

INNOVATION IN EDUCATION FUND MANAGEMENT (A STUDY OF THE APPLICATION OF BLOCKCHAIN TECHNOLOGY FOR TRANSPARENCY AND EFFICIENCY)

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Abstract

This research aims to explore the potential for applying blockchain technology to increase transparency and efficiency in managing education funds in schools. The research method used is a qualitative approach, through interviews with education managers and analysis of field findings. The research results show that blockchain technology has great potential in increasing transparency, accountability and efficiency in the management of education funds. By recording every transaction openly and irreversibly in the blockchain, schools can increase the level of transparency and enable real-time monitoring of funds. The use of smart contracts can also automate most administrative processes, reducing the risk of human error and saving time and costs. Recommendations for future research are to further explore the application of blockchain technology in broader educational contexts, as well as deepen understanding of the technical challenges, security, and associated social and economic impacts. By conducting further research in this area, we can expand our knowledge of the potential of blockchain technology in improving the overall quality of education.

Keywords: Innovation, education funding, blockchain .

Abstrak

Penelitian ini bertujuan untuk mengeksplorasi potensi penerapan teknologi blockchain dalam meningkatkan transparansi dan efisiensi dalam pengelolaan dana pendidikan di sekolah. Metode penelitian yang digunakan adalah pendekatan kualitatif, melalui wawancara dengan pengelola pendidikan dan analisis terhadap temuan lapangan. Hasil penelitian menunjukkan bahwa teknologi blockchain memiliki potensi besar dalam meningkatkan transparansi, akuntabilitas, dan efisiensi dalam pengelolaan dana pendidikan. Dengan mencatat setiap transaksi secara terbuka dan tidak dapat diubah dalam blockchain, sekolah dapat meningkatkan tingkat transparansi dan memungkinkan pemantauan dana secara real-time. Penggunaan smart contracts juga dapat mengotomatisasi sebagian besar proses administratif, mengurangi risiko kesalahan manusia dan menghemat waktu serta biaya. Rekomendasi untuk penelitian berikutnya adalah untuk mengeksplorasi lebih lanjut penerapan teknologi blockchain dalam konteks pendidikan yang lebih luas, serta memperdalam pemahaman tentang tantangan teknis, keamanan, dan dampak sosial dan ekonomi yang terkait. Dengan melakukan penelitian

lanjutan dalam bidang ini, kita dapat memperluas pengetahuan kita tentang potensi teknologi blockchain dalam meningkatkan kualitas pendidikan secara keseluruhan.

Kata kunci: Inovasi, dana pendidikan, blockchain

INTRODUCTION

Innovation in the management of education funds is a crucial aspect of efforts to increase efficiency and effectiveness in the use of education funds in schools. Effective management of education funds has become a factor in increasing quality education at all levels. However, often problems arise in the management of education funds in schools, such as lack of transparency, non-optimal use of funds, and minimal accountability. According to Bahanan & Wahyudi (2023), problem management of existing education funds shows necessity for innovation in the management of education funds. Innovation can encompass a variety of aspects, beginning with the use of technology and information. For management finance schools, the development of participatory fund management models involves all stakeholder interests, up to the development of sustainable and results-oriented fund management strategies. With existing innovation in the management of education funds, it is hoped that this can increase accountability, transparency, and effectiveness in the use of education funds in schools (Hasanah, 2014; Rusdiana, 2014; Yusuf, 2023).

A number of studies have previously been done to explore various aspects of the management of education funds. Findings show that there is potential to increase efficiency and effectiveness in the use of education funds through various innovations (Nugraha, 2020; Nurdin & Wijaya, 2019; Salsabila et al., 2023; Winaya et al., 2022). However, it is still required to study more and carry on to identify innovative models that can be implemented in a way that is broad and sustainable across a wide range of contexts in education. With notice challenges and potential innovation in the management of education funds, research aims to dig deeper into innovative strategies that can increase efficiency and effectiveness in the use of education funds in schools. Through a comprehensive qualitative and expected study, this can make a significant contribution to development policies and practices and better management of education funds at the local, regional, and national levels (Hadisi & Muna, 2015; Pitriyani, 2023; Purwanto, 2015).

A study previously possible has identified problems general in the management of education funds, such as lack of transparency, minimal accountability, or suboptimal use of funds (Langeningtias et al., 2021; Mahendra, 2023; Suryawijaya, 2023). However, the focus of this research will be on discovering innovative solutions that can be used to overcome problems. For example, research previously possible has noted that a lack of transparency in the management of education funds can result in misuse of funds or confusion in the allocation budget. However, research will try to explore various technological information or a fund management model that can increase transparency and accountability, such as the use of digital platforms to track real-time use of funds or the development of an open and easy reporting system understood by all stakeholders (Dewi & Hakiki, 2023; Fathurohman et al., 2023; Subasman & Aliyyah, 2023).

Additionally, research, which is also possible, will expand the scope geographically or contextually from the study previously conducted. For example, research previously Possible has done in context formal education in state schools; however, this study will explore innovative solutions that can be applied in context informal education or non-formal education, such as training programs, skills, or education inclusive for groups prone to. With this method and research, this will make a wide contribution to the development policies and practices management of relevant education funds for various contexts of education.

The methodology will be used in the study. This will cover approach, comprehensive qualitative. to explore various innovative strategies in the management of education funds. Research methods: qualitative possible researcher to understand more about context, perceptions, and experiences of stakeholders interested in the management of education funds. Approach This will involve various techniques for data collection, such as in-depth interviews, observational participatory, and analytical documents, to get a comprehensive understanding of challenges and potential solutions in the management of education funds. Additionally, research, which is also possible, will use an approach involving participatory all-holder interests, including teachers, heads of school, parents, students, and representatives of the of the public.. By involving all stakeholders in the research process, we hope to gain a deeper understanding of education fund management issues and innovative solutions for implementation.

This study is also possible and will involve a comparative approach to comparing various models of managing education funds in various countries, contexts, or regions. Approach: This will allow researchers to identify influencing factors, effectiveness, and sustainability from various models of education fund management as well as explore opportunities for transferring and adapting practices best from one context to another. Thus, research is expected to make a significant contribution to development policies and practices and make the management of education funds more effective, efficient, and sustainable. With a deeper understanding of the challenges and potential solutions in the management of education funds, as well as involving all stakeholders in the research process, it is hoped that this can create a stronger foundation to increase quality education at all levels.

A study about innovation in the management of education funds has very important benefits in the context of the repair education system (Ridwan & Sakdiyah, 2022). Through study, this will create a deeper understanding of the challenges and potential solutions in the management of education funds in schools. The main benefit is enhanced effectiveness, efficiency, and transparency in the use of education funds. Identifying innovative models and best practices through research can provide valuable guidance for policymakers, school leaders, teachers, and stakeholders interested in increasing education fund management. Additionally, via an approach involving participatory all-holder interests, research can also be done to strengthen engagement and engagement of the of the public in the retrieval process and decision-related education. Thus, research can make a significant contribution in an effort increase quality education in a way that,

overall, sure that any funds invested in education give optimal results for students and society.

METHOD

To understand more about moderate phenomena researched, researchers use study qualitative. According to Murdiyanto (2020), qualitative research methods focus on understanding the depth, interpretation, and disclosure meaning of the data collected. The type of research used by researchers, i.e., studies and usage studies, is because researchers can understand in a way deep context, process, and complexity of moderate phenomena researched (Iswadi et al., 2023). Types of research This possible researcher will dig for perspectives, experiences, and possible meanings hidden in the data collected related to innovation in the management of education funds (study application technology blockchain for transparency and efficiency). Research results can give in-depth, contextual, and detailed insights about the cases studied, which can be used to inform policy, practice, or development theory.

RESULTS AND DISCUSSION

Based on findings from the study field and interviews with managers of education, there are diverse problems faced in the management of education funds at the school level. One of the main challenges expressed is a lack of transparency in fund management. Many managers of education state that information related to the allocation and use of funds is often not easily accessible to all interested parties, such as teachers, parents, students, and society. Obscurity This can create distrust and dissatisfaction with the use of funds, which ultimately hinders the effectiveness of educational programs. Additionally, findings from the field also highlight the need for skill enhancement in managerial and administrative management education. In between, they confess difficulty in compiling an appropriate budget, tracking spending, and arranging reports of accurate finances. Lack of understanding about principles based on accounting and management finances also becomes an obstacle in the effort increase efficiency in the management of education funds.

Problems aside, research also reveals that participation and involvement of all interested parties in the management of education funds are still not optimal. Although there is effort to involve teachers, parents, students, and representatives of the of the public in the retrieval process of decisions related to education funding, level of participation and involvement still varies across different schools. A number of schools may experience obstacles in push participation active from all holder interests, which can hinder transparency and accountability in fund management.

However, not all findings are about problems. There are also innovative solutions that have been implemented in several schools for increasing the management of education funds. For example, some schools have successfully applied blockchain technology, such as application finance or digital platforms, to make monitoring and reporting real-time use of funds easier. Additionally, several schools have to develop a participatory fund management model that involves all interested parties in the planning, implementation, and evaluation processes of fund management. Through active participation from all

stakeholder interests, this model helps ensure that needs and priorities are considered in the allocation of education funds.

Application blockchain technology has become an interesting topic in an effort increase transparency and efficiency in various fields, including the management of education funds (Limbong, 2021). Under this, the researcher will explain more details about how blockchain technology can be applied in context education as well. How matter This is related to the challenges and findings in the study.

1. Introduction about Blockchain Technology

Blockchain technology is a draft underlying technology for various types of digital currencies, such as Bitcoin. Basically, blockchain is a big, decentralized note taking all transactions or activities that occur in a network. Every transaction is saved in a block and connected in a chronological way, forming a chain block (blockchain). According to Urfiyya & Sulastiningsih (2021), the main uniqueness of blockchain technology is that every block is connected to another block and has a code with complex cryptography, so transaction No can be changed or faked with ease.

2. Application of Blockchain in Management of Education Funds

In context education, application blockchain technology can bring lots of benefits, especially in fund management (Arwani & Priyadi, 2024). One of the primary ways that blockchain can be used is to record transactions that are transparent and cannot be changed regarding the use of educational funds. For example, every time education funds are used to buy books, equipment, or extracurricular activities, transactions can be noted in the blockchain with complete details like date, amount, and description of the of the transaction. Information This can be accessible to all interested parties, including parents, students, teachers, and institutions that supervise education, to increase transparency in fund management (Haeran et al., 2022).

Additionally, blockchain technology, according to Hidayati et al. (2023), can be used to increase efficiency in the management of education funds. For example, by utilizing smart contracts, schools can automate some administrative processes related to fund management, such as paying teachers's salaries or other routine expenses. Smart contracts are code-executed programming that is automatic when conditions that have been set are fulfilled. By using smart contracts, administrative processes can be automated without the need involve a third party or a laborious manual process.

3. Relationships with Findings Study

When we see findings from studies related to the to the management of education funds in the field, there are a number of possible findings connected with the potential application of blockchain technology. One of the main challenges identified in the study is a lack of transparency in the fund management process. Information about the allocation and use of funds is frequently difficult to access for all interested parties, which causes ambiguity and uncertainty in fund management. With the application of blockchain technology, all transactions related to education funding can be noted in a way that is open or can be changed, increasing transparency in a significant way.

Additionally, research also found that efficiency in the management of education funds still remains a problem. Many managers in education face constraints in compiling budgets, tracking expenses, and reporting proper use of funds in a timely and accurate manner. With the use of blockchain technology, in part large administrative processes can be automated through the use of smart contracts, reducing the risk of error and saving time as well as cost administration.

However, although blockchain technology is promising lots of benefits, there are a number of necessary challenges to overcome to implement it successfully. One of the main challenges is the availability of the infrastructure necessary technology to support blockchain implementation. This matter includes the availability of a stable internet network and a security system computer to prevent cyber attacks (Wattimena et al., 2024). Apart from that, sufficient investment is also required in training and education to ensure that all holders of interest understand the potential and limitations of blockchain technology (Nurahmawati et al., 2023).

4. Conclusions and Implications

Overall, implementation of blockchain technology in the management of education funds has a big potency. To increase transparency and efficiency, we must all at once overcome a number of challenges identified in the study. However, to apply technology in a way that is effective, it is necessary to have strong commitment from all holder interests, investment in infrastructure-appropriate technology, and adequate education about the associated benefits and challenges of blockchain technology. With these steps, the management of education funds can become more open, efficient, and effective, which in turn will contribute to improving quality education as a whole.

CONCLUSION

From the results of the of the research, it was concluded that the application blockchain technology in the management of education funds has a big potential to increase transparency, accountability, and efficiency. Findings show that the main challenges in fund management, such as lack of transparency and efficiency in administration, can be overcome with technology. This . With take notes, every transaction, whether open or not, can be changed in the blockchain, increasing transparency and enabling real-time monitoring of funds. In addition, the use of smart contracts can automate large administrative processes, reducing the risk error and saving time as well as cost. Recommendation for study next is to explore more, carry on application blockchain technology in context, and further education broadens and deepens understanding about challenge technical, security, and impact-related social and economic issues. With our advanced study in the field, we can expand our knowledge about potency blockchain technology and increase quality education in a way.

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