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Blockchain and online training

How Blockchain can improve and make online training more effective.

More and more often we hear about Blockchain technology as the next big technological innovation. In particular, Blockchain has come to the fore because it is the basis of the 'management' of cryptocurrencies (such as Bitcoin, Ethereum, Ripple, etc.).

In addition to cryptocurrencies, Blockchain technology is proving to be suitable and to bring interesting benefits also in many other sectors and activities, including online training.

In this article I try to explain what Blockchain is, how it can improve online training and what are the main benefits of this technology.

What is Blockchain?

In simple words, Blockchain is a list of records that can be continuously improved with multiple records. These records, the so-called blocks, are linked together as a chain by cryptographic technologies. That's why this technology is called Blockchain. Each block includes a secure hash that links it to the previous block, transaction data, and timestamp.

The specificity of Blockchain is that it is not stored on a single central server, but is stored on many different computers, the so-called nodes, and will be updated permanently and continuously on all nodes. This method of archiving ensures either that the verification of information is possible at any time by anyone, and that the manipulation of data is very difficult, if not impossible.

Problems in online training

Online training suffers from three problems that are relevant and intrinsic to its methodology of use:

- user loyalty rates for online courses and course completion rates are generally low. If it is not a question of 'compulsory' courses (such as those of workers for safety at work, then courses that must be compulsorily carried out in order to do their job), many people sign up, but the majority can not complete them for a reason or for the other;
- the abundance of beginner-oriented courses and the lack of intermediate level courses. Of course, basic education is essential for people who are just starting out, but the lack of advanced online courses does not allow users who have taken basic courses to continue their education;
- the management of qualifications and certifications resulting from online courses. Is the certificate of the course true and valid? How can you be sure that people have actually done specific online courses?

The solutions offered by blockchain

Blockchain offers some immediate solutions to these problems.

With regard to user loyalty and the low completion rates of the courses, the currently most interesting and practicable solution is that of the assignment of "cheap" token at the end of the course. Today, students who finish a course receive a grade, but it is proven that voting alone is not sufficient motivation to keep the desire for online self-learning training high. A token written in the blockchain, however, allows a sort of 'economic' accumulation during online training that generates a greater motivation to conduct the course, with the possibility of converting tokens into other currency (so to collect money for the courses held), or convert tokens accrued in 'business awards', as more substantial meal vouchers, additional hours of leave, and so on.

The same mechanism of tokens can be fruitfully used also with trainers for the production of quality courses or aimed at an

advanced target, providing them with these same 'economic' incentives against the creation of high quality and higher value content.

The management of qualifications and attestations - and more generally all aspects related to trust and safety related to the course development - can be easily solved with blockchain technology through the Learning Record Store (LRS). As each block added to the chain must be approved by other participants, the record can not be falsified. This prevents people from creating false certifications to claim that they have passed a certain course. Records are also easily checked. The MIT Media Lab is already testing the blockchain as a means of issuing certificates.

In addition, Blockchain can be used to improve and / or certify other phases of the course: the purchase procedure, the verification of the conformity of the courses to the programs and the regulations, the individual and general training situations of a specific company.

Blockchain at work: example of a course

Let us now try to provide an example of the use of a Blockchain-based training course, looking at it from the different points of view of the three actors in this activity: students, e-Learning training providers and employers.

The process begins when the student follows in a course. At the end of the course a new block is created in the Blockchain that includes the student's result, the information on the course in which he/she participated, the timestamp of the end of the course, the outcome or the judgment, the number of the obtained certificate.

In this dynamic, students receive the verification of the achieved qualifications by the Blockchain. They can also view and manage their online qualifications or store them on a secure device. They can also share qualifications in digital format with potential employers or universities.

e-learning providers have direct access to the student's records and can check the status of the training and its progress.

Employers also have access to these records and can be sure that the student's qualifications are valid. In addition, they can also check if and when the qualifications or certificates of the students expire, even automatically register employees to new courses in order to obtain the necessary qualification again.

As you can see, these opportunities offered by the use of blockchain for online training are already very interesting, while many others functions and advantages still need to be developed either thanks to the full introduction in the LMS systems of the xAPI (Experience API, aimed at acquiring data on the activities of a person with educational content or information on the performance context), and because they are still imagined new and useful solutions.

Given the importance of the issue, after this first introductory article, we will return again in the future on the topic of the introduction of Blockchain technologies in online training.