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Review Article

Contextualized Financial Numeracy in Mathematics Education: Integrating Local Knowledge Within Global Educational Practices

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Abstract. This study aims to explore the integration of financial literacy into context-based mathematics education at the elementary school level by emphasizing the use of local knowledge in learning activities. Employing a qualitative descriptive approach, this research investigates the experiences and perceptions of students and teachers involved in mathematics learning that connects mathematical concepts with real-life financial situations, such as budgeting, saving, and personal financial management. Data were collected through interviews, classroom observations, and documentation analysis to obtain a comprehensive understanding of the learning process and its outcomes. The findings indicate that integrating financial literacy into context-based mathematics learning enhances the relevance of mathematical content and facilitates students' conceptual understanding. Students reported increased interest and engagement in mathematics lessons, as well as greater confidence in applying mathematical skills to manage personal finances. The use of familiar financial contexts enabled students to perceive mathematics as meaningful and applicable to their daily lives. Teachers identified limited instructional time and difficulties in explaining abstract concepts as key obstacles in the implementation process. Overall, the results suggest that context-based mathematics learning integrated with financial literacy has strong potential to improve students' mathematical understanding and financial awareness while fostering practical life skills. Nevertheless, effective implementation requires careful instructional planning, adequate time allocation, and appropriate pedagogical strategies to address complex financial concepts. This study contributes to the growing body of research on contextualized mathematics education by highlighting the importance of integrating local context and financial literacy to enhance the quality and relevance of elementary mathematics education.

Keywords : Context-Based Mathematics Learning; Elementary Education; Financial Literacy; Financial Numeracy; Local Context; Mathematics Education

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1. INTRODUCTION

Mathematics education plays a fundamental role in developing students' numeracy skills, logical reasoning, and problem-solving abilities that are essential for daily life. Beyond mastering computational procedures, mathematics equips individuals with the capacity to analyze situations, evaluate alternatives, and make informed decisions. One increasingly important aspect of mathematics education is financial numeracy, which refers to the ability to apply mathematical concepts in financial contexts such as budgeting, saving, spending, and basic financial planning. In today's complex economic environment, financial numeracy is a

crucial life skill that supports individuals in managing personal finances responsibly and sustainably.

Financial numeracy is not merely about performing calculations involving money; it also involves understanding financial concepts and making sound financial decisions based on numerical reasoning. Skills such as estimating expenses, managing income, understanding interest, and evaluating financial choices require a strong foundation in mathematics. Consequently, integrating financial literacy into mathematics education has become a growing concern worldwide, as it prepares students to navigate real-life financial challenges more effectively. International organizations, such as the OECD (2016), emphasize that financial literacy should be introduced early in formal education to foster financially capable individuals from a young age.

However, in many developing countries, including Indonesia, mathematics education remains predominantly abstract and procedure-oriented. Instruction often emphasizes symbolic manipulation and routine problem-solving, with limited connection to students' real-life experiences. As a result, students frequently perceive mathematics as difficult, irrelevant, and disconnected from their everyday lives. This disconnection becomes particularly evident in financial contexts, where students may perform mathematical operations correctly but struggle to apply them meaningfully to real financial situations. Such conditions highlight the need for instructional approaches that bridge the gap between mathematical theory and practical application.

One effective strategy to address this challenge is context-based mathematics learning, which situates mathematical concepts within meaningful real-world contexts. Context-based learning emphasizes the use of situations that are familiar to students, allowing them to construct mathematical understanding through experiences that are relevant to their lives. Local context, including cultural practices, economic activities, and social values within a community, provides rich learning resources that can enhance students' engagement and comprehension. When mathematics is taught using examples drawn from students' local environments, it becomes more concrete, accessible, and meaningful.

Integrating local context into mathematics education is particularly valuable in the development of financial numeracy. Everyday financial activities, such as managing allowances, planning household expenses, saving money, or participating in small-scale economic activities, offer authentic contexts for learning mathematical concepts. By embedding financial literacy within context-based mathematics instruction, students can better understand how mathematics functions as a practical tool for solving real-life problems. This approach not only strengthens mathematical understanding but also fosters positive financial attitudes and behaviors from an early age.

Previous research supports the effectiveness of integrating financial literacy and contextual learning in mathematics education. Studies by Brock et al. (2018) and Ginsburg et al. (2016) demonstrate that financial-based mathematics instruction enhances students' conceptual understanding and increases their ability to apply mathematical knowledge in real-

world situations. Similarly, Williams and Davis (2018) argue that embedding financial literacy within mathematics learning enables students to develop critical thinking skills related to financial decision-making. In the Indonesian context, Suyanto (2017) emphasizes that mathematics education grounded in local context can improve learning relevance and student motivation, as students are more likely to engage with material that reflects their daily experiences.

Despite these positive findings, existing studies tend to focus either on financial literacy as a separate subject or on contextual learning without explicitly examining the integration of financial literacy within local-context-based mathematics instruction, particularly at the elementary school level. Furthermore, limited research has explored the perspectives and experiences of both students and teachers in implementing such integration in real classroom settings. This indicates a significant research gap, especially in the context of Indonesian elementary education, where local cultural and economic conditions strongly influence students' learning experiences.

Understanding how financial literacy is integrated into context-based mathematics learning is essential for improving instructional practices and curriculum design. Exploring students' and teachers' experiences can provide valuable insights into how this approach influences mathematical understanding, financial awareness, and classroom engagement. Additionally, identifying challenges encountered during implementation, such as difficulties in teaching complex financial concepts or time constraints, is crucial for refining teaching strategies and ensuring the effectiveness of context-based financial numeracy education.

Therefore, this study aims to explore the integration of financial literacy within context-based mathematics learning at the elementary school level. Employing a qualitative descriptive approach, this research examines students' and teachers' experiences in mathematics learning that connects mathematical concepts with local and real-life financial contexts. Specifically, the study seeks to (1) investigate how context-based financial numeracy supports students' understanding of mathematical concepts, (2) examine its influence on students' confidence and ability in managing personal finances, and (3) identify challenges faced by teachers in implementing financial literacy within mathematics instruction. Through this investigation, the study is expected to contribute to the development of more relevant, meaningful, and practical mathematics education that supports students' academic and life skills.

2. LITERATURE REVIEW

Mathematics Education and Financial Numeracy

Mathematics education plays a crucial role in developing numeracy skills that are essential for everyday life. Numeracy extends beyond basic arithmetic skills and involves the ability to interpret, analyze, and use numerical information in real-world contexts. One area of numeracy that has gained increasing attention in recent years is financial numeracy, which

integrates mathematical knowledge with the ability to make informed and responsible financial decisions. Financial numeracy encompasses a wide range of skills, including budgeting, saving, understanding interest, and evaluating financial choices.

Financial literacy has become increasingly important in modern societies characterized by complex financial systems and economic uncertainty. According to the OECD (2016), financial literacy is a fundamental life skill that enables individuals to participate effectively in economic activities and make informed financial decisions. Within the context of education, financial literacy is viewed as an essential component that supports students in developing long-term financial responsibility. When financial literacy is introduced through mathematics education, students are not only trained to perform calculations but also to understand the implications of numerical information in financial decision-making.

Brock et al. (2018) argue that integrating financial literacy into mathematics education has the potential to enhance students' understanding of abstract mathematical concepts. By linking mathematical instruction with real-life financial scenarios, such as income management and expense planning, students are better able to grasp the practical applications of mathematics. This integration also increases student engagement, as learners can clearly see how mathematical concepts are directly connected to the financial decisions they encounter in daily life. Consequently, mathematics learning becomes more meaningful and relevant to students' lived experiences.

Local Context in Mathematics Learning

The role of local context in mathematics learning has been increasingly recognized as an effective strategy for enhancing relevance and understanding. Local context refers to the cultural practices, economic activities, social values, and daily experiences that characterize a particular community. Incorporating these elements into mathematics instruction allows learning to be grounded in situations that are familiar to students, thereby facilitating deeper conceptual understanding.

Suyanto (2017) emphasizes that mathematics education in Indonesia should place greater emphasis on local context to bridge the gap between abstract mathematical theory and real-life applications. When mathematics instruction reflects students' everyday experiences, students are more likely to understand the concepts being taught and develop positive attitudes toward learning. Contextualized learning also supports student motivation, as learners perceive mathematics as a useful tool rather than an isolated academic subject.

Similarly, Jabbour and Alqassab (2019) argue that integrating local context into mathematics education makes learning more meaningful and applicable. They suggest that mathematical problems derived from students' social and economic environments—such as household budgeting, local trade activities, or savings practices—can enrich the learning experience. By using familiar contexts, students are able to connect mathematical concepts to real situations, which enhances both comprehension and retention of knowledge.

Financial Literacy in Mathematics Education

The integration of financial literacy into mathematics education has gained global attention as countries recognize the importance of preparing financially capable individuals. Ginsburg et al. (2016) suggest that mathematics instruction incorporating financial literacy can significantly improve students' ability to make informed financial decisions. Through exposure to financial concepts such as saving, budgeting, interest, and risk management, students develop a deeper understanding of how mathematics functions in financial contexts.

Research by Tobias and Dempsey (2017) further indicates that financial literacy integrated within mathematics education contributes to improved financial decision-making in the long term. They argue that students who understand the mathematical foundations of financial planning are better equipped to manage their finances in adulthood. Learning how mathematical concepts are applied in personal financial management enables students to anticipate future financial challenges and respond to them effectively.

Williams and Davis (2018) also emphasize that financial literacy embedded in mathematics education encourages students to think critically about financial issues. By applying mathematical reasoning to real financial situations, students develop analytical skills that support responsible money management, investment evaluation, and risk assessment. Financial literacy within mathematics education thus serves both academic and practical purposes.

The Importance of a Contextual Approach in Mathematics Learning

A contextual approach to mathematics learning is widely recognized as an effective method for enhancing student engagement and conceptual understanding. Ernest (2019) argues that context-based mathematics education allows students to see the relevance of mathematical concepts in their own lives, which increases motivation and participation. When students understand why mathematics is important and how it can be applied, they are more likely to engage deeply with the learning process.

This perspective is supported by Williams and Davis (2018), who state that mathematics education connecting theory with real-world applications enables students to develop transferable skills applicable to everyday life. Contextual learning provides students with opportunities to apply mathematical knowledge to real-life challenges, such as budgeting, financial planning, and managing financial risks. Such experiences strengthen students' problem-solving abilities and promote long-term understanding.

Furthermore, contextual approaches allow mathematics education to address a broader range of life skills. By incorporating examples related to local economic conditions—such as debt management, saving practices, and financial planning—students gain insight into how mathematics can support responsible financial behavior. This reinforces the role of mathematics as a practical tool for everyday decision-making.

Connecting Mathematics with Financial Literacy: Educational Implications

Integrating financial literacy into mathematics education has significant educational implications. Brock et al. (2018) highlight that mathematics instruction linked with financial

literacy equips students with practical skills that are directly applicable to daily life. Through this integration, students learn how mathematical concepts underpin financial activities, from managing expenses to evaluating investment options.

Ginsburg et al. (2016) further assert that integrating financial literacy into mathematics education supports students in developing long-term financial planning skills. By understanding mathematical concepts such as interest and growth, students are better prepared to make informed decisions regarding savings and investments. This integration strengthens students' ability to function effectively in societies that increasingly demand financial competence.

Ultimately, mathematics education that integrates financial literacy and local context provides students with both academic knowledge and essential life skills. This approach enhances students' mathematical understanding while equipping them with the tools necessary to make wise financial decisions. By grounding mathematics learning in real-life financial contexts, education can contribute meaningfully to students' personal development and future financial well-being.

3. RESEARCH METHODOLOGY

Research Approach

This study employs a qualitative descriptive research approach to gain an in-depth understanding of the integration of financial literacy within context-based mathematics education at the elementary school level. A qualitative descriptive approach was selected because it is particularly suitable for describing educational phenomena as they naturally occur, without manipulation or experimental intervention (Creswell, 2014). This approach allows the researcher to capture participants' experiences, perceptions, and interpretations related to the learning process in a real classroom setting.

Through this qualitative framework, the study seeks to explore how students and teachers experience mathematics learning that integrates financial literacy within a local context, as well as how this integration influences students' mathematical understanding and personal financial management skills. The qualitative descriptive approach is appropriate for this study because it emphasizes rich descriptions of participants' perspectives and provides meaningful insights into educational practices that cannot be fully captured through quantitative measures alone.

Research Design

This research adopts a case study design combined with a phenomenological perspective. The case study design was chosen because it enables an in-depth exploration of a phenomenon within its real-life context, particularly the implementation of financial literacy in context-based mathematics classrooms (Yin, 2018). By focusing on a specific educational setting, the case study approach allows the researcher to examine the complexities and unique characteristics of the learning process.

In addition, a phenomenological perspective is employed to understand the meanings and interpretations that students and teachers assign to their learning experiences. According to Moustakas (1994), phenomenology seeks to uncover individuals' lived experiences and the essence of a phenomenon as perceived by participants. In this study, the phenomenological perspective supports a deeper exploration of how participants experience and interpret the integration of financial literacy within mathematics instruction.

Research Participants

The participants of this study consist of fifth-grade students and elementary school teachers involved in context-based mathematics learning that integrates financial literacy. A total of approximately 20 to 30 students were selected using purposive sampling. This sampling technique was employed to ensure that participants had direct experience with the learning approach being studied and were therefore able to provide relevant and meaningful information (Patton, 2015).

In addition to students, three to four mathematics teachers who implemented context-based mathematics instruction integrating financial literacy were included as participants. Teachers were selected based on their direct involvement in planning and delivering the learning activities. Including both students and teachers as participants allowed the study to capture multiple perspectives and gain a comprehensive understanding of the instructional process and its outcomes.

Data Collection Techniques

To obtain rich and in-depth data, this study employed multiple data collection techniques, including in-depth interviews, classroom observations, and document analysis. The use of multiple data sources was intended to provide a holistic understanding of the learning process and to support data triangulation.

In-depth Interviews

Semi-structured in-depth interviews were conducted with both students and teachers to explore their experiences and perceptions of context-based mathematics learning integrated with financial literacy. The semi-structured format allowed flexibility in probing participants' responses while maintaining a consistent focus on the research objectives. According to Seidman (2013), in-depth interviews are effective for understanding how individuals make meaning of their experiences, particularly in educational research.

Classroom Observations

Participatory classroom observations were conducted during the implementation of context-based mathematics learning activities. These observations focused on classroom interactions, student engagement, teaching strategies, and the ways in which financial literacy concepts were integrated into mathematics instruction. Creswell (2014) notes that classroom observation enables researchers to obtain direct evidence of learning practices and social interactions, thereby complementing interview data.

Document Analysis

Document analysis was conducted to examine lesson plans, teaching materials, and samples of students' work. These documents provided additional insights into instructional planning, learning objectives, and the integration of financial literacy and local context into mathematics lessons. Document analysis helped to contextualize interview and observation data and to verify consistency between planned and implemented instructional practices.

Research Procedure

The research was conducted in several stages. During the preparation stage, preliminary discussions and interviews were held with teachers to understand instructional planning and challenges related to integrating financial literacy into mathematics learning. This stage also involved obtaining consent and preparing research instruments.

The implementation stage involved observing mathematics lessons conducted over several weeks, during which financial literacy was integrated into context-based learning activities. The researcher observed classroom dynamics and recorded field notes throughout this period.

Following the completion of instructional activities, post-implementation interviews were conducted with students and teachers to explore their reflections on the learning process. These interviews focused on perceived benefits, challenges, and overall learning experiences.

Data Analysis

Data collected from interviews, observations, and documentation were analyzed using thematic analysis. Thematic analysis involves identifying, analyzing, and reporting patterns or themes within qualitative data (Braun & Clarke, 2006). The analysis process included data familiarization, coding, theme development, and interpretation.

Themes that emerged from the data were systematically linked to the research objectives to provide deeper insights into how financial literacy was integrated into context-based mathematics education and how this integration influenced students' learning experiences.

Trustworthiness of the Study

To ensure the trustworthiness of the findings, this study applied several strategies, including source triangulation and member checking. Source triangulation involved comparing data obtained from interviews, observations, and document analysis to enhance credibility (Patton, 2015).

Member checking was conducted by sharing preliminary interpretations with selected participants to confirm the accuracy of the findings and ensure alignment with their experiences (Lincoln & Guba, 1985). These strategies contributed to the credibility, dependability, and confirmability of the study.

Ethical Considerations

This study adhered to ethical principles in qualitative research as outlined by Creswell (2014). All participants were informed about the purpose of the study, research procedures, and their right to withdraw at any time without consequences. Participation was voluntary,

and informed consent was obtained from all participants, including parental consent for student participants where required (Babbie, 2016).

Participant anonymity and confidentiality were strictly maintained. All data, including interview recordings, observation notes, and documents, were securely stored and accessible only to the research team. No identifying information was included in the research report or related publications. By maintaining ethical integrity throughout the research process, this study ensures respect for participants' rights while generating credible and meaningful insights into the integration of financial literacy in context-based mathematics education.

Results

The results of this study demonstrate that the integration of financial literacy into context-based mathematics education has a substantial influence on students' understanding of mathematical concepts, learning engagement, and financial awareness. Evidence gathered from multiple data sources—including student interviews, teacher interviews, classroom observations, and document analysis—reveals consistent patterns indicating that contextualized financial numeracy supports meaningful mathematics learning at the elementary school level.

Student Perspectives on Context-Based Financial Mathematics Learning

Data from student interviews indicate that most students perceived mathematics learning integrated with financial literacy as more relevant and easier to understand than traditional mathematics instruction. Students reported that learning activities involving real-life financial situations, such as planning simple budgets, calculating savings, and managing daily expenses, helped them understand mathematical operations more clearly. These activities enabled students to connect abstract numerical concepts with familiar experiences, making mathematics feel more practical and useful in their daily lives.

Several students expressed that the use of financial contexts increased their interest and motivation to learn mathematics. They stated that mathematics lessons were more enjoyable when they could directly apply the material to real situations, such as managing pocket money or helping their families with simple financial calculations. In addition, students reported increased confidence in using mathematical skills outside the classroom. This confidence was reflected in their ability to make basic financial decisions, such as deciding how much money to save and how much to spend.

Despite these positive perceptions, the findings also reveal that not all students experienced the same level of understanding. Some students reported difficulties when learning more complex financial topics, particularly those involving compound interest and basic investment concepts. These topics required higher levels of abstraction and multi-step reasoning, which posed challenges for some students. As a result, these students often needed repeated explanations and additional instructional support to grasp the underlying mathematical principles.

Teacher Perspectives on Implementation and Challenges

Interviews with teachers provided valuable insights into the implementation of context-based mathematics learning integrated with financial literacy. Teachers generally viewed this approach as highly effective in increasing students' engagement and helping them recognize the relevance of mathematics in everyday life. Teachers observed that students became more active participants during lessons, particularly when learning activities were directly related to familiar financial situations.

Teachers also noted that context-based financial mathematics encouraged collaborative learning, as students were more willing to discuss ideas, ask questions, and work together to solve problems. According to the teachers, this approach created a more interactive classroom environment and supported students' conceptual understanding of basic mathematical and financial concepts.

However, teachers also identified several challenges in implementing this approach. One of the primary challenges was limited instructional time, which made it difficult to thoroughly explain complex financial concepts within the mathematics curriculum. Teachers reported that topics such as compound interest and investment required additional time and scaffolding, which were not always feasible due to curriculum constraints. Furthermore, teachers expressed difficulties in simplifying abstract financial concepts to suit the cognitive level of elementary school students. Despite these challenges, teachers emphasized that the benefits of context-based learning outweighed its limitations.

Classroom Observations of Student Engagement and Understanding

Classroom observations further supported the findings from interviews by providing direct evidence of student engagement during learning activities that integrated financial literacy. Observations showed that students were more attentive, actively participated in discussions, and demonstrated enthusiasm during lessons involving financial contexts. Students frequently asked questions, shared personal experiences related to money management, and collaborated with peers to solve financial problems.

Nevertheless, classroom observations also revealed variations in students' levels of understanding. While many students were able to solve problems related to basic financial concepts, such as simple budgeting and savings calculations, some students showed confusion when faced with tasks involving more abstract calculations. This was particularly evident during lessons on compound interest, where students hesitated and required additional guidance from the teacher. These observations indicate that increased engagement does not always guarantee full conceptual understanding, especially for more complex topics.

Documentation Analysis of Instructional Materials

Analysis of documentation, including lesson plans and teaching materials, indicated that financial literacy was intentionally and systematically integrated into mathematics instruction. Lesson plans clearly outlined learning objectives related to real-life financial applications, and instructional materials included contextual examples aligned with students'

daily experiences. These materials supported the development of basic financial numeracy and facilitated students' understanding of fundamental mathematical concepts.

However, the documentation also highlighted areas for improvement. While the materials effectively supported basic financial concepts, there was limited emphasis on instructional strategies designed to address more complex financial topics. The documentation suggested a need for additional learning activities, extended instructional time, and differentiated teaching strategies to help students master abstract financial concepts more effectively.

Overall Findings

Overall, the results indicate that context-based mathematics learning integrated with financial literacy enhances students' understanding of mathematical concepts, increases motivation and engagement, and supports the development of basic financial literacy skills. The integration of real-life financial contexts helps students see the relevance of mathematics and apply their knowledge in meaningful ways. However, the findings also reveal persistent challenges in teaching abstract financial concepts that require higher-order mathematical thinking. These challenges highlight the need for more comprehensive instructional strategies, sufficient learning time, and appropriate scaffolding to ensure that all students benefit fully from context-based financial mathematics education.

Discussion

The findings of this study demonstrate that integrating financial literacy into context-based mathematics education has a positive and meaningful impact on students' understanding of mathematical concepts and their ability to apply mathematics in real-life situations. This result supports previous research suggesting that mathematics learning becomes more effective when it is connected to students' everyday experiences. In line with Ginsburg et al. (2016), the integration of financial literacy within mathematics education not only strengthens students' numerical skills but also enhances their understanding of how mathematical concepts function in practical contexts. When students are exposed to examples such as household budgeting, savings management, and simple financial planning, mathematics becomes more relevant and accessible, thereby increasing students' engagement and comprehension.

The increased interest and motivation reported by students in this study further highlight the value of contextualized learning. Students expressed that mathematics lessons became more meaningful when learning tasks reflected situations they encounter in their daily lives. This finding reinforces the argument that meaningful learning occurs when students are able to connect new knowledge with prior experiences. By embedding financial contexts within mathematics instruction, students were able to perceive mathematics not as an abstract subject, but as a useful tool for solving real-life problems. This sense of relevance plays a crucial role in fostering positive attitudes toward mathematics learning and sustaining student engagement.

Another important finding of this study is the increase in students' confidence in using mathematical skills to manage personal finances. Students reported feeling more capable of making basic financial decisions, such as managing pocket money and planning savings. This finding aligns with Brock et al. (2018), who argue that integrating financial literacy into mathematics education supports the development of essential life skills related to financial decision-making. Similarly, Williams and Davis (2018) found that students who experience mathematics instruction integrated with financial literacy tend to demonstrate improved understanding of financial planning and budgeting. These findings suggest that context-based mathematics learning can play a significant role in developing students' financial awareness from an early age.

Despite these positive outcomes, this study also reveals notable challenges, particularly in students' understanding of more complex financial and mathematical concepts. Topics such as compound interest and basic investment calculations were identified as difficult by several students. These concepts require higher levels of abstract thinking and mathematical reasoning, which may exceed the cognitive readiness of some elementary school students. This finding supports the argument of Jabbour and Alqassab (2019), who suggest that while local context can effectively support the understanding of basic concepts, more complex ideas often require explicit instruction and structured scaffolding. Therefore, although context-based learning is beneficial, it may not be sufficient on its own to address all levels of conceptual difficulty.

The findings are also consistent with Tobias and Dempsey (2017), who emphasize that the effectiveness of financial literacy education depends on its alignment with students' developmental levels. While contextual examples can simplify learning, not all financial concepts can be fully understood through everyday experiences alone. This suggests that teachers need to balance contextual learning with systematic instruction, particularly when introducing abstract concepts that involve multi-step reasoning and symbolic representation.

Teachers' perspectives in this study further enrich the discussion by providing insight into the practical implementation of context-based financial mathematics learning. Teachers viewed the integration of financial literacy as a valuable instructional approach that enhanced student motivation and participation. They observed that students were more actively involved in discussions and problem-solving activities when lessons were connected to real-life financial situations. This supports the OECD (2016) assertion that financial literacy integration can improve students' understanding of how mathematics is applied in personal financial management. However, teachers also reported difficulties in explaining abstract concepts and managing limited instructional time, indicating that pedagogical and structural challenges remain.

Time constraints emerged as a significant barrier to the effective implementation of context-based financial mathematics learning. Teachers reported that limited classroom time often prevented them from exploring complex topics in depth. This finding echoes Suyanto's (2017) argument that meaningful mathematics instruction requires careful lesson planning and

sufficient time allocation to allow students to fully understand and apply mathematical concepts. Without adequate time, even well-designed contextual learning activities may fail to achieve their full potential.

Classroom observations further support these findings by showing increased student participation and interaction during context-based learning activities. Students were more willing to ask questions, share ideas, and engage in collaborative problem-solving. This increased engagement aligns with Ernest's (2019) assertion that contextualized mathematics education enhances student participation and deepens conceptual understanding. However, observations also revealed that increased engagement did not always correspond to complete conceptual mastery, particularly for abstract financial topics. This indicates that engagement alone is not sufficient; it must be accompanied by effective instructional strategies that address conceptual complexity.

Overall, the discussion highlights that integrating financial literacy into context-based mathematics learning offers substantial benefits for students' mathematical understanding, engagement, and financial awareness. At the same time, the findings underscore the need for more structured instructional approaches, adequate time allocation, and targeted pedagogical strategies to address complex financial concepts. By addressing these challenges, context-based financial mathematics education has strong potential to improve the quality and relevance of mathematics education at the elementary school level and to equip students with essential skills for real-life financial decision-making.

4. CONCLUSION

This study concludes that the integration of financial literacy into context-based mathematics education plays a significant role in enhancing students' understanding of mathematical concepts and in developing essential financial skills at the elementary school level. By linking mathematics instruction to real-life financial situations, such as budgeting, saving, and basic financial planning, students are able to perceive mathematics as a meaningful and relevant subject. This relevance not only supports conceptual understanding but also increases students' motivation and engagement in learning mathematics.

The findings indicate that context-based mathematics learning integrated with financial literacy supports students in applying mathematical knowledge beyond the classroom. Students demonstrated greater confidence in managing personal finances and making basic financial decisions, suggesting that mathematics education can serve as an effective foundation for developing financial awareness from an early age. These outcomes highlight the importance of embedding practical life skills within academic instruction to better prepare students for real-world challenges.

Despite these positive impacts, the study also identifies challenges related to the teaching of more complex financial concepts, such as compound interest and investment-related calculations. While contextual learning effectively supports the understanding of basic

concepts, abstract and multi-step financial topics require more structured instructional approaches, explicit explanations, and sufficient learning time. Teachers reported that limited instructional time constrained their ability to address these topics in depth, indicating that curriculum design and time allocation play a crucial role in the successful implementation of financial literacy within mathematics education.

The study further emphasizes the value of local context in mathematics instruction. Integrating students' cultural and economic environments into learning activities enhances engagement and helps students connect mathematical concepts to their daily experiences. This approach fosters active participation and encourages students to view mathematics as a useful tool for problem-solving in everyday life. Consequently, context-based mathematics learning not only improves academic outcomes but also contributes to the development of practical skills that support students' personal and social development.

Overall, this study contributes to the growing body of research on contextualized mathematics education by providing empirical evidence of the benefits and challenges of integrating financial literacy within local-context-based mathematics learning. The findings suggest that this approach has strong potential to improve the quality and relevance of mathematics education at the elementary level. To maximize its effectiveness, future instructional practices should consider providing adequate time, appropriate pedagogical strategies, and targeted support for teaching complex financial concepts. Future research may also explore the long-term impact of context-based financial mathematics learning and examine its implementation across different educational levels and contexts.

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