

Chapter 12

Enhancing Academic Credential Verification Through Blockchain Technology Adoption in University Academic Management Systems

Raghavendra A. N.

 <http://orcid.org/0000-0003-2147-4742>

Christ University, India

Vijayakumar G.

 <http://orcid.org/0000-0003-0162-5136>

Ramaiah Institute of Technology, India

Shanmugam Subramanian

 <http://orcid.org/0000-0002-9035-8457>

Christ University, India

ABSTRACT

Blockchain technology has emerged as promising solution in various sectors, including higher education. This research investigates the impact of usage of blockchain technology in student credential verification within university academic management system. This study employs a descriptive research through quantitative analysis of data collected from universities that have integrated or planning to integrate blockchain technology into their academic management systems. Key parameters

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examined include awareness and familiarity with blockchain, extent of blockchain usage, user experience and satisfaction, the perceived impact and benefits. The findings suggest that blockchain technology positively influences academic credential verification process, streamlining data sharing and reducing administrative burdens. As blockchain continues to transform the academic management landscape, this study offers timely guidance for stakeholders navigating the intersection of technology and education.

INTRODUCTION

The management of academic affairs in a university is a complex and multifaceted task that plays a pivotal role in ensuring the institution's success and the quality of education it provides. A fundamental component of this endeavor is the University Academic Management System (UAMS), which serves as the backbone for efficiently organizing, administering, and monitoring various academic processes. In today's rapidly evolving educational landscape, universities face numerous challenges, such as increasing student enrollments, growing demands for online and hybrid learning options, and the need to ensure compliance with accreditation standards (Alsaad, 2020). These challenges underscore the importance of having a robust academic management system in place to effectively address them.

The UAMS plays a pivotal role in addressing these challenges by providing a centralized platform for managing all aspects of academic administration (Alsaad, 2020). It serves as a repository of critical data related to students, courses, faculty, and institutional resources (Chen & Zhang, 2016). By integrating and automating various processes, it enhances the efficiency of administrative tasks, reduces the likelihood of errors, and enables universities to allocate resources more effectively (Joshi et al., 2017).

Moreover, UAMS empowers university administrators with data-driven insights, which are invaluable for strategic planning, resource allocation, and academic performance assessment (Chen & Zhang, 2016). It allows institutions to monitor student progress, identify areas that require improvement, and make informed decisions to enhance the overall educational experience (Alsaad, 2020).

Blockchain technology has gained significant attention for its potential to enhance various sectors, and the field of education, including university academic management systems, is no exception. Blockchain ensures the security and immutability of academic records. Each student's achievements, including grades, certificates, and diplomas, can be recorded on the blockchain, making it tamper-proof and resistant to fraud (Mengelkamp et al., 2018). Employers and other educational institutions can easily and transparently verify the authenticity of academic credentials by accessing

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