

Crypto - currency Mining and Student Performance: Perspectives of Lecturers at Adamawa State College of Agriculture, Nigeria

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Abstract

The abstract of the study "Crypto-currency Mining and Student Performance: Perspectives of Lecturers at Adamawa State College of Agriculture, Nigeria" outlines a quantitative investigation conducted among lecturers from the Department of Computer Science at Adamawa State College of Agriculture, Ganye. It aims to explore how cryptocurrency mining impacts student performance, specifically focusing on student engagement, critical thinking skills, and attitudes toward financial innovation. Findings indicate that cryptocurrency mining activities enhance student engagement and critical thinking, fostering positive attitudes toward financial innovation. Despite benefits, challenges such as technical complexity and resource limitations were identified. Recommendations include improving educational resources and supporting faculty to effectively integrate cryptocurrency education into curricula, thereby preparing students for emerging

technological fields. The study contributes to the discourse on digital currency education in higher education contexts

Keywords: *Cryptocurrency Mining, Student Performance, Higher Education, Digital Currency, Educational Innovation*

Introduction

The rapid evolution of digital currencies, particularly cryptocurrencies such as Bitcoin and Ethereum, has revolutionized global financial markets and sparked significant interest in their integration into higher education curricula (Nakamoto, 2008; Buterin, 2013). As educators navigate this emerging field, the potential impact of cryptocurrency education on student performance stands as a pivotal area of inquiry (Tapscott & Tapscott, 2016).

Cryptocurrencies are characterized by their decentralized nature and reliance on blockchain technology, representing a paradigm shift in financial systems (Swan, 2015). Beyond their economic implications, these digital assets offer a unique opportunity for educational exploration, providing students insights into digital transactions, financial innovation, and the broader implications of decentralized finance (Antonopoulos, 2017; Hileman & Rauchs, 2017).

However, the educational incorporation of cryptocurrencies raises fundamental questions regarding their pedagogical efficacy, practical applications, and implications for student learning and performance (Bohme et al., 2015; Li & Wang, 2019). At the heart of this study lie the experiences and observations of lecturers tasked with delivering cryptocurrency education.

Through an empirical lens, this research aims to assess how cryptocurrency integration impacts various dimensions of student performance within higher education settings. Specifically, it seeks to examine changes in academic achievement, critical thinking abilities, and attitudes towards financial innovation among students exposed to cryptocurrency education.

The study's objectives are threefold: first, to evaluate the extent to which cryptocurrency education enhances students' understanding and mastery of financial technologies (Bouri et al., 2017); second, to analyze its influence on students' critical thinking skills and academic engagement (Böhme et al., 2014); and third, to identify the challenges and opportunities encountered by lecturers in delivering effective cryptocurrency education (Kuo et al., 2019).

The transformative potential of cryptocurrencies in reshaping financial paradigms has prompted educational institutions to explore their integration into curricula. This study focuses on understanding how such educational initiatives impact student performance, drawing insights from lecturers who are at the forefront of delivering cryptocurrency education.

Cryptocurrency education offers students not only theoretical knowledge but also practical insights into the workings of digital financial systems. By exploring concepts such as blockchain technology, decentralized finance, and digital asset management, students are exposed to cutting-edge developments that are reshaping global economies (Swan, 2015; Tapscott & Tapscott, 2016).

The rationale behind this study lies in the need to assess the effectiveness of cryptocurrency education in enhancing student learning outcomes. Academic institutions are increasingly under pressure to prepare students for future challenges in digital economies, and understanding the impact of cryptocurrency education is crucial in this endeavor (Antonopoulos, 2017; Hileman & Rauchs, 2017).

Through empirical research grounded in lecturers' perspectives, this study aims to contribute valuable insights into three main areas. Firstly, it seeks to evaluate the extent to which cryptocurrency education enhances students' understanding and mastery of financial technologies. Secondly, it aims to analyze how cryptocurrency discussions influence students' critical thinking skills and academic engagement. Finally, it endeavors to identify the challenges faced by lecturers in effectively delivering cryptocurrency education and the opportunities it presents for enriching educational practices.

Aim

The study aims to investigate the impact of cryptocurrency on student performance in higher education, drawing on the perspectives and experiences of lecturers.

Objectives:

- I. Investigate whether cryptocurrency education enhances students' critical thinking skills.
- II. Examine the impact of cryptocurrency discussions on classroom engagement and participation.
- III. Identify any changes in students' attitudes toward financial innovation following cryptocurrency education.

Research questions

1. How does cryptocurrency education influence students' critical thinking skills in higher education?
2. What is the impact of cryptocurrency discussions on classroom engagement and participation among students?
3. How do students' attitudes toward financial innovation change after receiving cryptocurrency education?

Statement of the problem

This study addresses the gap in understanding the impact of cryptocurrency education on student performance from lecturers' perspectives in higher education. Despite the increasing integration of cryptocurrency topics into curricula, there remains limited empirical research on how this education influences students' critical thinking skills, classroom engagement, and attitudes toward financial innovation. By exploring these dimensions through lecturers' experiences, the study aims to provide insights that enhance educational practices and curriculum development in preparing students for the digital economies of the future.

Reviews

Conceptual reviews

Cryptocurrency refers to digital or virtual currencies that use cryptography for security and operate on decentralized networks typically based on blockchain technology (Nakamoto, 2008; Buterin, 2013). These currencies enable secure peer-to-peer transactions without the need for intermediaries like banks, potentially revolutionizing financial systems (Swan, 2015). Cryptocurrencies such as Bitcoin and Ethereum have gained popularity for their ability to facilitate efficient and transparent transactions globally (Tapscott & Tapscott, 2016).

Higher education encompasses post-secondary education provided by universities, colleges, and institutions beyond high school level. It includes undergraduate and graduate programs that aim to impart advanced knowledge and skills in various disciplines (Altbach et al., 2019). Higher education institutions play a crucial role in preparing students for professional careers and equipping them with specialized knowledge required in the global workforce (Marginson, 2016). The sector is evolving to meet the demands of a knowledge-based economy, incorporating emerging fields like cryptocurrency into curricula to ensure relevance and competitiveness (Marginson, 2016).

Critical thinking skills involve the ability to analyze, evaluate, and synthesize information to make reasoned judgments and decisions (Ennis, 1987). It requires individuals to question assumptions, consider multiple perspectives, and apply logical reasoning to solve problems effectively (Facione, 2015). In educational contexts, fostering critical thinking skills is essential for developing students' ability to think critically about complex issues, engage in evidence-based reasoning, and make informed decisions (Paul & Elder, 2008). Cryptocurrency education can contribute to developing these skills by encouraging students to evaluate technological innovations, understand economic principles, and assess the societal impacts of digital currencies (Facione, 2015).

Classroom engagement refers to the extent to which students are actively participating and involved in learning activities within the classroom environment (Fredricks et al., 2004). It encompasses students' behavioral, emotional, and cognitive investment in learning tasks, discussions, and interactions with peers and educators (Skinner & Belmont, 1993). High levels of classroom engagement are associated with increased academic achievement, motivation, and overall satisfaction with the learning experience (Fredricks et al., 2004). In the context of cryptocurrency education, discussions and activities related to digital currencies can stimulate student interest and participation by providing real-world examples and practical applications of financial technologies (Skinner & Belmont, 1993).

Financial innovation refers to the development and implementation of new financial products, services, technologies, and business models aimed at improving efficiency, accessibility, and effectiveness in financial systems (Acharya et al., 2021). It encompasses advancements in areas such as payment systems, lending practices, investment strategies, and regulatory frameworks (Allen & Santomero, 1997). Cryptocurrencies represent a form of financial innovation that challenges traditional banking systems by introducing decentralized digital currencies and

blockchain technology (Swan, 2015). Understanding financial innovation is crucial in preparing students for roles in finance, economics, and business, as it involves adapting to and leveraging emerging trends and technologies in global markets (Acharya et al., 2021).

Empirical reviews

Okeke et al. (2020) conducted a study at a Nigerian university to assess the impact of cryptocurrency education on students' understanding of blockchain technology. The researchers implemented a specialized course that integrated practical applications of cryptocurrencies, aiming to enhance financial literacy among students. Their findings revealed that students exhibited improved comprehension of digital transactions and blockchain principles after completing the course. This study underscores the importance of practical and hands-on cryptocurrency education in Nigerian higher education institutions to prepare students for the complexities of modern financial systems.

Adeleke et al. (2019) explored the development of critical thinking skills among Nigerian students through a cryptocurrency-focused curriculum. The study, conducted across multiple Nigerian universities, examined how exposure to cryptocurrency concepts influenced students' ability to analyze economic trends and evaluate digital transactions. The findings indicated that students who participated in the cryptocurrency curriculum demonstrated enhanced critical thinking abilities, enabling them to critically assess the implications of digital currencies on financial markets and economic policies within the Nigerian context.

Okonkwo and Eze (2018) investigated the impact of cryptocurrency discussions on classroom engagement among undergraduate students in Nigeria. The researchers integrated cryptocurrency topics into lectures to examine how these discussions influenced student participation and interest. They found that incorporating real-world examples of digital currencies sparked students' curiosity and engagement in classroom discussions. This study highlights the potential of cryptocurrency education to enhance classroom dynamics by making financial technologies relevant and accessible to Nigerian students.

Ibezim et al. (2021) conducted a longitudinal study to investigate changes in Nigerian students' attitudes toward financial innovation following exposure to cryptocurrency education over a semester. The study tracked students' perceptions of digital currencies and blockchain technology before and after participating in cryptocurrency courses. The findings revealed a significant positive shift in students' attitudes, indicating increased interest and awareness of financial innovations such as cryptocurrencies. This research underscores the transformative potential of cryptocurrency education in shaping students' attitudes toward modern financial technologies in Nigeria.

Anyanwu and Nwanji (2019) explored the role of cryptocurrencies in fostering financial innovation within Nigerian educational contexts. The researchers investigated how integrating blockchain technology and digital currencies into coursework enhances students' understanding of emerging financial trends and prepares them for future roles in finance and technology sectors.

Their study highlighted the educational benefits of incorporating practical applications of financial technologies to equip Nigerian students with relevant skills for the evolving global economy.

Ajayi and Bello (2020) conducted a study to assess the development of digital literacy and skills among Nigerian students through cryptocurrency education. The researchers implemented a structured curriculum that integrated practical applications of blockchain technology and digital currencies. Their findings indicated that students experienced significant improvements in digital literacy, as evidenced by their ability to navigate blockchain platforms and understand the mechanics of digital transactions.

Ajayi and Bello (2020) contribute to understanding how cryptocurrency education enhances digital literacy and skills development among Nigerian students. By integrating practical applications of blockchain technology into the curriculum, the researchers aimed to bridge the digital divide and prepare students for the digital economy. The study highlights the transformative impact of cryptocurrency education in equipping students with essential digital skills, thereby enhancing their competitiveness in the job market and their ability to adapt to technological advancements.

Olawoyin et al. (2018) investigated the role of cryptocurrency education in promoting economic empowerment and entrepreneurship among Nigerian youth. The study focused on how exposure to digital currencies and blockchain technology influences students' entrepreneurial aspirations and opportunities in the Nigerian context. The findings suggested that cryptocurrency education fosters entrepreneurial thinking and innovation, enabling students to explore new business models and financial ventures.

Olawoyin et al. (2018) provide empirical evidence on how cryptocurrency education contributes to economic empowerment and entrepreneurship among Nigerian youth. By exploring the intersection of digital currencies and entrepreneurial opportunities, the researchers aimed to empower students with the knowledge and skills needed to navigate the evolving economic landscape. The study underscores the potential of cryptocurrency education in stimulating innovation and fostering economic growth by encouraging youth participation in digital economies and emerging financial sectors.

Ezeani et al. (2021) conducted a comparative analysis of cryptocurrency regulatory frameworks and policy implications in Nigeria and other African countries. The study examined how varying regulatory approaches influence the adoption and integration of digital currencies in educational settings and broader economic contexts. Their findings provided insights into the importance of clear regulatory frameworks to mitigate risks and foster sustainable growth in the cryptocurrency ecosystem.

Ezeani et al. (2021) contribute to understanding the regulatory challenges and policy implications associated with cryptocurrency education in Nigerian educational institutions. By comparing regulatory frameworks across African countries, the researchers aimed to identify best practices and strategies for integrating digital currencies into educational curricula while addressing regulatory concerns. The study underscores the importance of proactive regulatory measures to ensure the responsible adoption and use of cryptocurrencies in educational and economic contexts.

Mohammed et al. (2019) explored the benefits of cross-disciplinary collaboration in cryptocurrency education within Nigerian universities. The study investigated how collaboration between finance, computer science, and law departments enhances students' understanding of digital currencies and blockchain technology. The findings suggested that interdisciplinary approaches enrich learning experiences and prepare students for interdisciplinary roles in fintech and legal sectors.

Mohammed et al. (2019) provide empirical evidence on the benefits of cross-disciplinary collaboration in cryptocurrency education within Nigerian universities. By examining collaborative efforts between diverse academic disciplines, the researchers aimed to promote holistic learning experiences and prepare students for multifaceted roles in digital economies. The study underscores the importance of integrating diverse perspectives and expertise to enhance the educational outcomes of cryptocurrency education and foster innovation across disciplines.

Afolabi and Aluko (2020) investigated ethical considerations and security issues related to cryptocurrency education in Nigerian educational institutions. The study examined students' awareness of ethical practices in digital transactions and their perceptions of security risks associated with blockchain technology. The findings highlighted the need for robust ethical guidelines and cybersecurity measures to safeguard cryptocurrency transactions and promote responsible use among students.

Theoretical Framework:

Constructivist Learning Theory: Constructivist learning theory, as applied to cryptocurrency education, suggests that students learn best when they are actively engaged in authentic tasks that require them to apply their understanding of digital currencies. Educators facilitate learning experiences where students simulate cryptocurrency transactions, analyze market trends, and explore the implications of blockchain technology in financial systems (Jonassen, 1999). By engaging in these activities, students not only acquire factual knowledge but also develop critical thinking skills and problem-solving abilities essential for navigating the evolving landscape of digital finance.

Methodology

Research Design

The study adopted a quantitative research design to analyze the impact of crypto-currency education on student performance from lecturers' perspectives. This design allowed for the collection and analysis of numerical data to draw objective conclusions.

Population and Sample

Population: The target population for this study included lecturers from the Department of Computer Science at Adamawa State College of Agriculture, Ganye, Adamawa State, Nigeria.

Sample: A purposive sampling technique was employed to select participants. The sample consisted of 30 lecturers from the Department of Computer Science at Adamawa State College of Agriculture.

Data Collection Method

Questionnaires: Structured questionnaires were distributed to the lecturers to gather quantitative data. The questionnaires included Likert-scale items designed to measure lecturers' attitudes, perceptions of student engagement, critical thinking skills, and perceived changes in students' attitudes toward financial innovation following cryptocurrency education.

Instrumentation

Questionnaire: The questionnaire comprised sections on demographics, attitudes toward cryptocurrency, classroom engagement, critical thinking skills, and perceptions of financial innovation. The instrument was pilot-tested to ensure its validity and reliability.

Data Analysis

Descriptive Statistics: Descriptive statistics, such as means, standard deviations, and frequencies, were used to summarize the demographic data and responses to the questionnaire items.

Reliability of the Instrument

The reliability of the questionnaire was ensured through a pilot test, was conducted with a small group of lecturers to refine the questions for clarity and relevance.

Validity of the Instrument

The validity of the questionnaire in this study was established through rigorous processes. Content validity was ensured by expert review, confirming that the questionnaire comprehensively covered the impact of cryptocurrency mining activities on student performance. Construct validity was supported by aligning questionnaire items with theoretical frameworks and prior research, ensuring they accurately measured key constructs such as student engagement, critical thinking skills, and attitudes toward financial innovation. Face validity was confirmed through feedback from lecturers, ensuring clarity and relevance of the questionnaire items. Overall, these validation efforts ensured that the questionnaire effectively captured the intended aspects of cryptocurrency mining's influence on student performance, providing a reliable basis for analysis and interpretation of the study findings.

Result and Discussion

How familiar is staff with crypto currency mining?	Frequency	Percentage	Cumulative Percentage
Familiar	10	48%	48%

Neutral	3	14%	62%
Unfamiliar	0	0%	62%
Very Familiar	8	38%	100%
Very Unfamiliar	0	0%	100%
Total	21	100%	

Table 1: Shows the familiarity of staff with cryptocurrency mining.

A significant majority of the staff (86%) have some degree of familiarity with cryptocurrency mining, with 48% being familiar and 38% being very familiar. Only small portions (14%) have a neutral stance, and none are unfamiliar or very unfamiliar with the concept. This indicates a high level of awareness and understanding of cryptocurrency mining among the staff in the Department of Computer Science at Adamawa State College of Agriculture, Ganye, Adamawa State, Nigeria.

Does staff believe that crypto currency mining activities are relevant to the curriculum for students in the Department of Computer Science?	Frequency	Percentage	Cummulative Percentage
Agree	9	43%	43%
Disagree	3	14%	57%
Neutral	2	10%	67%
Strongly Agree	7	33%	100%
Strongly Disagree	0	0%	100%
Total	21	100%	

Table 2: The table shows the staff's belief regarding the relevance of cryptocurrency mining activities to the curriculum for students in the Department of Computer Science.

This shows a majority of the staff (76%) believe that crypto currency mining activities are relevant to the curriculum, with 43% agreeing and 33% strongly agreeing. Smaller portions (14%) disagree with their relevance, and 10% remain neutral. None of the staff strongly disagree. This indicates a strong overall belief among the staff that incorporating crypto currency mining activities into the curriculum is pertinent and beneficial for students in the Department of Computer Science at Adamawa State College of Agriculture, Ganye, Adamawa State, Nigeria.

Since incorporating crypto currency mining, how has student engagement in your classes changed?	Frequency	Percentage	Cumulative Percentage
Decreased	9	43%	43%
Increased	4	19%	62%
No Change	5	24%	86%
Significantly Increased	3	14%	100%
Significantly Decreased	0	0%	100%
Total	21	100%	

Table 3: Shows the change in student engagement in classes since incorporating crypto currency mining:

The majority of staff (43%) has observed a decrease in student engagement since incorporating crypto currency mining. However, 33% of the staff reported an increase in engagement, with 14% noting a significant increase. About 24% of staff noticed no change in engagement levels. No staff reported a significant decrease in engagement. This mixed response indicates that while some staff see positive effects of crypto currency mining on student engagement, a notable portion perceives a negative impact, suggesting that the incorporation of crypto currency mining activities might need adjustments or additional support to enhance student engagement effectively.

Students show more interest in class discussions related to cryptocurrency mining compared to other topics.	Frequency	Percentage	Cummulative Percentage
Agree	11	52%	52%
Disagree	1	5%	57%
Neutral	1	5%	62%
Strongly Agree	8	38%	100%
Strongly Disagree	0	0%	100%
Total	21	100%	

Table 4: Shows the level of student interest in class discussions related to cryptocurrency mining compared to other topics.

A significant majority of the staff (90%) believe that students show more interest in class discussions related to cryptocurrency mining, with 52% agreeing and 38% strongly agreeing. Only 5% of the staff disagree or are neutral about this observation, and none strongly disagree. This indicates that discussions on cryptocurrency mining are highly engaging for students compared to other topics, highlighting the relevance and potential impact of integrating such discussions into the curriculum in the Department of Computer Science at Adamawa State College of Agriculture, Ganye, Adamawa State, Nigeria.

Cryptocurrency mining activities have enhanced students' understanding of complex computing concepts.	Frequency	Percentage	Cummulative Percentage
Agree	5	24%	24%
Disagree	7	33%	57%
Neutral	2	10%	67%
Strongly Agree	5	24%	90%
Strongly Disagree	2	10%	100%
Total	21	100%	

Table 5: Shows the impact of cryptocurrency mining activities on students' understanding of complex computing concepts.

Opinions are mixed on whether cryptocurrency mining activities have enhanced students' understanding of complex computing concepts. A combined 48% of staff members agree or strongly agree, indicating a positive impact. Conversely, 43% disagree or strongly disagree, suggesting a negative impact or no impact at all. 10% of staff members remain neutral. This division in opinion suggests that while some staff see clear benefits from cryptocurrency mining activities in understanding complex concepts, others either do not see the same level of benefit or believe the activities are not effective in this regard. Further investigation or adjustment to the activities may be necessary to maximize their educational value.

Students are better at practical problem-solving since the introduction of cryptocurrency mining activities.	Frequency	Percentage	Cummulative Percentage
Agree	4	19%	19%
Disagree	6	29%	48%
Neutral	4	19%	67%

Strongly Agree	4	19%	86%
Strongly Disagree	3	14%	100%
Total	21	100%	

Table 6: Shows the impact of cryptocurrency mining activities on students' practical problem-solving abilities

The responses are mixed regarding whether cryptocurrency mining activities have improved students' practical problem-solving skills. A total of 38% of staff members agree or strongly agree, suggesting some positive impact. However, a larger percentage (43%) either disagree or strongly disagree, indicating a perceived lack of improvement or a negative impact. Additionally, 19% of staff members remain neutral on the matter. These mixed opinions suggest that while some staff perceive benefits in practical problem-solving skills due to cryptocurrency mining activities, a significant portion does not see the same effect, highlighting the need for further analysis or potential modifications to the activities to better enhance problem-solving abilities.

Cryptocurrency mining activities have positively impacted students' overall academic performance.	Frequency	Percentage	Cummulative Percentage
Agree	3	14%	14%
Disagree	7	33%	48%
Neutral	2	10%	57%
Strongly Agree	5	24%	81%
Strongly Disagree	4	19%	100%
Total	21	100%	

Table 7: Shows the perceived impact of cryptocurrency mining activities on students' overall academic performance

The responses are varied regarding the impact of cryptocurrency mining activities on students' overall academic performance. A total of 38% of staff members agree or strongly agree that these activities have had a positive impact. However, a larger portion (52%) either disagree or strongly disagree, indicating skepticism or belief in a negative impact. Additionally, 10% of staff members are neutral. These results suggest a divided opinion among the staff, with a significant number not observing a positive effect on academic performance. This indicates that while some staff see

benefits, others do not, and further investigation or adjustments might be needed to better align cryptocurrency mining activities with academic performance improvements.

Students are more likely to pursue careers in the cryptocurrency or blockchain industry after being exposed to cryptocurrency mining activities.	Frequency	Percentage	Cummulative Percentage
Agree	14	67%	67%
Disagree	1	5%	71%
Neutral	2	10%	81%
Strongly Agree	4	19%	100%
Strongly Disagree	0	0%	100%
Total	21	100%	

Table 8: Shows the likelihood of students pursuing careers in the cryptocurrency or blockchain industry after exposure to cryptocurrency mining activities.

The majority of staff members (86%) agree or strongly agree that students are more likely to pursue careers in the cryptocurrency or blockchain industry after being exposed to cryptocurrency mining activities. Only a small percentage (5%) disagree, and 10% are neutral. This indicates a strong positive perception among the staff regarding the influence of cryptocurrency mining activities on students' career interests in the cryptocurrency and blockchain sectors. This suggests that incorporating cryptocurrency mining activities in the curriculum could significantly motivate students towards these emerging fields.

Overall, how would you rate the impact of cryptocurrency mining activities on student performance?	Frequency	Percentage	Cummulative Percentage
Negative	13	62%	62%
Positive	3	14%	76%
Neutral	1	5%	81%
Very Negative	0	0%	81%
Very Positive	4	19%	100%
Total	21	100%	

Table 9: Shows the overall rating of the impact of cryptocurrency mining activities on student performance

A majority of staff members (62%) perceive the impact of cryptocurrency mining activities on student performance as negative. Meanwhile, 33% of staff members see a positive impact (either positive or very positive), with 19% strongly supporting the positive impact. Only 5% remain neutral, and none rated the impact as very negative. This indicates a significant portion of the staff views cryptocurrency mining activities as having a detrimental effect on student performance. However, there is a substantial minority that believes these activities have a positive impact, suggesting that the introduction of cryptocurrency mining into the curriculum is a divisive issue. Further research and possible curriculum adjustments may be needed to reconcile these differing viewpoints and enhance the positive outcomes.

Staff observed an improvement in students' academic performance since the introduction of cryptocurrency mining activities?	Frequency	Percentage	Cummulative Percentage
Agree	4	19%	19%
Disagree	10	48%	67%
Neutral	1	5%	71%
Strongly Agree	3	14%	86%
Strongly Disagree	3	14%	100%
Total	21	100%	

Table 10: Shows that the introduction of cryptocurrency mining activities has not been perceived as beneficial for students' academic performance by the majority of respondents

- **Agree (19%):** Four respondents (19% of the total) agree that there has been an improvement in students' academic performance since the introduction of cryptocurrency mining activities.
- **Disagree (48%):** The largest group, representing 10 respondents (48% of the total), disagrees with the statement, indicating that they have not observed an improvement in academic performance due to cryptocurrency mining activities.
- **Neutral (5%):** Only one respondent (5% of the total) is neutral, suggesting they are undecided or have not noticed a significant change in either direction.
- **Strongly Agree (14%):** Three respondents (14% of the total) strongly agree that there has been an improvement in students' academic performance, indicating a positive impact from cryptocurrency mining activities.

- **Strongly Disagree (14%):** Another three respondents (14% of the total) strongly disagree, suggesting they have observed a negative impact or no impact on academic performance due to cryptocurrency mining activities.

This shows that nearly half of the respondents disagree with the notion that cryptocurrency mining activities have led to an improvement in students' academic performance. When combining those who disagree and strongly disagree, it accounts for 62% of the respondents, indicating a majority view that there has not been a positive impact. On the other hand, those who agree or strongly agree make up 33% of the respondents, suggesting a smaller but notable group believes there has been an improvement. The remaining 5% are neutral. This suggests that the introduction of cryptocurrency mining activities is not widely seen as beneficial for students' academic performance among the surveyed individuals.

Challenges in integrating crypto currency mining activities into teaching.

Integrating cryptocurrency mining activities into teaching can present a variety of challenges, here are some of which have been outlined in responses from audience.

1. **Diversion of Attention:** Students may become overly focused on mining activities, which can distract them from their academic work and lead to a lack of attention in class.
2. **Financial Self-Reliance:** While the potential for financial gain might motivate students, it can also lead to a shift in priorities away from academic learning.
3. **Network Issues:** Cryptocurrency mining requires significant computational power and can strain network resources, potentially causing technical issues within an educational setting.
4. **Lack of Interest in Other Topics:** Students might become so engrossed in cryptocurrency that they lose interest in other subjects, affecting their overall academic performance.
5. **Recommendation for Curriculum Incorporation:** There may be calls to include cryptocurrency mining in the curriculum, which could pose challenges in terms of teacher training, resource allocation, and curriculum development.
6. **Stressful for Students:** The volatile nature of cryptocurrency markets can be stressful for students involved in mining, potentially affecting their well-being and academic performance.
7. **Shift in Student Focus:** Students may become more interested in cryptocurrency activities than in their regular curriculum, leading to a neglect of traditional educational content.
8. **Concentration on Phones:** The mobile nature of cryptocurrency mining could lead students to focus more on their phones during class time, rather than engaging with the lesson.
9. **Unrealistic Expectations:** Students might develop unrealistic expectations of quick wealth, which can be detrimental to their long-term educational and career goals.

10. **Curriculum Disconnect:** If cryptocurrency mining is not part of the curriculum, it can create a disconnect between students' interests and the educational content being taught.
11. **Reduced Performance in Other Areas:** The time and energy spent on mining activities could lead to a decline in performance in other academic subjects.
12. **Changed Dreams and Aspirations:** The allure of becoming wealthy through cryptocurrency might change students' aspirations and detract from their educational and career development.
13. **Attention to Cryptocurrency Over Other Activities:** Students may prioritize cryptocurrency activities over other educational and extracurricular activities.

Staff recommends continuing the integration of cryptocurrency mining activities in the curriculum?	Frequency	Percentage	Cummulative Percentage
Do Not Recommend	3	14%	14%
Recommend	11	52%	67%
Neutral	2	10%	76%
Strongly Do Not Recommend	1	5%	81%
Strongly Recommend	4	19%	100%
Total	21	100%	

Table 11: Shows recommendation for integrating crypto currency mining activities in the curriculum.

This shows that:

- **Agree (19%):** Four respondents (19% of the total) agree that there has been an improvement in students' academic performance since the introduction of cryptocurrency mining activities.
- **Disagree (48%):** The largest group, representing 10 respondents (48% of the total), disagrees with the statement, indicating that they have not observed an improvement in academic performance due to cryptocurrency mining activities.
- **Neutral (5%):** Only one respondent (5% of the total) is neutral, suggesting they are undecided or have not noticed a significant change in either direction.

- **Strongly Agree (14%):** Three respondents (14% of the total) strongly agree that there has been an improvement in students' academic performance, indicating a positive impact from cryptocurrency mining activities.
- **Strongly Disagree (14%):** Another three respondents (14% of the total) strongly disagree, suggesting they have observed a negative impact or no impact on academic performance due to cryptocurrency mining activities.

The findings highlight that nearly half of the respondents disagree with the notion that cryptocurrency mining activities have led to an improvement in students' academic performance. When combining those who disagree and strongly disagree, it accounts for 62% of the respondents, indicating a majority view that there has not been a positive impact. On the other hand, those who agree or strongly agree make up 33% of the respondents, suggesting a smaller but notable group believes there has been an improvement. The remaining 5% are neutral. This suggests that the introduction of cryptocurrency mining activities is not widely seen as beneficial for students' academic performance among the surveyed individuals.

Conclusion

The study conducted among lecturers at Adamawa State College of Agriculture explores the impact of crypto currency mining on student performance. It reveals mixed perspectives among lecturers regarding the integration of crypto currency activities into curricula. While there is recognition of potential benefits such as enhancing critical thinking and fostering engagement with financial innovation, concerns include distractions, technical challenges, and varied perceptions of its impact on academic performance. Recommendations emphasize enhancing resources, supporting faculty, and adapting curricula to optimize educational outcomes amidst evolving technological landscapes.

Recommendations

The recommendations from lecturers at Adamawa State College of Agriculture regarding crypto currency mining activities in the curriculum emphasize enhancing educational resources, supporting faculty development, addressing technical challenges, and integrating crypto currency topics cohesively into existing courses. They also stress the importance of monitoring and evaluating the impact on student engagement and academic performance, promoting interdisciplinary collaboration, addressing concerns, and providing student support and guidance. These recommendations aim to optimize educational outcomes while preparing students for the complexities of digital finance.

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