be entered in detail.

The importance of descriptors

But what does a digital certification look like?

The document that appears on view is nothing more than a png file. A simple image that the issuing institution has decided to adopt: it may bear the course details, along with those of the issuer. The real information content lies in the descriptors of the image. These, which may be in Json or Xml format, carry all the additional information useful in evaluating the document. From information about the educational institution to information about the holder of the certification to information about the course of study-all these data make up the digital file.

Open badges as digital certifications

The most popular format of digital certifications is Open badges. these consist of images that contain descriptive information in metadata. The data contained is machine-readable, that is, it can be read and interpreted by software, as opposed to the information in a Pdf or jpeg of a document scan. This allows the data to be verifiable by the appropriate software. Among the information in the metadata may be references to skills obtained by students. These can be organized in a hierarchy that takes into account educational backgrounds and specializations.

The Open Badge format is managed by 1EdTech, an international consortium sponsored by the Mozilla Fonation and of which major organizations such as Google, Facebook and Linkedin are members. The Open Badge standard includes some typical metadata such as:

- The type of badge
- The Assertion, which associates the badge with the person
- The Issuer, the entity that issues the certificate
- The Creator, the entity that certified the acquired competence

The Open Badge is periodically updated. The current version, 2.1 allows a total of eighty description fields, which will be increased to three hundred in the next version 3.0, expected in 2023. A greater number of description fields allows for detailed representation of the educational background of badge holders, which will benefit the expendability of digital certification in application, selection and personnel management processes. The new version will also enable greater convergence of American and European university institutions: with version 3.0, a common point should be reached between the American Digital Credential Consortium (DCC) standard, headed by MIT Boston, and the European Digital Consortium (EDC). Interoperability between Europe and America should foster greater sharing of data, students, and educational and job opportunities.

It is necessary to specify then that the digital credential standard is intended to facilitate the sharing and circulation of documents in a goal of interoperability. However, the responsibility for the veracity of the information contained falls on the issuer, be it the university or the company that provided the eLearning courses. For this reason, it is important that the courses provided follow a shared framework on the skills they will allow to be acquired.

The philosophy of Open Badges is to provide the user with control by deciding which parties to make the badge visible to. the student or employee should be able to collect the different Open Badges received from multiple entities into a single repository, called a "backpack," a virtual backpack.

A very important feature of Open Badges is that they are stackable, or stackable. This means that a badge issued by one institution can form the basis for a subsequent badge issued by another. This means freeing up some of the training from a single institution to create multiple atomized training paths. Open Badges can be an important tool for the development of eLearning training courses precisely because of this characteristic: the widespread and specialized supply of training that is established on prior skills can thus be recognized and standardized. Even more: with an appropriate network of sequential Open Badges, it is also possible to define those preparatory courses to enable a student or employee to fill those gaps to be filled before taking

more challenging courses.

The flexibility of the Open Badges tool allows them to be used to represent the acquisition of both traditional skills, such as those obtained at the end of a classic schooling course, and formal training courses, such as technical or managerial refresher courses, as well as informal ones, such as events and seminars. Finally, Open Badges can be used to signal membership in groups, such as clubs, circles or organizations, or to certify qualification for certain professions.

All this flexibility means that training providers need to organize their training courses organically. If, for example, three different courses in order of complexity are required to certify occupational safety skills, the Open Badges issued will also need to indicate this progression. The goal is to maintain adequate and explanatory reporting of the training delivered and followed.

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