Chapter 67
Towards Trusted, Transparent and Motivational Professional Education System Through Blockchain

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Abstract

The learning process has evolved with time. The primary change that technologies have brought into the learning process is more structure and activity based. It has become a necessity and a mandate as well to keep a track of details of educational activities so that it can be referred back to at any point in time. Moreover, it requires a secure protocol which is trustworthy, transparent, less vulnerable and requires near zero involvement of mediators. Blockchain technology has a tremendous potential to disrupt the education sector. Its implementation will help to maintain time-stamped record keeping that can be validated for all types of activities involved in the professional education system. This article proposes a blockchain-based model for professional education systems. The model not only ensures digital identity, verifiable records, but also motivates learning process by rewarding B-coins for learning activities. It inherits the security, robustness of underlying blockchain technology and eliminates the need for verification by an intermediate agency.

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INTRODUCTION

There has been a significant evolution in the learning process through internet as a tool for education. It has created a huge information base both for the students and the educators. With the advancement of digital technologies, the learning process is moving towards experiencing a complete paradigm shift with help of DI-SO-MO (Digital –Social –Mobile) platforms which is bringing in a lot of benefits for the students as well as for the educators. The primary change that the technologies have brought in the learning process is more and more structured and activity based. This has created a demand to record the details of educational activity for each and every student to achieve a continuous evaluation and feedback mechanism. It is becoming a necessity and mandate as well to keep a track of all the details of educational activities so that it can be referred back at any point in time. Capturing and recording of the details are gradually becoming cumbersome due to frequent change in educational guidelines, government regulations, course curriculum and global educational trends. In the pursuit of achieving excellence in quality, educational institutes are putting in a lot of effort in formalizing the information flow and recording mechanism to get the best benefits. The scenario mentioned above has created a demand to track and record each activity in the education process and make it more robust, data-driven, motivational and automated in nature. Moreover, it requires a strong value based and secured protocol which is trustworthy, transparent, less venerable for infringement and requires near to zero involvement of intermediates. This requires a change in the as-is process of the educational institutes' Standard operating procedure (SOP) for facilitating the above requirements as well as accommodate an easy way manage the information and value flow within the organization.

Blockchain technology has a tremendous potential to disrupt the Education sector (Devine, 2015; Sharples & Domingue, 2016). Its implementation will help to address the time-stamped record keeping that has the ability to record and validate activities like creating and maintaining unique digital identities, managing awards and recognitions, managing student activity records, Intellectual Property management and digital payments. This has the potential to completely disrupt the validation and verification process which is a mandate for professional education or job application processing (Schwab, 2017).

In this paper, a Blockchain based model for professional education system is proposed. The model not only ensures digital identity, verifiable educational records using Blockchain technology but also motivates learning process by rewarding coins in e-wallet for learning activities. It inherits the security, robustness of underlying Blockchain technology and eliminates the need of verification of identity, past academic performance by an intermediate agency.

The paper is organized as follows. We discuss some of the related work in the next section. Next, we present the paradigms of Blockchain technology and the challenges in implementing it on professional education sector. The proposed model is presented in the nest section followed by the SWOT analysis of the model. Next section concludes the paper.

REVIEW OF RELATED WORK

Blockchain is relatively recent technology and very few articles are reported in literature.

Joint Research Center (JCR), a European agency has come up with a policy report on Blockchain in Education in the year 2017 (Grech & Camilleri, 2017). They have focused on the disruptive ability of the Blockchain technology on the existing education framework. It suggests that Blockchain empowers