

## ملخص البحث رقم (٥)

ملخصات الأبحاث المقدمة من الدكتورة / هالة عبد الحميد مصطفى للترقية الى درجة استاذ مساعد

تخصص نظم المعلومات والمقدمة إلى اللجنة العلمية الدائمة للحاسبات و المعلومات

<b>English Title</b>	The Effectiveness of Using Blockchain Technology in Building High- Quality Educational Content Based on A Participatory Learning Environment and Its Impact on Increasing Student Achievement
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<b>Author(s)</b>	Amr El Koshiry, Entesar Eliwa , and Hala Abdel Hameed
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<b>English Abstract</b>	<p>This study aims to measurement the effectiveness of using blockchain technology in building high-quality educational content based on a participatory learning environment and its impact on increasing student achievement. In this study, many existing learning techniques and models have been discussed and presented with their detailed comparison as learning rate of digital data growth has increased using blockchain and IoT. Many western countries have already upgraded their blockchain based learning systems to the international standards. In methodology, we used python language for the implementation of blockchain based smart system application with IoT benchmarking to digitalize the content-based learning, it also provides a roadmap for the new digital ecosystem which is trained using the automation based on blockchain. Blockchain innovation has related to Internet of Things for quite a while now for smart education. There are many issues that are upset the execution of IoT applications at an enormous scope. Overviews and studies from numerous sources uncover that security dangers and information protection are yet the essential worries. These issues are notable, and arrangements exist for these issues in the IT business.</p>

However, traditional IT security solutions cannot be applied to IoT for various reasons spanning from type of devices to sheer volume of devices. Unfortunately, like in any other industry, E-Learning is often disregarded in the IoT domain as well, and most of the resources are allocated to application development and device hardware. So, the search for a silver bullet to overcome these inhibitors has been going on for a while. After Blockchain Technology became prominent, people started to realize the potential of the underlying distributed ledger (blockchain) technology and considered it as a true innovation. Rather than facilitating a peer-to-peer digital payment system involving a cryptography, the blockchain technology is viewed as a mechanism that provides device identity, secure data transfer, and immutable data storage. All these features can be implemented without any centralized authority and a completely transparent system with auditable cryptographic proofs. Our aim through this research paper is to get a deep level understanding of the blockchain technology and study some of the widely used blockchain frameworks including different technology like Big-data and Machine Learning. We will further examine the exclusive features offered by each of these frameworks and define their target use cases. Ultimately, our aim is to determine the most suitable blockchain architecture for the IoT ecosystem. A high-level comparison of the researched architectures will be provided so that managers and developers can quickly decide on a suitable framework for their application or use case depending upon the requirements. For each architecture, a set of sample use cases and on-going research will be discussed to get an idea of the usage of that architecture in the real world.