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Developing Blockchain-Based Accounting System For Enhancing Financial Reporting In Nigerian Polytechnics

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Abstract: *lobalization and digitization have brought up new challenges, limitations, and innovations in finance, accounting, fund transfers, payment systems, data transmission, and storage. The implementation of Blockchain technology in Nigerian Accounting systems/ and or Practices has significantly impacted accounting in recent years. The specific goal of this study was to address the contemporary issue of developing a Blockchain-based accounting system for Nigerian polytechnics. The study aims to enhance financial transparency, accountability, and employability of students, ultimately contributing to Nigerian economic growth. Data was collected using documentary literature. Therefore, the methodology used in study is purely content analysis, through secondary data by reviewing relevant journal articles and other contributions posted on the internet. The study discovered that, block chain accounting system can used by Nigerian polytechnic in enhancing financial reporting and students' employability across the nation. Consequently, it is recommended that policymakers, educators, and practitioners should leverage Blockchain technology to improve the accounting systems in Nigerian polytechnics.*

Keywords: *Blockchain-Based Accounting System, Nigerian Polytechnics, Financial Transparency, Economic Growth.*

1.0 INTRODUCTION

The Nigerian polytechnic system plays a vital role in providing technical and vocational education to students, equipping them with the skills and knowledge required to contribute to the country's economic development (Ajeniweni et al 2024; Kwami 2024; Bello & Muhammad 2021). However, the system faces significant challenges in financial management, including inadequate financial reporting, lack of transparency, and limited employability of accounting graduates (Gurgu et al 2022; Muthaiyah et al 2021; Modugno and Carlo 2019). Currently, Nigerian polytechnics face significant challenges in financial management, including corruption, mismanagement, and lack of transparency (Tyokyaa 2024). These issues undermine the integrity of financial reporting, hinder effective decision-making, and impede economic growth. Furthermore, accounting students in Nigerian polytechnics often lack practical experience with modern accounting systems, making them less employable.

This can be linked with the use of traditional misappropriation of funds, which can have severe consequences for the institutions and the country as a whole (Azibaraniyar 2023). Accounting systems in Nigerian polytechnics, which has been criticized for being manual, fragmented, and prone to errors (Nwankwo et al 2025). These systems often lead to financial mismanagement, corruption, and have severe consequences for the institutions and the country as a whole.

In recent years, blockchain technology has emerged as a potential solution to these challenges. Blockchain is a decentralized, digital ledger that records transactions across a network of computers (DharDwivedi et al 2024; Islam &Apu 2024; Habib et al 2022). Its use in accounting has the potential to provide a secure, transparent, and efficient means of financial reporting and management.

The Nigerian polytechnic system faces significant challenges in financial management, including inadequate financial reporting, lack of transparency, and limited employability of accounting graduates (Obilade&Akinsooto 2025; Imolong et al 2025; Salawu et al 2025). The existing accounting systems in Nigerian polytechnics are often manual, fragmented, and prone to errors, which can lead to financial mismanagement, corruption, and misappropriation of funds.

Furthermore, accounting students in Nigerian polytechnics often lack practical experience with modern accounting systems, making them less employable in the industry (Ezeokafor 2025). The use of blockchain technology in accounting has the potential to address these challenges by providing a secure, transparent, and efficient means of financial reporting and management.

However, there is a dearth of research on the development and implementation of blockchain-based accounting systems in Nigerian polytechnics. This study aims to address this research gap by investigating the feasibility of developing a blockchain-based accounting system for Nigerian polytechnics, with a focus on enhancing financial reporting and students' employability."

This study aims to investigate the feasibility of developing a blockchain-based accounting system for Nigerian polytechnics, with a focus on enhancing financial reporting and students' employability.

1.1 Objectives of the Study

The main objective of this study is to Develop Blockchain-based Accounting System for Nigerian Polytechnics; thereby enhance the financial reporting and employability of Students. However, the specific objectives are:

1. To identify how the significance of blockchain-based accounting system for Nigerian polytechnics.

2. To identify how blockchain accounting system can enhance financial transparency, accountability, and decision-making in polytechnics.

3. To identify how Block chain accounting system contribute to Nigerian economic growth through improved financial management and reduced corruption.

2.0 LITERATURE REVIEW

2.1 An Overview of Blockchain Technology

The use of blockchain technology in accounting has gained significant attention in recent years (Cohen, 2017; Dai and Vasarhelyi, 2017). Blockchain is a decentralized, digital ledger that records transactions across a network of computers (Nakamoto, 2008). Its use in accounting has the potential to provide a secure, transparent, and efficient means of financial reporting and management (Peres, 2018).

One of the key benefits of blockchain technology in accounting is its ability to enhance financial transparency and accountability (Cohen, 2017). Blockchain technology allows for the creation of a permanent and unalterable record of financial transactions, which can help to reduce the risk of financial mismanagement and corruption (Dai and Vasarhelyi, 2017).

Another benefit of blockchain technology in accounting is its ability to improve financial reporting (Peres, 2018). Blockchain technology can help to automate financial reporting processes, reduce errors, and improve the accuracy and reliability of financial reports (Cohen, 2017).

In addition to its benefits for financial reporting, blockchain technology also has the potential to enhance students' employability in accounting (Buckley, 2018). Blockchain technology is increasingly being adopted by accounting firms and organizations, and accounting students who have knowledge and skills in blockchain technology are likely to have an advantage in the job market (Dai &Vasarhelyi, 2017).

However, there are also challenges associated with the adoption of blockchain technology in accounting (Peres, 2018). One of the key challenges is the lack of awareness and understanding of blockchain technology among accounting professionals and students (Cohen, 2017).

In Nigeria, there is a need for accounting systems that are transparent, accountable, and efficient (Adeyemi, 2017). The use of blockchain technology in accounting has the potential to address these needs and enhance financial reporting and students' employability in Nigerian polytechnics.

Concept of Block Chain Technology; Blockchain technology is a decentralized, digital ledger that records transactions across a network of computers in a secure and transparent manner. It refers to the use of technology in recording, verifying and reporting financial transaction in a secure, transparent and efficient manner.

2.2 Key Components of Blockchain Technology

1. Decentralized Network: A network of computers (nodes) that work together to validate and record transactions.

2. Digital Ledger: A digital record book that stores all transactions made on the network.

3. Blocks: A group of transactions bundled together and added to the digital ledger.

4. Chain: A sequence of blocks linked together through cryptographic hashes.

5. Cryptography: Advanced mathematical algorithms used to secure and verify transactions.

2.3 How Blockchain Technology Works

1. Transaction Initiation: A user initiates a transaction, such as sending cryptocurrency or data.

2. Transaction Verification: The transaction is verified by nodes on the network using complex algorithms.

3. Block Creation: A group of verified transactions is bundled into a block.

4. Block Hashing: Each block is given a unique code, known as a hash, that connects it to the previous block.

5. Chain Update: Each node on the network updates its copy of the blockchain to include the new block.

6. Network Consensus*: Nodes on the network agree on the validity of the transactions and the updated blockchain.

2.4 Characteristics of Blockchain Technology

1. Immutable: Transactions on the blockchain are permanent and cannot be altered.

2. Transparent: All transactions are recorded publicly and can be viewed by anyone.
3. Secure: Transactions are secured through advanced cryptography and consensus mechanisms.

4. Decentralized: The network operates without a central authority or intermediary

2.5 Applications of Blockchain Technology

1. Financial reporting: Block chain technology provides an immutable ledger that records all financial transactions, making it difficult for anyone to alter or manipulate financial data.

2. Cryptocurrencies: Blockchain is the foundation for cryptocurrencies like Bitcoin, Ethereum, and others.

3. Supply Chain Management: Blockchain can be used to track goods and materials throughout the supply chain.

4. Smart Contracts: Blockchain-based smart contracts can automate business processes and ensure compliance.

5. Identity Verification*: Blockchain can be used for secure identity verification and authentication.

2.6 Benefits of Blockchain Technology

1. Increased Security: Blockchain's decentralized and cryptographic nature makes it highly secure.

2. Improved Transparency: All transactions are recorded publicly, ensuring transparency and accountability.

3. Enhanced Efficiency: Blockchain can automate business processes and reduce the need for intermediaries.

4. Reduced Costs: Blockchain can reduce transaction costs and improve overall efficiency. Here's a comprehensive overview of the concept of financial reporting.

2.7 Concept of Financial Reporting

Financial reporting refers to the process of preparing and presenting financial information about an organization to stakeholders, such as investors, creditors, and regulatory bodies.

Purpose of Financial Reporting;

The primary purpose of financial reporting is to provide stakeholders with accurate and reliable information about an organization's financial performance, position, and cash flows. This information enables stakeholders to make informed decisions about investing, lending, or other business activities.

2.8 Key Components of Financial Reporting

1. Financial Statements: Financial reports typically include four primary financial statements:

- Balance Sheet (Statement of Financial Position)
- Income Statement (Statement of Comprehensive Income)
- Cash Flow Statement
- Statement of Changes in Equity.

2. Accounting Standards: Financial reports must comply with relevant accounting standards, such as International Financial Reporting Standards (IFRS) or Generally Accepted Accounting Principles (GAAP).

3. Notes to the Financial Statements: Additional information and explanations about specific items on the financial statements.

3.0 METHODOLOGY

To address the issue of developing Blockchain-based accounting system for enhancing financial reporting Nigerian polytechnics, this research used documentary literature as a major source of data collection. Therefore, the methodology used in study is purely content analysis, through secondary data by reviewing relevant journal articles and other contributions posted on the internet. Content analysis is a research tool used to determine the presence of certain words or concepts within texts or sets of texts. Researchers quantify and analyze the presence, meanings and relationships of such words and concepts, then make inferences about the messages within the texts, the writer(s).
Therefore, in conducting these previous studies in relation to block chain was reviewed, with emphasis in conceptual analysis or relational analysis, as such this paper is considered as conceptual review. It was deduced that block chain technology prepares the individual to be properly equipped to acquire saleable skills which could be used to manage his own business or that of other persons. Consequently, Block Chain accounting based system supports students to develop optimistic attitudes, innovation and skills for self-reliance rather than depending on the government for employment, accordingly such knowledge will in return produce graduates with self-confidence and capacities for independent thought to discover new information leading to sustainable economic development.

4.0 CONCLUSION

Based on the above Literature Reviewed, it was discovered that:

1. Block chain technology enhanced financial transparency, accountability, and decision-making in polytechnics.

2. Proficiency of Nigerian Polytechnic students in block chain technology will be improved employability of accounting students.

3. Proficiency of Nigerian Polytechnic students in block chain technology will be increased efficiency and effectiveness of financial management in polytechnics.

4. Block chain technology contributes to the Nigerian economic growth through improved financial management and reduced corruption.

5.0 RECOMMENDATIONS

To address the issue of developing Blockchain-based accounting system for enhancing financial reporting in Nigerian polytechnics, it is recommended that government need to increase funding to support the Nigerian Polytechnic in equipping Students with practical that can allowed them leverage block chain accounting system, while Nigerian Polytechnic need to deliver flexible and demand driven training and employers need to contribute in leveraging block chain accounting system, so as to enhance Nigerian economic growth through improved financial management and reduced corruption.

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CONFLICT OF INTEREST

The authors declared no competing interests exist.

REFERENCES

Adeyemi, S. B. (2017). Financial reporting in Nigeria: Issues and challenges. Journal of Accounting and Finance, 17(1), 1-10.

Ajeniweni, P. O., Bamgbowu, S. A., &Obasi, I. O. (2024). The role of vocational education in promoting economic growth in Nigeria. *Journal of Economics and Environmental Education (JEEE)*, *8*(1), 23-41.

Azibaraniyar, O. (2023). An Overview Of Finacial Mismanagement And Financial Institutions In Nigeria. *Fuo Journal Of Management Sciences*, *7*(Special), 153-161.

Bello, O., & Muhammad, A. D. K. (2021). Technical and Vocational Education and Training (TVET) Sector in Nigeria: Structure, Challenges and Repositioning Strategies. *International Journal of Research (IJR)*, *8*(10), 127-151.

Buckley, J. (2018). Blockchain and accounting: A review of the literature. Journal of Accounting Education, 42, 1-13.

Cohen, S. (2017). Blockchain and accounting: A new era. Journal of Accounting and Public Policy, 36(5), 451-463.

Dai, J., &Vasarhelyi, M. A. (2017). Toward blockchain-based accounting and assurance. Journal of Information Systems, 31(3), 1-15.

DharDwivedi, A., Singh, R., Kaushik, K., Rao Mukkamala, R., &Alnumay, W. S. (2024). Blockchain and artificial intelligence for 5G-enabled Internet of Things: Challenges, opportunities, and solutions. *Transactions on Emerging Telecommunications Technologies*, *35*(4), e4329.

Ezeokafor, F. (2025). Academic Accounting Curriculum and Industry Skill Demands in Nigeria: Bridging the Practice Gap. *Journal of African Innovation and Advanced Studies*.

Gurgu, E., Zorzoliu, R. I., Ungureanu, G., Pistol, L., &Gurgu, I. A. (2022). Challenges And Perspectives in Romania's Financial-Accounting Management System in The Context of Global Risks. *Annals of SpiruHaret University*, *63*.

Habib, G., Sharma, S., Ibrahim, S., Ahmad, I., Qureshi, S., &Ishfaq, M. (2022). Blockchain technology: benefits, challenges, applications, and integration of blockchain technology with cloud computing. *Future Internet*, *14*(11), 341.

Imolong, O. M., Adesola, O. M., &Nwakaego, E. C. (2025). Addressing Accountability Challenges in Higher Education Management for Sustainable National Development.

Islam, S., &Apu, K. U. (2024). Decentralized vs. Centralized database solutions in blockchain: advantages, challenges, and use cases. *Global Mainstream Journal of Innovation, Engineering & Emerging Technology*, *3*(4), 58-68.

Kwami, U. A. (2024). Repositioning Technical Vocational Education and Training (TVET) for Youth Empowerment and Entrepreneurship: An Agenda for Renewed Hope in Nigeria. *BW Academic Journal*, 7-7.

Modugno, G., & Di Carlo, F. (2019). Financial sustainability of higher education institutions: A challenge for the accounting system. In *Financial sustainability of public sector entities: The relevance of accounting frameworks* (pp. 165-184). Cham: Springer International Publishing.

Muthaiyah, S., Phang, K., &Sembakutti, S. (2021). Bridging skill gaps and creating future ready accounting and finance graduates: an exploratory study. *F1000Research*, *10*, 892.

Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system.

Nwankwo, P. E., Igwe, A. O., &Nnamani, C. O. (2025). Effect of Automated Accounting Software on the Efficiency of Nigerian SMEs' Financial Operations. *Global Journal of Auditing and Finance*, *7*(1), 1-17.

Obilade, O. O., &Akinsooto, T. A. (2025). Innovative Approaches to University Financial Stability: The Role of Experiential Learning During Economic

Crises. *Journal of Adult Education in Tanzania*, *26*(2), 34-63.

Peres, G. (2018). Blockchain technology and accounting: A systematic review. Journal of Accounting and Finance, 18(2), 1-20.

Salawu, M. K., Dokai, J. O., &Olaleye, J. A. (2025). Evaluation of the Challenges Confronting Preparation of Financial Report of Selected State Governments in Nigeria. *International Journal of Finance & Banking Studies*, *14*(1), 11-19.

Tyokyaa, C. I. (2024). A critical examination of corruption in Nigerian public universities: Challenges and strategic solutions. *Journal of Educational Review*, *15*(1), 84-96.

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